Resistive and Sensor Products

IRC

A Subsidiary of TT electronics plc

TT electronics

IRC

IRC has been an innovative leader in the design, development and manufacture of passive components for more than eighty years. What differentiates IRC from other component companies is the focus on resistor application solutions for each customer. IRC's goal is to be more than just another resistor supplier—rather than taking a commodity approach to every application, IRC believes that customer needs dictate the right product and the right service.

IRC, along with its sister company in the UK, Welwyn Components Limited, meets worldwide customer needs in the automotive, telecommunications, computer and military markets with a comprehensive product line, including advanced film, metal glaze and wirewound resistor products.

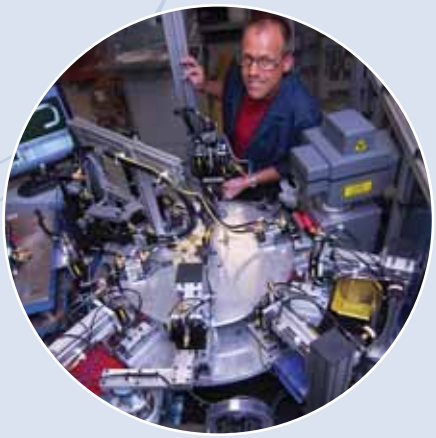
IRC and Welwyn products are sold throughout the world by a network of manufacturers' representatives and franchised distributors. In Europe, Welwyn and IRC products are supported by wholly-owned sales offices in Italy, France and Germany. In Asia, TT electronics sales offices in India, Singapore, Japan and China support a worldwide network of sales representatives.

IRC's proven resistor technology gives you the performance advantages you need—whether your applications call for thick film, thin film or wirewound resistive products.

Our wirewound resistors feature an alloy resistance wire precision-wound to a heat-conducting ceramic substrate, with welded endcaps and lead terminations, and silicone conformal coating protecting the resistive element.

IRC pioneered and perfected the tantalum nitride TaNFilm® process as the high-reliability alternative to nichrome for high humidity applications that require precision resistors.

Commitment to quality underlies every facet of IRC's operations. Every production lot is continually monitored for reliability and quality assurance by one of the industry's most comprehensive resistor test facilities, with complete military and commercial screening capabilities, along with a state-of-the art failure analysis lab and documentation control system.



The Wirewound and Film Technologies Division in Boone, NC manufactures high-reliability, wirewound and thick film cylindrical surface mount and leaded resistors.

The Advanced Film Division in Corpus Christi, TX uses a proprietary TaNFilm® process to produce consistent, inherently stable precision resistors with excellent temperature coefficients (TCR) and tolerances.

IRC's class 100 clean room allows the latest in thin film technology to produce a series of TaNFilm® surface mount resistors and TaNSil® resistor networks that are widely used in military/aerospace, commercial and precision applications.

IRC Surface Mount Resistive Product Selector Guide

Type	Series	Description	Power (Watts)	Impedance (Ohms)	Tolerance (±dB)	TCR (±ppm/°C)	Attenuation (dB)	Page/ Contact
Attenuators	PFC-A	TaNFilm® thin film attenuators	0.125	0.3 - 2	50 - 75	100	1 - 20	21 / A

			Power (Watts)	Resistance Range (Ohms)	Tolerance (± %)	TCR (±ppm/°C)		
Current Sense	CHP	Cylindrical Metal Glaze™ power resistor	0.125 - 2	0.1 - 2.2M	0.25 - 5	25, 50, 100		16 / W
	CHP-1X	Cylindrical Metal Glaze™ power resistor	1	0.1 - 10K	1, 2, 5	25, 50, 100		16 / W
	LRC	Thick film low value chip resistor	0.25 - 1	0.026 - 1	1 - 5	100		19 / A
	LRF	Thick film low value flip chip resistor	0.25 - 1	0.001 - 0.025	1 - 5	100		19 / A
	LRF3W	Power thick film resistor	3	0.002 - 0.2	1, 2, 5, 10	100		19 / A
	OARS	Open air current sense resistor	1	0.002 - 0.05	1,5	40, 240		21 / W
	OARS-XP	Open air current sense resistor	3 - 5	0.001 - 0.25	1-5	40		21 / W
	ULR	Metal element chip resistor	1 - 3	0.0005 - 0.01	1, 5	50, 75, 100, 150		28 / W
	WA80Z	Cement coated power wirewound resistor	2, 3, 5	0.015 - 6.8K	1, 2, 5, 10	200, 350		28 / W
	WSM	Molded power wirewound resistor	1, 2, 3	0.01 - 3K	1, 2, 5, 10	20, 100		30 / W
	WSML	Current detecting chip resistor	1, 2	0.005 - 10K	1, 5	100, 180		30 / W

Dynamic Braking	WDBR	Ultra low profile dynamic braking/ power resistor	2kW, 5kW	5 - 270	10	call factory		29 / W

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Typical Blow Times	
Fusible	FCR	Fusible chip resistor	0.5	10 - 51	2, 5	350	<50 Sec	18 / W

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)		
General Purpose	CHP	Cylindrical Metal Glaze™ power resistor	0.125 - 2	0.1 - 2.2M	0.25, 0.5, 1, 2, 5	50, 100, 25		16 / W
	CR	Thick film chip resistor	0.063, 0.1, 0.125, 0.25	1 - 100M	0.25, 0.5, 1, 2, 5	100, 200, 250, 350		17 / W
	MM	Cylindrical Metal Glaze™ power resistor	0.25, 1, 2	0.1 - 2.21M	1 - 5	50, 100		20 / W
	MRC	Cylindrical Metal Glaze™ high power density resistor	0.5 - 1	0.1 - 10K	0.2, 0.5, 1, 2, 5	50, 100, 200		20 / W
	WA80Z	Cement coated power wirewound resistor	2, 3, 5	0.015 - 6.8K	1, 2, 5, 10	200, 350		28 / W
	WCR	Thick film chip resistor	0.063, 0.1, 0.125, 0.25, 0.5, 1	1 - 22M	0.5, 1, 2, 5	50, 100, 200, 400		29 / A

			Power (Watts)	Resistance Range (Ohms)	Absolute Tolerance (±%)	Absolute TCR (±ppm/°C)		
High Frequency	CHC	Ceramic BGA termination arrays	0.6 - 1.2	10 - 4.7	1, 2, 5	100		16 / A
	CHC-SCSI	Chipscale SCSI LVD terminator network	1	R1 = 475 R2 = 121	1	100		16 / A
	CHC-Thevenin	Chipscale Thevenin termination network	1	R1= 50 - 75 R2= 22 - 25	1	100		16 / A
	MWR	TaNFilm® microwave chip resistor	0.25	50, 75	1, 2, 5, 10	25, 50, 100		21 / A
	PFC-HF	High frequency chip resistor terminator	0.1 - 0.25	50	1, 2, 5, 10	25, 50, 100		22 / A

For ordering information A = Advanced Film Division (AFD) (361) 992-7900
W = Wirewound and Film Technologies Division (WAFT) (828) 264-8861

IRC Surface Mount Resistive Product Selector Guide

Type	Series	Description	Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Limiting Element Voltage (Volts)	Page/ Contact
High Ohmic Value (Discrete)	CR	Thick film chip resistor	0.063, 0.125, 0.25, 0.5, 1.0	1 - 100M	0.1, 0.25, 0.5, 1, 2, 5	100, 200, 250, 350	50, 500	17 / W
	HR	High ohmic value thick film chip resistor	0.01, 0.125, 0.25	10M - 50G	5, 10, 25, 50	0 to -2000	100, 150, 200	18 / A
	HVC	High voltage chip resistor	0.3, 0.5, 1	100K - 100M	0.5, 1, 2, 5, 10	100	1000, 2000	19 / W

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)		
High Temperature	PFC-D-HT	High temperature TaNFilm® voltage divider	0.125	100 - 25K	1, 5	25, 50, 100		22 / A
	PFC-HT	High temperature TaNFilm® chip resistor	0.0625, 0.1, 0.125	5 - 85K	1, 5	25, 50, 100		22 / A

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Limiting Element Voltage (Volts)	
High Voltage	HVC	High voltage chip resistor	0.3, 0.5, 1	100K - 100M	0.5, 1, 2, 5, 10	100	1000, 2000, 3000	19 / W
	SMHP	High voltage D2PAK/ TO-263AB thick film power resistor	20	0.01 - 51K	1, 5	50, 100, 250	500	26 / A

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	MIL-Spec	
Military (Discrete)	MCHP	Cylindrical Metal Glaze™ Mil-qualified resistor	0.125 - 2	0.1 - 2.2M	1, 2, 5	100	DSCC 95011 DSCC 94048 DSCC 95006 DSCC 94047	20 / W
	PFC	TaNFilm® Mil-qualified precision chip resistor	0.5 - 0.25	10 - 125K	0.1 - 10	10 - 300	MIL-PRF-55342 DSCC 94015/16	21 / A

			Power (Watts)	Resistance Range (Ohms)	Absolute Tolerance (± %)	Ratio Tolerance (± %)	Absolute TCR (± ppm/°C)	TCR Tracking (± ppm/°C)	MIL-Spec	
Military (Network)	CCN	TaNFilm® Mil-qualified precision chip carrier resistor network	1	10 - 300K	0.05 - 2	0.01	15 - 100	2, 5	MIL-PRF-83401 DESC 87017/18	15 / A
	FP	TaNFilm® Mil-qualified precision flat pack resistor network	1	49.9 - 121K	0.1 - 2	0.01	25 - 300	2, 5, 20	MIL-PRF-83401	18 / A
	GUB	TaNFilm® Mil-qualified precision small outline IC resistor network	1 - 1.5	10 - 1000K	0.1 - 1	0.05	25, 50, 100	5	DESC 87017/18	18 / A
	SON	TaNFilm® Mil-qualified precision small outline leadless resistor networks	0.4 - 0.8	10 - 100K	0.05 - 5	0.01	25 - 100	5, 10, 20	MIL-PRF-83401	26 / A

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IRC Surface Mount Resistive Products Selector Guide

Type	Series	Description	Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Page/ Contact
Power	CHP	Cylindrical Metal Glaze™ power resistor	0.125 - 2	0.1 - 2.2M	0.25, 0.5, 1, 2, 5	25, 50, 100	16 / W
	PPS-1	Cylindrical Metal Glaze™ high power ceramic package resistor	1	0.1 - 348K	1, 2, 5	25, 50, 100	22 / W
	SC-3	High power dissipation thick film resistor	3	1 - 200	1, 2, 5	100	25 / A
	SMC	Cylindrical Metal Glaze™ compliant terminal resistor	1, 2	10 - 2M	1, 2, 5	50, 100	26 / W
	WA80Z	Cement coated power wirewound resistor	2, 3, 5	0.015 - 6.8K	1,2, 5, 10	200, 350	28 / W
	WSM	Molded power wirewound resistor	1, 2, 3	0.01 - 3K	1, 5	20, 100	30 / W
Precision (Discrete)	CHP	Cylindrical Metal Glaze™ power resistor	0.125 - 2	0.1 - 2.2M	0.25, 0.5, 1, 2, 5	25, 50, 100	16 / W
	PCF	Precision Nichrome chip resistor	0.05, 0.0625, 0.1, 0.125, 0.25	10 - 2M	0.1, 0.5	5, 10, 25, 50, 100	21 / A
	PFC	TaNFilm® precision chip resistor	0.1, 0.25, 0.33, 0.35, 0.8, 1	5 - 1M	0.02, 0.05, 0.1, 0.5, 1, 2, 5	10, 15, 25, 50, 100	21 / A
	WBA	TanFilm® precision wire bondable ceramic resistor	0.25	10 - 20K	0.1, 0.25, 0.5, 1, 5, 10	25, 50, 100,	28 / A
	WBC	TaNSil® precision wire bondable silicon resistor	0.25	10 - 1M	0.1, 0.25, 0.5, 1, 5, 10	25, 50, 100	28 / A

			Power (Watts)	Resistance Range (Ohms)	Absolute Tolerance (±%)	Ratio Tolerance (±%)	TCR (±ppm/°C)	TCR Tracking (±ppm/°C)	
Precision (Network)	CCN	TaNFilm® Mil-qualified precision chip carrier resistor network	1	10 - 300K	0.05	0.01	15 - 100	5	15 / A
	CHC	TanFilm® precision ceramic ball grid array resistor network	0.4 - 0.8	10 - 100K	0.1, 0.25, 0.5	0.05, 0.1, 0.5	25, 50, 100	5, 10, 25	16 / A
	FP	TaNFilm® Mil-qualified precision flat pack resistor network	1	49.9 - 121K	0.1	0.01	25 - 300	5	18 / A
	GUB	TaNFilm® Mil-qualified precision small outline IC resistor network	1 - 1.5	10 - 1000K	0.1	0.05	25	5	18 / A
	PFC-D	TaNFilm® precision chip voltage divider	0.25	10 - 150K	0.01, 0.5, 1	0.05, 0.1, 0.5, 1	25, 50, 100	5, 10, 20, 50	22 / A
	PFC-UD	Tantalum Ultride™ ultra precision divider networks	0.28 - 0.32	100 - 50K	0.02, 0.05, 0.1, 0.25, 0.5, 1	0.005, 0.01, 0.025, 0.02, 0.05, 0.1	10, 15, 25	1, 2, 5	22 / A
	SON	TaNFilm® Mil-qualified outline leadless resistor networks	0.4 - 0.8	10 - 100K	0.05	0.01	25 - 100	5	26 / A
	SON-U	Tantalum Ultride™ small outline ultra precision resistor networks	0.1 - 0.2	100 - 50K	0.02, 0.05, 0.1, 0.25, 0.5, 1	0.005, 0.01, 0.025, 0.02, 0.05, 0.1	10, 25, 50	1, 2, 5	26 / A
	SOT-143	TaNFilm® precision resistor network	0.25	100 - 50K	0.1, 0.25, 0.5, 1, 5, 10	0.05, 0.1, 0.25, 0.5, 1, 2	25, 50, 100, 250	2	26 / A
	SOT-23	TaNFilm® precision voltage divider network	0.25	10 - 100K	0.1, 0.25, 0.5, 1, 5, 10	0.05, 0.1, 0.25, 0.5, 1, 2	25, 50, 100, 250	2, 5, 10, 25, 50	27 / A

			Power (Watts)	Supply Voltage (Volts)	Diode Forward Voltage (Volts)	Channel Leakage Current (µAmps)	Channel Input Capacitance (pF)	ESD Protection (Volts)	
Schottky Networks	DNR-QDN001	Schottky diode termination network	1	-0.3 min. 7 max.	0.5 @ 10mA 0.8 @ 50mA	0.1	5 @ V_{IN} = 2.5V, V_{DD} = 5V	±4KV max.	24 / A
	DNR-QDN002	Schottky diode 17-channel ESD protection network	1	12 max.	0.651	1	12pF max.	±15KV (HBM, method 3015) ±8kV (Contact discharge)	24 / A
	DNR-QDN003	Schottky diode 18-channel termination network	1	-0.3 min. 7 max.	0.55 @ 1mA 1 @ 12mA	0.1	12pF max.	±15KV (HBM, method 3015) ±8kV (Contact discharge)	24 / A

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IRC Surface Mount Resistive Products Selector Guide

Type	Series	Description	Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Page/ Contact
Surge	HSF-1	Cylindrical Metal Glaze™ surge resistor	1	5.9, 6.8, 11, 27, 62, 68, 270	10	50, 100	18 / W
	PWC	Pulse withstanding thick film chip resistor	0.125, 0.33, 0.75, 1.5	1 - 10M	0.5, 1, 5	100, 200	23 / A
	SC-3	High power dissipation	3	1 - 200	1, 2, 5	100	25 / A

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	
Temperature Sensors	CHPT	Cylindrical Metal Glaze™ thermally sensitive resistor	0.4	500 - 10K	2, 5, 10	-2500	16 / W
	RTD	Platinum film temperature sensor	N/A	100 - 1K	0.5, 1, 2, 5	+3850	25 / A

			Power (Watts)	Resistance Range (Ohms)	Absolute Tolerance (±%)	Ratio Tolerance (±%)	Absolute TCR (±ppm/°C)	TCR Tracking (±ppm/°C)	
Wire-Bondable	WBA	TaNFilm® precision wire bondable ceramic resistor	0.25	10 - 20K	0.1, 0.25, 0.5, 1, 5, 10	0.05, 0.1, 0.25, 0.5, 1, 2, 5	25, 50, 100	5, 10, 20	28 / A
	WBC	TaNSil® precision wire bondable silicon resistor	0.25	10 - 1M	0.1, 0.25, 0.5, 1, 5, 10	0.05, 0.1, 0.25, 0.5, 1, 2, 5	25, 50, 100	2, 5, 10, 25, 50	28 / A
	WBC-CR	Chromaxx® precision high range wire bondable silicon resistor	0.25	1.01M - 2M	1, 2, 5, 10	0.5, 1, 2, 5	100	5	29 / A
	WBC-Divider	TaNSil® precision wire bondable silicon resistor network array	0.4 - 1	10 - 2.5M	0.1, 0.25, 0.5, 1, 5, 10	0.05, 0.1, 0.25, 0.5, 1, 2	25, 50, 100, 300	5	29 / A
	WBD-NET	TaNSil® wire bondable silicon network array resistor	0.4, 0.8, 1	10 - 2.5M	0.1	0.05, 0.1	25	5	29 / A
	WBC-CAP	TaNCap® wire bondable chip capacitor	20V - 55V	10pF - 1000pF	0.5	N/A	N/A	N/A	28 / A
	WBC-Multi-tap	TaNSil® wire bondable multi-tap chip resistor silicon network	0.25	100 - 80K	5, 10, 20	N/A	25, 50, 100	N/A	29 / A
	WBC-RC	TaNSil® wire bondable chip resistor/capacitor network	0.25	R =33 - 100 C = 47pF - 80pF	R = 10 C = 20	N/A	R = 150 C = 200	N/A	29 / A

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	
Wirewound	WA80Z	Cement coated power wirewound resistor	2, 3, 5	0.015 - 6.8K	1, 2, 5, 10	200, 350	28 / W
	WSM	Molded power wirewound resistor	1, 2, 3	0.01 - 3K	1, 5	20, 100	30 / W

			Power (Amps)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	
Zerohm	LRZ	Ultra low resistance jumper resistor	20-35A	<0.003	N/A	N/A	19 / A
	OARS-Z	Open air zerohm jumper resistor	65A	<0.001	N/A	N/A	21 / W
	WCA	Eight terminal package	0.65W	0.05	N/A	N/A	29 / A
	ZCHP	Cylindrical zerohm jumper resistor	0.63W	0.02 - 0.35	N/A	N/A	30 / W

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IRC Through Hole Resistive Products Selector Guide

Type	Series	Description	Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Page/ Contact
Current Sense	2500	Low resistance value metal film resistor	1.5	0.025 - 1	1, 2, 5, 10	100 - 350	14 / W
	4LPW	Four terminal wirewound resistor	3 - 15	0.005 - 1	1, 2, 3, 5, 10	40	14 / W
	CSL	Four terminal open air low ohm resistor	5	0.00025 - 0.0025	1, 2, 5	30	17 / W
	LOB	Low resistance metal element resistor	1 - 5	0.005 - 0.1	1, 3, 5	varies with resistance value	19 / W
	LPW	Low resistance power wirewound resistor	3 - 15	0.005 - 0.15	1 - 10	30 - 500	19 / W
	OAR	Open air sense resistor	1 - 5	0.0025 - 0.1	1 - 5	varies with resistance value (20 - 450)	21 / W
	OAR-TP	Open air tight pitch resistor	1 - 5	0.0025 - 0.1	1, 5	varies with resistance value (20 - 450)	21 / W
	PLO	Extremely low resistance power wirewound resistor	3 - 15	0.005 - 0.18	1, 2, 3, 5, 10	30 - 500	22 / W
	PWRL	Low resistance stand-up power wirewound resistor	3 - 10	0.01 - 0.18	1, 2, 3, 5, 10	50 - 500	23 / W
Dynamic Braking	PW	Power wirewound resistor	2, 3, 5, 7, 10, 15, 18, 22, 25	0.1 - 30K	5, 10	300 - +5500	23 / W
	PW (radial)	Power wirewound resistor	20, 30, 40, 50	0.08 - 2K	5, 10	300, 600	23 / W
	PWHW	Automotive dropping resistor	30, 45, 115	0.1 - 0.9	5	150	23 / W

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Typical Blow Times	
Fusible	ALFR-2/LFR-2	Telecommunications line feed resistor	2	1.8 - 1600	1, 5	50	<30 Sec	14 / W
	F-500	Precision controlled fusible resistor	0.3 - 1	0.2 - 200	2, 5, 10	50, 150	<0.5 Sec	17 / W
	FA8025	Fusible metal film resistor	0.25, 0.5, 1.5	0. 1- 22K	5	250	<30 Sec	18 / W
	SP20F	Fail-safe fusible molded wirewound resistor	1	0.1 - 1200	5, 10	150, 180	<30 Sec	27 / W
	SPF	Fail-safe fusible molded wirewound resistor	2	0.1 - 2400	5, 10	150, 180	<30 Sec	27 / W
	WFF	Fast fusible metal film resistor	0.25, 0.5, 1	0.1 - 27K	5	250, 350	<30 Sec	30 / W

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	
General Purpose	ARG	High power Metal Glaze™ resistor	1	1 - 5.1M	2, 5	100	14 / W
	AS	Semi-precision power wirewound resistor	0.25 - 14	0.1 - 175	0.5, 1, 3, 5	20	14 - 15 / W
	CCF	Carbon film resistor	0.125, 0.25, 0.5, 1, 2, 3	1 - 10M	2, 5	-0.005ppm/V	15 / W
	CCR	Carbon ceramic resistor	1	220 - 22K	5, 10, 20	200, 300	15 / W
	CMO	Metal oxide resistor	0.5, 1, 2, 3, 5	0.1 - 180K	1, 5	200	17 / W
	GF	Thick film metal glaze resistor	0.5 - 3	0.4 - 2M	1, 2, 5	50, 100, 200	18 / W
	GP	Precision metal film resistor	0.125, 0.25, 0.5	10 - 10M	0.1, 0.25, 0.5, 1	25, 50, 100	18 / W
	IBT	Carbon composition resistor	0.25, 0.5	1 - 20M	5, 10	250 - 2500	19 / W
	LAS	Economical semi-precision power wirewound resistor	1, 3	0.1 - 18K	0.5, 1, 3, 5	20	19 / W
	MOM	Metal oxide mini resistor	0.5, 1, 2, 3, 5	0.1 - 150K	1, 5	200	20 / W
	PW	Power wirewound resistor	2, 3, 5, 7, 10, 15, 18, 22, 25	0.1 - 30K	5, 10	300 - +5500	23 / W
	PW (radial)	Radial terminal power wirewound resistor	20, 30, 40, 50	0.08 - 2K	5, 10	300, 600	23 / W
	PWR	Standup power wirewound resistor	3, 5, 7, 10	0.1 - 18K	5, 10	300 - +5500	23 / W

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IRC Through Hole Resistive Products Selector Guide

Type	Series	Description	Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)		Page/ Contact
General Purpose	PWRG	Standup power Metal Glaze™ resistor	3, 5	1 - 1M	1, 2, 5, 10	100		23 / W
	RG	Commercial thick film Metal Glaze™ resistor	0.125 - 1	0.4 - 5.1M	0.1, 0.5, 1, 2, 5	25, 50, 100, 200		25 / W
	SP20	Fail-safe molded wirewound resistor	1	0.1 - 1200	5, 10	150, 180		27 / W
	SPH	Fail-safe molded wirewound resistor	2	0.1 - 2400	5, 10	150, 180		27 / W
	SPP	Economical conformal coated wirewound resistor	1, 2, 3	0.1 - 2400	5, 10	300, 600		27 / W
	T Wirewound	Commercial semi-precision power wirewound resistor	0.7 - 14	0.1 - 300K	0.1 - 10	20, 50, 400, 650		27 / W
	W	Vitreous enamalled power wirewound resistor	3, 5, 7, 10, 14	0.1 - 100K	1, 2, 5	+75, +200		28 / W

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Limiting Element Voltage (Volts)	
High Ohmic Value (Discrete)	3800	Ultra-high ohmic value thick film resistor	voltage-limited	100M - 1T	1, 2, 5, 10, 20	-500, -3500	500, 1000	14 / W
	CGH	High ohmic value thick film resistor	0.25, 0.5, 1, 2, 3, 5	100K - 2G	0.5, 1, 2, 5	50, 100	750 - 20000	16 / W
	CGX	High voltage precision thick film resistor	0.5, 1	50K - 1.5G	1, 2, 5	50, 100	3000 - 5000	16 / W
	F43/F44	High voltage thick film resistor	0.07, 1.3	2M - 150G	2, 5, 10	250, -2000	4000 - 28000	17 / W
	GC	High voltage precision thick film resistor	0.5	47K - 1G	1, 2, 5	100	3500	18 / W
	GS-3	High ohmic value semi-precision Metal Glaze™ resistor	3	1 - 3M	1, 2, 5	50, 100, 200	1000	18 / W
	MH	High voltage metal film resistor	0.25, 0.5	100K - 10M	1, 2, 5	100	1600, 3500	20 / W
	T-44	High voltage precision thick film resistor	1.5, 3.5, 10	1K - 45G	1, 2, 5	25, 50, 100	4000 - 100000	27 / W

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	
High Temperature	RG	Commercial thick film Metal Glaze™ resistor	0.125 - 1	0.4 - 5.1M	0.1, 0.5, 1, 2, 5	25, 50, 100, 200	25 / W
	T Wirewound	Commercial semi-precision power wirewound resistor	0.7 - 14	0.1 - 300K	0.1 - 10	20, 50, 400, 650	27 / W
	W	Vitreous enamelled power wirewound resistor	3, 5, 7, 10, 14	0.1 - 100K	1, 2, 5	+75, +200	28 / W

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Limiting Element Voltage (Volts)	
High Voltage	3800	Ultra-high value thick film resistor	voltage - limited	100M - 1T	1, 2, 5, 10, 20	-500, -3500	500, 1000	14 / W
	CGH	High value thick film resistor	0.25, 0.5, 1, 2, 3, 5	100K - 2G	0.5, 1, 2, 5	50, 100	750 - 20000	16 / W
	CGX	High voltage precision thick film resistor	0.5, 1	50K - 1.5G	1, 2, 5	50, 100	3000 - 5000	16 / W
	F43/F44	High voltage thick film resistor	0.07, 1.3	2M - 150G	2, 5, 10	-250, -2000	4000 - 28000	17 / W
	GC	High voltage precision thick film resistor	0.5	47K - 1G	1, 2, 5	100	3500	18 / W
	GS-3	High value semi-precision Metal Glaze™ resistor	3	1 - 3M	1, 2, 5	50, 100, 200	1000	18 / W
	MH	High voltage metal film resistor	0.25, 0.50	100K - 2M	1, 2, 5	100	1600, 3500	20 / W
	MHP-TO-220	High voltage TO-220 thick film power resistor	20, 35, 50	0.01 - 51K	1, 5	100, 250	500	20 / A
	MHP-TO-247	High voltage TO-247 thick film power resistor	100, 140	0.01 - 51K	1, 5	100, 250	700	20 / A
	T-44	High voltage precision thick film resistor	1.5, 3.5, 10	1K - 45G	1, 2, 5	25, 50, 100	4000 - 100000	27 / W

For ordering information A = Advanced Film Division (AFD) (361) 992-7900
W = Wirewound and Film Technologies Division (WAFT) (828) 264-8861

IRC Through Hole Resistive Products Selector Guide

Type	Series	Description	Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	MIL-Spec	Page/ Contact
Military (Discrete)	CMH	Thick film high voltage MIL-qualified Metal Glaze™ resistor	0.25 - 5	330K - 1G	1, 2, 5	100	MIL-R-49462	17 / W
	RB	Precision MIL-qualified wirewound resistor	0.125 - 0.5	0.1 - 1M	0.01, 1	10, 15, 30, 90	MIL-R-93	24 / W
	RBR	Precision MIL-qualified wirewound resistor	0.125 - 0.5	0.1 - 1.21M	0.01, 1	10, 15, 30, 90	MIL-R-39005	25 / W
	RL	Semi-precision MIL-qualified Metal Glaze™ resistor	0.25 - 0.5	4.3 - 470K	2, 5	200	MIL-R-22684	25 / W
	RLR	Established reliability MIL- qualified Metal Glaze™ resistor	0.125 - 0.5	10 - 3.01M	1, 2	100	MIL-R-39017	25 / W
	RN	Precision MIL-qualified Metal Glaze™ resistor	0.05 - 0.25	10 - 1M	0.1, 1, 5	25, 50, 100	MIL-R-10509	25 / W
	RNC	Established reliability MIL-qualified Metal Glaze™	0.05 - 0.25	10 - 100K	0.1, 0.5, 1	25, 50, 100	MIL-R-55182	25 / W

			Power (Watts)	Resistance Range (Ohms)	Absolute Tolerance (±%)	Ratio Tolerance (±%)	Absolute TRC (±ppm/°C)	TCR Tracking (±ppm/°C)	MIL-Spec	
Military (Network)	1900	TaNFilm® Mil-qualified DIP resistor network	1.3 - 1.6	50 - 100K	0.01, 0.25, 0.5, 1, 2	0.01, 0.02, 0.05, 0.1, 0.25, 0.5, 1, 2	10, 15, 25, 50	2, 5, 20 100, 300	MIL-PRF-83401	14 / A
	4700	TaNFilm® Mil-qualified SIP resistor network	0.6 - 1.08	100 - 100K	0t.05 - 2.0	0.02 - 1	10	2, 5, 20	MIL-PRF-83401	14 / A

			Power (Watts)	Resistance Range (Ohms)	Absolute Tolerance (±%)	Ratio Tolerance (±%)	TCR (±ppm/°C)	TCR Tracking (±ppm/°C)	
Networks	1900	TaNFilm® Mil-qualified DIP resistor network	1.3 - 1.6	50 - 100K	0.01, 0.25, 0.5, 1, 2	0.01, 0.02, 0.05, 0.1, 0.25, 0.5 0.5, 1, 2	10, 15, 25, 50, 100, 300	2, 5, 20	14 / A
	4700	TaNFilm® Mil-qualified SIP resistor network	0.6 - 1.08	100 - 100K	0.05	0.01	10	2	14 / A
	C	Thick film conformal coated SIP network	0.375 - 1.45	22 - 1M	1, 2, 5	N/A	100, 200	N/A	15 / W
	CL	Thick film conformal coated low profile SIP network	0.375 - 1.45	22 - 1M	1, 2, 5	N/A	100, 200	N/A	17 / W
	DIP-U	Tantalum Ultride™ dual inline package ultra recision resistor network	0.28 - 0.32	100 - 100K	0.02, 0.05, 0.1, 0.25, 0.5, 1	0.005, 0.01, 0.025, 0.02, 0.05, 0.1	10, 15, 25	1, 2, 5	17 / A
	M900	TaNFilm® precision molded DIP resistor network	0.7 - 1.6	10 - 400K	0.1, 0.5, 1	0.05	25, 50, 100	5	19 / A
	SIP-U	Tantalum Ultride™ single inline package ultra precision resistor network	0.12 - 0.2	100 - 100K	0.02, 0.05, 0.1, 0.25, 0.5, 1	0.005, 0.01, 0.025, 0.02, 0.05, 0.1	10, 15, 25	1, 2, 5	26 / A

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	
Power	AL	Chassis mounted power wirewound resistor	5 - 50	0.1 - 180K	0.1, 0.5, 1	20, 50, 90	14 / W
	AS	Semi-precision power wirewound resistor	0.25 - 14	0.1 -175	0.5, 1, 3, 5	20	14-15 / W
	B	Beryllia core silicone coated wirewound resistor	1 - 18	0.1 - 150K	0.1 - 1	20, 50, 400, 650	15 / W
	GS-3	High ohmic value semi-precision Metal Glaze™ resistor	3	1 - 3M	1, 2, 5	50, 100, 200	18 / W
	LAS	Economical semi-precision wirewound resistor	1, 3	0.1 - 18K	0.5, 1, 3, 5	20	19 / W

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IRC Through Hole Resistive Products Selector Guide

Type	Series	Description	Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Page/ Contact
Power	MFP	Flameproof metal film power resistor	1, 2	0.1 - 1M	1, 2, 5	100, 200, 300	20 / W
	MHP-TO-220	High voltage TO-220 thick film power resistor	20, 35, 50	0.01 - 51K	1, 5	100, 250	20 / A
	MHP-TO-247	High voltage TO-247 thick film power resistor	100, 140	0.01 - 51K	1, 5	100, 250	20 / A
	MO-S	Power metal oxide resistor	1, 2, 3, 5	10, 100K	5, 10	350	20 / W
	PPW	Semi-precision power wirewound resistor	2, 3, 5, 7, 10, 15	0.1 - 5000	1, 2, 3	20	22 / W
	PW	Power wirewound resistor	2, 3, 5, 7, 10, 15, 18 22, 25	0.1 - 30K	5, 10	300 - +5500	23 / W
	PW (radial)	Radial terminal power wirewound resistor	20, 30, 40, 50	0.08 - 2K	5, 10	300, 600	23 / W
	PWHW	Automotive dropping resistor	30, 45, 115	0.100 - 0.900	5	150	23 / W
	PWR	Standup power wirewound resistor	3, 5, 7, 10	0.1 - 18K	5, 10	300 - +5500	23 / W
	PWRG	Standup power Metal Glaze™ resistor	3, 5	1 - 1M	1,2, 5, 10	100	23 / W
	SP20	Fail-safe molded wirewound resistor	1	0.1 - 1200	5, 10	150, 180	27 / W
	SPH	Fail-safe molded wirewound resistor	2	0.1 - 2400	5, 10	150, 180	27 / W
	SPP	Economical conformal coated wirewound resistor	1, 2, 3	0.1 - 2400	5, 10	300, 600	27 / W
	T Wirewound	Commercial semi-precision power wirewound resistor	0.7 - 14	0.1 - 300K	0.1 - 10	20, 50, 400, 650	27 / W
	W	Vitreous enamelled power wirewound resistor	3, 5, 7, 10, 14	0.1 - 100K	1, 2, 5	+75, +200	28 / W

			Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	
Precision (Discrete)	CAR	Ultra-precision metal film resistor	0.25, 0.33, 0.50	10 - 10M	0.01, 0.02, 0.05, 0.1, 0.25, 0.5, 1	5, 10, 15, 25, 50	15 / A
	GP	Precision metal film resistor	0.125, 0.25, 0.5	10 - 10M	0.1, 0.25, 0.5, 1	25, 50, 100	18 / W
	PR4	Precision metal film resistor	0.25	100 - 240K	0.1, 0.25	25	23 / A
	RB	Precision MIL-qualified wirewound resistor	0.125 - 0.5	0.1 - 1M	0.01, 1	10, 15, 30, 90	24 / W
	RBR	Established reliability precision MIL-qualified wirewound resistor	0.125 - .5	0.1 - 1.21M	0.01, 1	10, 15, 30, 90	25 / W
	RC	Precision metal film resistor	0.25, 0.50, 1	1 - 10M	0.05, 0.1, 0.25, 0.5, 1	5, 10, 15, 25, 50, 100	25 / W

			Power (Watts)	Resistance Range (Ohms)	Absolute Tolerance (±%)	Ratio Tolerance (±%)	TCR (±ppm/°C)	TCR Tracking (±ppm/°C)	
Precision (Network)	DIP-U	Tantalum Ultride™ dual inline package ultra precision resistor networks	0.28 - 0.32	100 - 100K	0.02, 0.05, 0.1, 0.25, 0.5, 1	0.005, 0.01, 0.025, 0.02, 0.05, 0.1	10, 15, 25	1, 2, 5	17 / A
	M900	TaNFilm® precision molded DIP resistor network	0.7 - 1.6	10 - 400K	0.1, 0.5, 1	0.05	25, 50, 100	5	19 / A
	SIP-U	Tantalum Ultride™ single inline package ultra precision resistor networks	0.12 - 0.2	100 - 100K	0.02, 0.05, 0.1, 0.25, 0.5, 1	0.005, 0.01, 0.025,0.02, 0.05, 0.1	10, 15, 25	1, 2, 5	26 / A

IRC Through Hole Resistive Products Selector Guide

Type	Series	Description	Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Page/ Contact
Surge	AL	Chassis mounted power wirewound resistor	5 - 50	0.1 - 180K	1	20, 50, 90	14 / W
	ALFR-2/LFR-2	Telecommunications line feed resistor	2	1.8 - 1600	1, 5	50	14 / W
	AS	Semi-precision power wirewound resistor	0.25 - 14	0.1 - 175	0.5, 1, 3, 5	20	14-15 / W
	GS-3	High value semi-precision resistor	3	1 - 3M	1, 2, 5	50, 100, 200	18 / W
	LAS	Economical semi-precision power wirewound resistor	1, 3	0.1 - 18K	0.5, 1, 3, 5	20	19 / W
	PPW	Semi-precision power wirewound resistor	2, 3, 5, 7, 10, 15	0.1 - 5000	1, 2, 3	20	22 / W
	PW	Power wirewound resistor	2, 3, 5, 7, 10, 15, 18, 22, 25	0.1 - 30K	5, 10	300 - +5500	23 / W
	PW (radial)	Radial terminal power wirewound resistor	20, 30, 40, 50	0.08 - 2K	5, 10	300, 600	23 / W
	PWHW	Automotive dropping resistor	30, 45, 115	0.100 - 0.900	5	150	23 / W
	PWR	Standup power wirewound resistor	3, 5, 7, 10	0.1 - 18K	5, 10	300 - +5500	23 / W
	PWRG	Standup power Metal Glaze™ resistor	3, 5	1 - 1M	1,2, 5, 10	100	23 / W
	RG	Commercial thick film Metal Glaze™ resistor	0.125 - 1	0.4 - 5.1M	0.1, 0.5, 1, 2, 5	25, 50, 100, 200	25 / W
	W	Vitreous enamelled power wirewound resistor	3, 5, 7, 10, 14	0.1 - 100K	1, 2, 5	+75, +200	28 / W
Temperature Sensors	MF-S	Power metal film resistor	0.5, 1, 2, 3	0.1 - 1M	1, 2, 5, 10	150, 350	20 / W
	RGT	Thick film temperature compensation resistor	N/A	740, 1K, 10K	2, 5, 10	-3000	25 / W
	T Wirewound	Commercial semi-precision power wirewound resistor	0.7 - 14	0.1 - 300K	0.1 - 10	5600	27 / W
Wirewound	AL	Chassis mounted power wirewound resistor	5 - 50	0.1 - 180K	0.1, 0.5, 1, 20,	20, 50, 90	14 / W
	AS	Semi-precision power wirewound resistor	0.25 - 14	0.1 - 175	0.5, 1, 3, 5	20	14-15 / W
	B	Beryllia core silicone coated wirewound resistor	1 - 18	0.1 - 150K	0.1 - 1	20, 50, 400, 650	15 / W
	LAS	Economical semi-precision power wirewound resistor	1, 3	0.1 - 18K	0.5, 1, 3, 5	20	19 / W
	PPW	Semi-precision power wirewound resistor	2, 3, 5, 7, 10, 15	0.1 - 5000	1, 2, 3	20	22 / W
	PW	Power wirewound resistor	2, 3, 5, 7, 10, 15, 18, 22, 25	0.1 - 30K	5, 10	300 - +5500	23 / W
	PW (radial)	Radial termnal power wirewound resistor	20, 30, 40, 50	0.08 - 2K	5, 10	300, 600	23 / W
	PWR	Standup power wirewound resistor	3, 5, 7, 10	0.1 - 18K	5, 10	300 - +5500	23 / W
	RB	Precision MIL-qualified wirewound resistor	0.125 - 0.5	0.1 - 1M	0.01, 1	10, 15, 30, 90	24 / W
	RBR	Precision MIL-qualified wirewound resistor	0.125 - .5	0.1 - 1.21M	0.01, 1	10, 15, 30, 90	25 / W
	SP20	Fail-safe molded wirewound resistor	1	0.1 - 1200	5, 10	150, 180	27 / W
	SP20F	Fail-safe fusible molded wirewound resistor	1	0.1 - 1200	5, 10	150, 180	27 / W
	SPF	Fail-safe fusible molded wirewound resistor	2	0.1 - 2400	5, 10	150, 180	27 / W
	SPH	Fail-safe molded wirewound resistor	2	0.1 - 2400	5, 10	150, 180	27 / W

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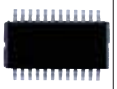
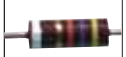
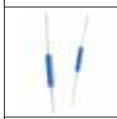
IRC Through Hole Resistive Products Selector Guide

Type	Series	Description	Power (Watts)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Page/ Contact
Wirewound	SPP	Economical conformal coated wirewound resistor	1, 2, 3	0.1 - 2400	5, 10	300, 600	27 / W
	T Wirewound	Commercial semi-precision power wirewound resistor	0.7 - 14	0.1 - 300K	0.1-10	20, 50, 400, 650	27 / W
	W	Vitreous enamelled power wirewound resistor	3, 5, 7, 10, 14	0.1 - 100K	1, 2, 5	+75, +200	28 / W

			Power (Amps)	Resistance Range (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	
Zerohm	Zerohm	Molded jumper wires	3A	<0.01	N/A	N/A	30 / W

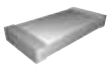
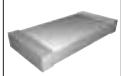
	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TRC Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
1900 - TaNFilm® Mil-qualified DIP resistor network												
	1987 1989 1998 1999	1.3 1.4 1.5 1.6	50 - 100K	0.1 - 2 / 0.01, 0.25 0.5, 1, 2	10, 15, 25, 50, 100, 300 / 2, 5, 20	N/A	20.32	6.35	2.03	0.5	-55 to +150	Available in 14 & 16-pin packages; MIL-PRF-83401 / 01 & 02 / 13 & 14
2500 - Low resistance value metal film resistor												
	2504	1.5	0.025 - 1	1, 2, 5, 10	100 - 350	N/A	14.5	5.1	–	0.8	-55 to +150	Non-inflammable, low-inductance metal film resistor
3800 - Ultra-high ohmic value thick film resistor												
	3810 3811 3812	voltage limited	100M - 1T 100M - 1T 1T - 100T	10, 20 1, 2, 5, 10 2, 5, 10	500, - 3500	500, 1000	25.0 42.9 48.0	6.0 6.0 6.0	– – –	0.6 0.6 0.6	-40 to +100	Ceremetox® resistive film, hermetically sealed package
4700 - TaNFilm® Mil-qualified SIP resistor network												
	476X 478X 470X	0.6 0.84 1.08	100 - 100K	0.05, 0.1, 0.25, 0.5, 1, 2 / 0.02, 0.05, 0.1, 0.25, 0.5, 1	10, 15, 25, 50, 100, 300 / 2, 5, 20	100	15.2 20.3 25.4	1.8 1.8 1.8	4.7 4.7 4.7	N/A N/A N/A	-55 to +125	MIL-PRF-8340
4LPW - Four terminal wirewound resistor												
	4LPW-3 4LPW-5 4LPW-7 4LPW-10 4LPW-15	3 5 7 10 15	0.005 - 1 0.005 - 1 0.01 - 1 0.01 - 1 0.01 - 1	1, 2, 3, 5, 10	40	√PR	22.4 22.4 35.3 47.8 47.8	7.87 9.65 9.65 9.65 12.7	9.65 10.4 11.9 11.9 16.0	0.9 0.9 0.9 0.9 0.9	-55 to +250	Four-terminal “Kelvin connection”
AC Line terminator - TaNCap™ AC line termination network												
	GUS-QS20-P/V (20-pin QSOP) GUS-SL20-P/V (20-pin SOIC) GUS-TS20-P/V (20-pin TSSOP)	R = 1.6 - 1.8 C = N/A	R = 10 - 100 C = 10pF-200pF	R = 10 C = 20 / N/A	R = 100 C = N/A / N/A	C = 25	8.66 12.75 6.5	3.91 7.49 4.4	1.63 2.49 1.1	N/A N/A N/A	-55 to +125	Integrated termination network replaces up to 36 discretes
AL - Chassis mounted power wirewound resistor												
	AL-5 AL-10 AL-25 AL-50	5 10 25 50	0.1 - 16K 0.1 - 25K 0.1 - 55K 0.1 - 180K	0.1, 0.5, 1	20, 50, 90	√PR or 2500	15.24 19.1 26.97 49.99	16.4 20.3 27.43 28.96	8.31 10.2 13.5 15.6	1.27 2.18 2.18 2.18	-55 to +275	Non-inductive winding available
ALFR-2 - Telecommunications line feed resistor												
	ALFR-2	2	1.8 - 1600	1, 5	50	√PR	26.5	6.73	11.43	0.58/ 0.81	-55 to +275	<30 Sec Typical Blow Times; meets GR-1089, UL-1459, & UL-497A
ARG - High power Metal Glaze™ resistor												
	ARG-07	1	1 - 5.1M	2, 5	100	250	6.4	2.3	–	0.64	-55 to +175	Excellent power/pulse handling and thermal transfer characteristics
AS - Semi-precision power wirewound resistor												
	AS-1/4 AS-1/2 AS-1	0.5 0.5 1	0.1 - 1K 0.1 - 6K 0.1 - 7.5K				6.4 7.9 9.3	2.4 2.4 3.2	– – –	0.5 0.5 0.5 / 0.64		

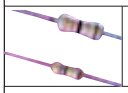
	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TCR Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
AS - Semi-precision power wirewound resistor												
	AS-1C	1	0.05 - 2K	0.5, 1, 3, 5	20	√PR or 1000	6.5	2.9	–	0.5 / 0.8	-55 to +200	
	AS-2	2	0.1 - 20K				12.2	6.3	–	0.8		
	AS-2B	3	0.1 - 24K				13.7	5.6	–	0.8		
	AS-2C	2	0.1 - 18K				11.0	4.0	–	0.8		
	AS-3	3	0.1 - 30K				17.5	7.2	–	1.0		
	AS-5	5	0.1 - 60K				22.2	8.8	–	1.0		
	AS-7	7	0.1 - 90K				31.8	8.8	–	1.0		
	AS-10	10	0.1- 175K				46.0	9.8	–	1.0		
B - Beryllia core silicone coated wirewound resistor												
	B-1	1	0.1 - 2K				6.4	2.2	–	0.5		Increased power ratings over standard resistors
	B-2	1.5	0.1 - 3.4K				7.9	2.0	–	0.5		
	B-3	2.25	0.1 - 65K		20, 50, 400,		10.3	2.4	–	0.5		
	B-5	4	0.1 - 22K		650 /		14.3	4.8	–	0.8		
	B-5A	4.5	0.1 - 34K	0.1 - 1			20.6	4.8	–	0.8	-55 to 350	
	B-5C	5	0.1 - 18K		500, 1000		12.7	5.5	–	1.0		
	B-6	6	0.1 - 40K				15.7	6.4	–	1.0		
	B-10	7	0.1 - 54K				22.2	7.9	–	1.0		
	B-12	10	0.1 - 75K				31	7.9	–	1.0		
	B-15	15	0.1 - 150K				45.2	7.9	–	1.0		
C - Thick film conformal coated SIP network												
	C4X						10.16	2.5	6.5	0.5		Three standard circuits available
	C5X	0.5					13.2	2.5	6.5	0.5		
	C6X	0.625 - 0.75					15.8	2.5	6.5	0.5		
	C7X	0.75	22 - 1M	1, 2, 5	100, 200	200	18.3	2.5	6.5	0.5	-40 to +150	
	C8X	0.875 - 1					20.9	2.5	6.5	0.5		
	C9X	1					23.4	2.5	6.5	0.5		
	C10X	1.05					25.9	2.5	6.5	0.5		
	C11X	1.15					28.5	2.5	6.5	0.5		
	C12X	1.25					31.0	2.5	6.5	0.5		
	C13X	1.35					33.6	2.5	6.5	0.5		
	C14X	1.45					35.56	2.5	6.5	0.5		
CAR - Ultra-precision metal film resistor (Lead-free only)												
	CAR											Highest stability metal film; Matched sets and networks
	CAR5	0.25	10 - 3M	0.01, 0.02, 0.05,	5, 10, 15, 25,	250	7.2	2.5	–	0.6		
	CAR6	0.33	10 - 5M	0.1, 0.25, 0.5, 1	50	350	10.0	3.7	–	0.6	20 to +85	
	CAR7	0.5	10 - 10M			500	15.5	5.5	–	0.8		
CCF - Commercial carbon film resistor												
	CCF											Other sizes available – see website for datasheet
	CCF-1/8	0.125				200	3.2	1.8	–	0.45		
	CCF-1/4	0.25	1 - 22M	2, 5	-0.005ppm/V	250	6.0	2.3	–	0.55	-55 to +155	
	CCF-1/2	0.5				350	8.5	2.8	–	0.65		
CCN - TaNFilm® Mil-qualified precision chip carrier resistor network												
	7900	1	20 - 100K	0.05 - 2 /	15 - 100 /		8.9	8.9	1.9	–		MIL-PRF-83401 DESC 87017 / 18; Four standard circuits available
	7907		50 - 200K			N/A					-55 to +150	
	7908		50 - 200K	0.01	2, 5							
	7909		50 - 200K									
CCR - Carbon composition resistor												
	CCR-1	1	220 - 22K	5, 10, 20	-700 to -1000	10K (pulse)	15.5	5.5	–	0.8	-40 to +80	High pulse voltage and energy capability; UL-94-V0 coating

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TRC Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
CGH - High ohmic value thick film resistor												
	CGH-1/4 CGH-1/2 CGH-1 CGH-2 CGH-3 CGH-5	0.25 0.5 1 2 3 5	100K - 100M 100K - 500M 50K - 750M 100K - 1500M 200K - 2000M 300K - 2000M	0.5, 1, 2, 5	50, 100	750 1500 3000 5000 10000 20000	6.98 10.16 17.53 26.97 52.37 77.77	2.22 3.51 7.54 7.54 7.54 7.54	– – – – – –	0.81 0.81 0.81 0.81 0.81 0.81	-65 to +175	Voltage Coefficient of Resistance (VCR) = 0 to -5ppm/V
CGX - High voltage precision thick film resistor												
	CGX-1/2 CGX-1	0.5 1	3000 - 500K - 1G 1M - 1.5G	1, 2, 5	50, 100	3000 5000	17.40 26.97	3.55 3.55	– –	0.81 0.81		-65 to +175
CHC (Commercial) - Ceramic BGA termination arrays												
	CHC-CB0565A CHC-CB0565B CHC-CD0865A CHC-CD0865B CHC-CD1065A CHC-CD1065B CHC-CC0910A CHC-CC0910B CHC-CD0910A CHC-CD0910B	0.6 0.6 1.2 1.2 1.6 1.6 1.2 1.2 1.2 1.2	10 - 10K 10 - 4.7K 10 - 10K 10 - 4.7K 10 - 10K 10 - 4.7K 10 - 10K 10 - 4.7K 10 - 10K 10 - 4.7K	1, 2, 5	100	N/A	3.2 3.2 5.1 5.1 6.4 6.4 9.0 9.0 9.0 9.0	1.2 1.2 2.5 2.5 2.5 2.5 3.0 3.0 4.0 4.0	0.64 0.64 0.64 0.64 0.64 0.64 1.42 1.42 1.42 1.42	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	-40 to +85	Lead-free version available 0.275mm ball pitch 0.275mm ball pitch 0.275mm ball pitch 0.275mm ball pitch 0.275mm ball pitch 0.275mm ball pitch 0.5mm ball pitch 0.5mm ball pitch 0.5mm ball pitch 0.5mm ball pitch
CHC (Precision) - TanFilm® precision ceramic ball grid array resistor network												
	CHC-CH4A CHC-CH8A	0.4 0.8	10 - 100K	0.1, 0.25, 0.5, 1, 2, 5 / 0.05, 0.1, 0.5, 15	25, 50, 100 / 10, 25	50	0.2 0.4	0.25 0.25	0.58 0.58	N/A N/A	-40 to +85	0.5mm ball pitch
CHC-SCSI - Chipscale SCSI LVD terminator network												
	CHC-CD0927K	1	R1 = 475 R2 = 121	1	100	25	11.43	5.08	1.47	N/A	0 to +70	9 LVD termination lines; SCSI Ultra2 and Ultra3 compliant; 1.27mm ball pitch
CHC-Thevenin - Chipscale Thevenin termination network												
	CHC-CC0910L	1	R1 = 50 - 75 R2 = 22 - 25	1	100	25	9.0	3.0	1.42	N/A	0 to +70	JEDEC-standard 8-9A compatible; 1.0mm ball pitch
CHP - Cylindrical Metal Glaze™ power resistor												
	CHP-1/8 CHP-1/2 CHP-1 CHP-2	0.25 0.5 1 2	0.1 - 1M 0.1 - 348K 0.1 - 2.21M 0.1 - 2.21M	0.25, 0.5, 1, 2, 5 1, 2, 5 0.25, 0.5, 1, 2, 5 1, 2, 5	25 in some ranges (contact factory)	400 600 700 1000	3.25 5.08 6.38 9.32	1.45 2.01 2.01 2.67	– – – –	N/A N/A N/A N/A	55 to 150	Metal Glaze™ resistive element offers low TCR and high surge capability
CHP-1X - Cylindrical Metal Glaze™ power resistor												
	CHP-1X	1	0.1 - 10K	1, 2, 5	50, 100	600	5.08	2.01	–	N/A	55 to 150	1W power in 1/2-watt package; superior surge capability
CHPT - Cylindrical Metal Glaze™ thermally sensitive resistor												
	CNTC-1/8	0.4	500 - 10K	2, 5, 10	-2500	400	3.25	1.45	–	N/A	55 to 150	Negative temperature coefficient device with superior linearity and curve tolerance

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TCR Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
CL - Thick film conformal coated low profile SIP network												
	CL4X	0.375 - 0.5					10.16	2.5	5.1	0.5		Low profile; Two standard circuits available
	CL5X	0.5					12.7	2.5	5.1	0.5		
	CL6X	0.625 - 0.75					15.24	2.5	5.1	0.5		
	CL7X	0.75					17.78	2.5	5.1	0.5		
	CL8X	0.875 - 1	22 - 1M	1, 2, 5	100, 200	N/A	20.32	2.5	5.1	0.5	-40 to 125	
	CL9X	1					22.86	2.5	5.1	0.5		
	CL10X	1.05					25.40	2.5	5.1	0.5		
	CL11X	1.15					27.94	2.5	5.1	0.5		
	CL12X	1.25					31.0	2.5	5.1	0.5		
	CL13X	1.35					33.68	2.5	5.1	0.5		
	CL14X	1.45					35.56	2.5	5.1	0.5		
CMH - Thick film high voltage MIL-qualified Metal Glaze™ resistor												
	CMH-1/4	.25	330K - 100M			750	6.98	2.22	–	0.81		MIL-R-49462; Voltage Coefficient of Resistance (VCR) = 0 to -5ppm/V
	CMH-1/2	.5	330K - 392M			1500	10.16	3.51	–	0.81		
	CMH-1	1	330K - 499M	1, 2, 5	100	3000	17.53	7.54	–	0.81	-65 to +175	
	CMH-2	2	330K - 499M			5000	26.97	7.54	–	0.81		
	CMH-3	3	330K - 1G			10000	52.37	7.54	–	0.81		
	CMH-5	5	330K - 1G			20000	77.77	7.54	–	0.81		
CMO - Metal oxide resistor												
	CMO-1/2	0.5	0.1 - 75K			250	9.0	3.0	–	0.7		Flameproof; Meets overload test of UL-1412
	CMO-1	1	0.1 - 120K			350	11.0	4.0	–	0.7		
	CMO-2	2	0.1 - 150K	1, 5	200	350	15.0	5.5	–	0.8	-55 to +200	
	CMO-3	3	1 - 150K			500	25.0	8.5	–	0.8		
	CMO-5	5	1 - 180K			750	41.0	8.5	–	0.8		
CR - Thick film chip resistor												
	CR0503	0.063			50		1.25	0.063	0.07	N/A		Any resistance value available within specified range
	CR0805	0.1	1 - 100M	0.25, 0.5, 1, 2, 5	100	350	2.0	1.25	0.07	N/A	-55 to +125	
	CR1005	0.125			150		2.5	1.25	0.07	N/A		
	CR1206	0.25			200		3.2	1.6	0.07	N/A		
CSL - Four terminal open air low ohm resistor												
	CSL	5	0.00025 - 0.0025	1, 2, 5	30		21.9	1.57	10.8	1.57	-55 to +125	55 amp continuous operating current
DIP-U - Tantalum Ultride™ dual inline package ultra precision resistor networks												
	DIP-U1989	0.28		0.02, 0.05, 0.1, 0.25, 0.5, 1 / 0.005, 0.01, 0.025, 0.02, 0.05, 0.1	10, 15, 25 / 1, 2, 5	50	17.78	6.35	2.03	0.5		No internal solder connections; Custom schematics and values available
	DIP-U1999	0.32	100 - 100K				20.32	6.35	2.03	0.5	-55 to +125	
F43/F44 - High voltage thick film resistor												
	F43-X	0.7	2M - 100G	2, 5, 10	250, -2000	4000 - 8000	25.4	8.4	–	0.8		Optional screw terminations for assembling a series chain; Matched sets available
	F44-X	1.3	2M - 150G			14000 - 28000	50.8	8.4	–	0.8	-55 to +100	
F-500 - Precision controlled fusible resistor												
	F-5XX	0.3 - 1	0.2 - 200	2, 5, 10	50, 150		10.2	3.6	–	0.5	-55 to +150	<0.5 Sec Typical Blow Times; UL approved

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TRC Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
FA8025 - Fusible metal film resistor												
	FA8225 FA8325 FA8425	0.25 0.5 1.5	0.1 - 10K 0.1 - 27K 1 - 22K		500	250 350	7.0 9.0 14.5	2.3 3.4 5.1	– – –	0.6 0.8 0.8		<30 Sec Typical Blow Times; Flameproof conformal coating
FCR - Fusible chip resistor												
	FCR-1/2	0.5	10 - 51	2, 5	350	100	5.0	2.6	0.55	N/A	-55 to +125	<50 Sec Typical Blow Times
FP - TaNFilm® Mil-qualified precision flat pack resistor network												
	FP-8987 FP-8989 FP-8998 FP-8999	1.3 0.7 1.5 0.8	49.9 - 121K	0.1 - 2 / 0.01	25 - 300 / 2, 5, 20	N/A	9.52 9.52 9.9 9.9	7.75 7.75 7.75 7.75	1.9 1.9 1.9 1.9	0.127 0.127 0.127 0.127	-55 to +150	MIL-PRF-83401; 14- and 16-pin packages; four standard schematics available
GC - High voltage precision thick film resistor												
	GC65	0.5	47K - 1G	1, 2, 5	100	3500	10.0	3.7	–	0.6	-55 to +155	High stability thick film resistive element
GF - Thick film Metal Glaze™ resistor												
	GF-55 GF-07 GF-60 GF-20 GF-3	0.5 0.5 0.75 0.75 2, 3	0.4 - 2M 0.4 - 2M 0.4 - 2M 0.4 - 2M 1 - 2M	1 2, 5 1 2, 5 1, 2, 5	50, 100 100 50, 100 100 200	250 250 350 350 750	6.4 6.4 9.9 9.9 13.0	2.3 2.3 3.8 3.8 5.7	– – – – –	0.64 0.64 0.64 0.64 0.81	-65 to +150	Flame-resistant construction
GP - Precision metal film resistor												
	GP-50 GP-55 GP-60	0.125 0.25 0.5	10 - 2.37M 10 - 10M 10 - 10M	0.1, 0.25, 0.5, 1	25, 50, 100	200 250 300	3.2 6.0 8.5	1.85 2.4 2.8	– – –	0.45 0.6 0.7	-55 to +165	Meets requirements of MIL-R-10509
GS-3 - High ohmic value semi-precision Metal Glaze™ resistor												
	GS-3	3	1 - 3M	1, 2, 5	50, 100, 200	1000	13.1	5.7	38.1	90.81	-65 to +150	Effective as carbon comp replacement
GUB - TaNFilm® Mil-qualified precision small outline IC resistor network												
	GUB-GMX (14-pin) GUB-GLX (16-pin) GUB-GL0X (20-pin)	1 1.2 1.5	10 - 150K 10 - 1000K 10 - 1000K	0.1, 0.25, 0.5, 1 / 0.05, 0.1, 0.25, 0.5, 1	25, 50, 100 / 5	N/A	9.9 11.18 12.8	5.59 5.59 7.54	2.28 2.28 2.67	0.43 0.43 0.43	-55 to +125	DESC 87017 / 18
HR-1 - High ohmic value thick film chip resistor												
	HR-0805 HR-1005 HR-1206	0.1 0.125 0.25	100M - 50G	5, 10, 25, 50	0 to -2000 0 to -1500 0 to -1000	100 150 200	2.0 2.5 3.2	1.25 1.25 1.6	0.07 0.07 0.07	N/A N/A N/A	-55 to +125	Low voltage coefficient of resistance
HSF - Cylindrical Metal Glaze™ surge resistor												
	HSF-1	1	5.9, 6.8, 11, 27, 62, 68, 270	10	50, 100	350	6.38	2.01	–	N/A	-55 to +150	10x the surge rating of conventional cylindrical resistors; contact factory for other resistance values and special requirements

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TCR Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
HVC - High voltage chip resistor												
	HVC-1206 HVC-2010 HVC-2512	0.3 0.5 1	100K - 100M	1, 2, 5, 10 1, 2, 5, 10 0.5, 1, 2, 5, 10	100	1000 2000 3000	3.2 5.1 6.5	1.6 2.5 3.2	0.6 0.7 0.7	N/A N/A N/A	-55 to +155	Continuous voltage ratings up to 3KV
IBT - Carbon composition resistor												
	IBT-1/4 IBT-1/2	0.25 0.5	1 - 5.6M 1 - 20M	5, 10	250 - 2500	500 700	6.3 9.5	2.4 3.6	– –	0.6 0.7	-55 to +150	Meets EIA RS-172 performance standards
Ladder - TaNSil® R2R ladder network												
	GUS-QS009 (20-pin) GUS-QS014 (16-pin)	N/A	10K - 50K	2 / 1 LSB	25 - 100 / 5	N/A	8.66 4.9	3.9 3.9	1.62 1.62	0.25 0.25	-55 to +125	Available in other packages
LAS - Economical semi-precision power wirewound resistor												
	LAS-1 LAS-3	1 3	0.1 - 7.5K 0.1 - 18K	0.5, 1, 3, 5	20	500	8.84 12.47	2.8 3.8	– –	0.53 0.81	-55 to +200	Special LAS-3 version available to meet GR-1089 requirements
LOB - Low resistance metal element resistor												
	LOB-1 LOB-3 LOB-5	1 3 5	0.005 - 0.1	1, 3, 5	varies	$\sqrt{1 \times R}$ $\sqrt{3 \times R}$ $\sqrt{5 \times R}$	9.9 14.22 23.37	3.6 5.33 8.38	– – –	0.81 0.81 1.02	-65 to +150	Inherently non-inductive (≤0.02µH @ 0.5MHz)
LPW - Low resistance power wirewound resistor												
	LPW-3 LPW-5 LPW-7 LPW-10 LPW-15	3 5 7 10 15	0.005 - 0.15 0.005 - 0.15 0.01 - 0.15 0.01 - 0.15 0.01 - 0.15	1, 2, 3, 5, 10	30 to +500	$\sqrt{PR}$	22.4 22.4 35.3 47.8 47.8	7.87 9.65 9.65 9.65 12.7	7.87 8.89 8.89 8.89 12.7	1.02 1.02 1.02 1.02 1.02	-55 to +250	Flameproof high temerature ceramic case; standoffs optional
LRC - Thick film low value chip resistor												
	LRC-LRF-1206 LRC-LRF-2010 LRC-LRF-2512	0.5 1 2	0.002 - 0.025	1, 2, 5, 10	100	200	3.2 5.23 6.5	1.63 2.64 3.25	0.61 0.74 0.74	N/A N/A N/A	-55 to +150	Ceramic current sense resistor
LRF - Thick film low value chip resistor												
	LRC-LRF-1206 LRC-LRF-2010 LRC-LRF-2512	0.5 1 2	0.002 - 0.025	1, 2, 5, 10	100	200	3.2 5.23 6.5	1.63 2.64 3.25	0.61 0.74 0.74	N/A N/A N/A	-55 to +150	Flip chip ceramic current resistor sense
LRF3W - Power thick film resistor												
	LRC-LRF3W	3	0.002 - 0.2	1, 2, 5, 10	100	50	6.5	3.25	0.81	N/A	-65 to +150	High power current sense resistor with Kelvin connection
LRZ - Ultra low resistance jumper resistor												
	LRC-LRZ-1206 LRC-LRZ-2010 LRC-LRZ-2512	20A 30A 35A	<0.003	N/A	N/A	200	3.2 5.23 6.5	1.63 2.64 3.25	0.61 0.74 0.74	0.48 0.48 0.48	-65 to +125	Zerohm jumper chip
M900 - TaNFilm® precision molded DIP resistor network												
	M954 (8-pin) M959 (8-pin) M987 (14-pin) M989 (14-pin) M998 (16-pin) M999 (16-pin)	0.7 0.8 1.3 1.4 1.5 1.6	10 - 200K 10 - 400K 10 - 200K 10 - 400K 10 - 200K 10 - 400K	0.1, 0.5, 1 / 0.05	25, 50, 100 / 5	N/A	11.81 11.81 19.43 19.43 21.97 21.97	7.87 7.87 7.87 7.87 7.87 7.87	4.57 4.57 4.57 4.57 4.57 4.57	0.48 0.48 0.48 0.48 0.48 0.48	-55 to +150	Custom designs and schematics available

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TRC Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
MCHP - Cylindrical Metal Glaze™ Mil-qualified resistor												
	MCHP-1/8 MCHP-1/2 MCHP-1 MCHP-2	0.125 0.5 1 2	0.1 - 1M 0.1 - 1.6M 0.1 - 2.2M 0.2 - 2.2M	1, 2, 5	100	400 600 700 1000	3.25 5.08 6.38 9.32	1.45 2.01 2.01 2.67	– – – –	N/A N/A N/A N/A	-55 to +150	DSCC 85083 DSCC 87037 DSCC 95011 DSCC 94048 DSCC 94048 DSCC 95006 DSCC 94047
MFP - Fireproof metal film power resistor												
	MFP-05 MFP-1 MFP-2	0.5 1 2	7 - 15 0.1 - 1M 1 - 1M	1, 2, 5	100 100, 200, 300 100	350	3.5 6.2 10.0	1.8 2.3 4.0	– – –	0.5 0.6 0.8	-55 to +155	
MF-S - Power metal film resistor												
	MF-1/2-S MF-1-S MF-2-S MF-3-S	0.5 1 2 3	0.1 - 1M 0.1 - 1M 0.1 - 470K 0.1 - 470K	1, 2, 5, 10	150 150 150, 350 150, 350	350	6.2 9.0 12.5 14.5	2.3 3.4 4.2 5.1	– – – –	0.6 0.8 0.8 0.8	-55 to +235	Flameproof safety resistor
MH - High voltage metal film resistor												
	MH-25 MH-37	0.25 0.5	100K - 2.2M 100K - 1M	1, 2, 5	100	1600 3500	6.2 9.0	2.3 3.7	– –	0.6 0.8	-55 to +155	
MHP-TO-220 - High voltage TO-220 thick film power resistor (Lead-free only)												
	MHP-20 MHP-5 MHP-50	20 35 50	0.01 - 51K	1, 5	100, 250	500	10.16 10.16 10.16	14.61 14.61 14.61	4.45 4.45 4.45	0.47 0.47 0.47	-55 to +150	Non-inductive (<50nH)
MHP-TO-247 - High voltage TO-247 thick film power resistor (Lead-free only)												
	MHP100 MHP140	100 140	10 - 51K	1, 5	100, 250	700	20.0 20.0	16.0 16.0	4.8 4.8	0.8 0.8	-55 to +150	Non-inductive (<50nH)
MM - Cylindrical Metal Glaze™ power resistor												
	MMA0204 MMB0207 MMC0310	0.25 1 2	0.1 - 1M 0.1 - 2.21M 0.2 - 2.21M	1	50, 100	400 700 1000	3.25 6.38 9.32	1.45 2.01 2.67	– – –	N/A N/A N/A	-55 to +150	Superior surge characteristics
MOM - Metal oxide mini resistor												
	MOM-1/2 MOM-1 MOM-2 MOM-3 MOM-5	0.5 1 2 3 5	0.1 - 47K 0.1 - 75K 0.1 - 100K 0.1 - 120K 1 - 150K	1, 5	200	250 350 350 350 500	6.0 9.0 11.0 15.0 25.0	2.3 3.0 4.0 5.5 8.5	– – – – –	0.6 0.7 0.8 0.8 0.8	-55 to +200	Flameproof; Meets overload test of UL-1412
MO-S - Power metal oxide resistor												
	MO-1/2S MO-1S MO-2S MO-3S MO-5S	0.5 1 2 3 5	10 - 50K 10 - 100K 10 - 100K 10 - 100K 10 - 100K	5, 10	350	250 350 350 350 500	6.2 9.0 12.5 14.5 25.0	2.3 3.4 4.2 5.1 8.5	– – – – –	0.6 0.8 0.8 0.8 0.8	-55 to +155	Flameproof
MRC - Cylindrical Metal Glaze™ high power density resistor												
	MRC-1/2 MRC-1	0.5 1	0.1 - 10K 0.05 - 1	0.2, 0.5, 1, 2, 5 1, 2, 5	50, 100 100, 200	400 700	3.25 6.38	1.60 2.67	– –	N/A N/A	-55 to +150	Superior surge handling capability

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TCR Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
MWR - TaNFilm® microwave chip resistor												
	MWR-MWC-01	0.25	50, 75	1, 2, 5, 10	25, 50, 100	50V	0.76	0.61	0.381	N/A	-55 to +100	Performance characterized to 40GHz
OAR - Open air sense resistor												
	OAR-1 OAR-3 OAR-5	1 3 5	0.003 - 0.1 0.0025 - 0.05 0.003 - 0.1	1, 5	Varies with resistance value (20 – 450)	$\sqrt{PR}$	11.43 15.24 20.32	1.65 1.65 1.65	5.08 15.3 8.9	1.02 1.02 1.02	-40 to +125	Flameproof; Low inductance (<10nH)
OARS - Open air sense resistor - surface mount												
	OARS-1	1	0.002 - 0.05	1, 5	40, 240	N/A	12.0	3.5	3.5	N/A	-55 to +125	Flameproof open air resistor; Flameproof; Low inductance (<10nH)
OARS-XP - Open air sense resistor - extended power												
	OARS-XP	3, 5	0.001 - 0.25	1, 5	40, 240	N/A	12.0	7.0	3.5	N/A	-55 to +125	Extended power range; Flameproof; Low inductance (<10nH)
OAR-TP - Open air tight pitch resistor												
	OAR-1TP OAR-3TP	1 3	0.003 - 0.1 0.0025 - 0.1	1, 5	Varies with resistance (20 – 450)	N/A	7.0 5.0 - 7.0	1.65 1.65	7.8 32	1.02 1.02	-40 to +125	Tight pitch board saves space
OARS-Z - Open air zerohm jumper resistor												
	OARS-1Z	65A	<0.01	N/A	N/A	N/A	12.0	3.5	3.5	N/A	-55 to +125	Ideal jumper for high-voltage applications
PCF - Precision Nichrome chip resistor												
	PCF-W0201 PCF-W0402 PCF-W0603 PCF-W0805 PCF-W1206 PCF-W1210	0.05 0.0625 0.0625 0.1 0.125 0.25	33 - 22K 10 - 100K 100 - 332K 10 - 1M 10 - 1M 10 - 2M	0.5 0.1, 0.5 0.1, 0.5 0.1, 0.5 0.1, 0.5 0.1, 0.5	25 25, 50, 100 10, 25, 50 5, 10, 25, 50 5, 10, 25 5, 10, 25	15 25 75 100 125 250	0.61 0.99 1.6 2.0 3.2 3.2	0.305 0.508 0.787 1.245 1.6 2.59	0.23 0.35 0.46 0.46 0.46 0.46	N/A N/A N/A N/A N/A N/A	-55 to +125	Wide ohmic range available
PCF-RC - Thick film resistor capacitor chip												
	PCF-RC1206	R = 0.125 C = N/A	R = 10 - 1K C = 10pF - 200pF	R = 10 - 20 C = 20 / 0.05 - 2	R = 200 C = 20 - 55 / R = 10 - 20 C = 20	R = 5 C = 50	3.2	1.6	0.7	N/A	-55 to +125	Resistor and capacitor on a single 1206 chip
PFC-A - TaNFilm® thin film attenuators												
	PFC-A1206	0.125	50, 75 (impedance)	±0.3dB, ±0.5dB, ±1.0dB, ±2.0dB	100	N/A	3.2	1.47	0.61	N/A	-55 to +150	Attenuation 1 - 20dB
PFC-COM TaNFilm® precision chip resistor												
	PFC-W0603 PFC-W0805 PFC-W1206 PFC-W1505 PFC-W2010 PFC-W2512	0.1 0.25 0.33 0.35 0.8 1	5 - 100K 5 - 267K 5 - 1M 5 - 1M 5 - 1M 5 - 1M	0.02, 0.05, 0.1, 0.5, 1, 2, 5	10, 15, 25, 50, 100	75 100 200 100 175 200	1.6 2.0 3.2 3.9 5.16 6.5	0.787 1.245 1.6 1.27 2.62 3.15	0.508 0.508 0.61 0.61 0.61 0.61	N/A N/A N/A N/A N/A N/A	-55 to +150	Screening for COTS precision chip resistor applications available

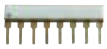
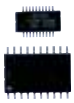
	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TRC Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
PFC-D - TaNFilm® precision chip voltage divider												
	PFC-D1206	0.25	10 - 150K	0.01, 0.5, 1 / 0.05, 0.1, 0.5, 1	25, 50, 100 / 5, 10, 20, 50	N/A	3.2	1.47	0.61	N/A	-65 to +150	Superior alternative to matched resistor sets
PFC-D- HT - High temperature TaNFilm® voltage divider												
	PFC-D1206-HT	0.125	100 - 25K	1 / 0.1, 0.5, 1	25, 50, 100 / 5	100	3.2	1.47	0.61	N/A	-65 to +200	Superior alternative to matched high temperature resistor sets
PFC-HF - High frequency chip resistor terminator												
	PFC-W0603-HF PFC-W0805-HF	0.1 0.25	50	1, 2, 5, 10	25, 50, 100	100	1.6 2.0	0.787 1.25	0.508 0.508	N/A N/A	-55 to +150	Performance characterized to 6GHz
PFC-HT - High temperature TaNFilm® chip resistor												
	PFC-W0603-HT PFC-W0805-HT PFC-W1206-HT	0.0625 0.1 0.125	10 - 10K 10 - 20K 5 - 85K	1, 2, 5	25, 50, 100	33.3 50 100	1.6 2.0 3.2	0.787 1.25 1.6	0.508 0.508 0.61	N/A N/A N/A	-55 to +200	Characterized to 200°C
PFC-UD - Tantalum Ultride™ ultra precision divider networks												
	PFC-RM0603 PFC-RM0705 PFC-RM1206 PFC-RM1505	0.07 0.05, 0.1 0.125, 0.250 0.1, 0.125	10 - 59K 10 - 249K 10 - 500K 10 - 125K	0.1, 1, 2, 5, 10	25, 50, 100, 300	50 50 100 40	1.6 2.0 3.2 3.9	0.787 1.245 1.6 1.27	0.508 0.508 0.61 0.635	N/A N/A N/A N/A	-65 to +150	MIL-PRF-55342 DSCC 94015/16
PFC-MIL - TaNFilm® Mil-qualified precision chip resistor												
	PFC-UD1206	0.05	100 - 50K	0.02, 0.05, 0.1, 0.25, 0.5, 1 / 0.005, 0.01,0.025, 0.02, 0.05, 0.1	10, 15, 25 / 1, 2, 5	50	3.2	1.47	0.61	N/A	-55 to +125	Superior stability and precision
PLO - Extremely low resistance power wirewound resistor												
	PLO-3 PLO-5 PLO-7 PLO-10 PLO-15	3 5 7 10 15	0.005 - 0.18 0.005 - 0.18 0.01 - 0.18 0.01 - 0.18 0.01 - 0.18	1, 2, 3, 5, 10	30 to +500	√PR	22.4 22.4 35.3 47.8 47.8	7.87 9.65 9.65 9.65 12.7	7.87 8.89 8.89 8.89 12.7	1.02 1.02 1.02 1.02 1.02	-55 to +250	Flameproof high temperature ceramic case; standoffs optional
PLR - Extended power low resistance chip												
	LRC-PLR1206 LRC-PLR2010 LRC-PLR2512	0.5 1 2	0.1 - 1	1, 2, 5, 10	100	200	3.2 5.23 6.5	1.63 2.64 3.25	0.74 0.74 0.74	N/A N/A N/A	-55 to +155	Extended power version of LRC Series
PPS-1 - Cylindrical Metal Glaze™ high power ceramic package resistor												
	PPS-1	1	0.1 - 348K	1, 2, 5	50, 100	700	5.08	3.3	2.67	N/A	-65 to +150	Ceramic package provides superior temperature rise profile
PPW - Semi-precision power wirewound resistor												
	PPW-2 PPW-3 PPW-5 PPW-7 PPW-10 PPW-15	2 3 5 7 10 15	0.1 - 1600 0.1 - 1600 0.1 - 1600 0.1 - 2500 0.1 - 5000 0.1 - 5000	1, 2, 3	20	√PR	17.05 22.4 22.4 35.3 47.8 47.8	6.99 7.87 9.65 9.65 9.65 12.7	6.99 7.87 8.89 8.89 8.89 12.7	0.8 0.8 0.8 0.8 0.8 0.8	-55 to +250	Superior pulse and surge characteristics; Flameproof high temperature ceramic case; standoffs optional

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TCR Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
PR4 - Precision metal film resistor												
	PR4	0.25	100 - 240K	0.1, 0.25	25	250	6.2	2.3		0.6	-55 to +155	Uses solder coated copper wire as reistance element.
PW - Power wirewound resistor												
	PW-2 PW-3 PW-5 PW-7 PW-10 PW-15 PW-18 PW-22 PW-25	2 3 5 7 10 15 18 22 25	0.15 - 2.4K 0.1 - 7.5K 0.1 - 8.5K 0.1 - 18K 0.18 - 30K 0.18 - 30K 0.18 - 22K 0.27 - 18K 0.27 - 18K	5, 10	300 to +5500	√PR	17.05 22.4 22.4 35.3 47.8 47.8 47.8 63.5 63.5	6.99 7.87 9.65 9.65 9.65 12.7 12.7 12.7 12.7	6.99 7.87 8.89 8.89 8.89 12.7 12.7 12.7 12.7	0.8 0.91 0.91 0.91 0.91 0.91 0.91 1.0 1.0	-55 to +250	Flameproof high temperature ceramic case; standoffs optional
PW (radial) - Power wirewound resistor												
	PW-20E PW-30 PW-40 PW-50E	20 30 40 50	0.1 - 2.0K 0.5 - 1.2K 0.65 - 1.5K 0.08 - 1.8K	5, 10	300, 600	√PR	63.5 64.77 76.2 92.075	12.7 19.05 19.05 19.05	12.7 19.05 19.05 19.05	6.35 7.16 7.16 7.16	-55 to +250	Steatite ceramic case with radial leads, bracket available
PWC - Pulse withstanding thick film chip resistor												
	PWC PWC-0805 PWC-1206 PWC-2010 PWC-2512	 0.125 0.33 0.75 1.5	1 - 10M	0.5, 1, 5	100, 200	 150 200 400 500	 2.0 3.2 5.1 6.5	 1.25 1.6 2.5 3.2	 0.6 0.4 0.8 0.8	 N/A N/A N/A N/A	-55 to +155	Superior pulse-handling characteristics
PWHW - Automotive dropping resistor												
	PWHW-30 PWHW-45 PWHW-115	30 45 115	0.100 - 0.900	5	150	√PR	72.29 64.11 80.0	34.82 29.85 36.83	15.75 11.86 15.75		-55 to +125	Wiring harness, connectors and brackets available; Resettable or one-time fuse version available
PWR - Standup power wirewound resistor												
	PWR-3 PWR-5 PWR-7 PWR-10	3 5 7 10	0.1 - 7.5K 0.1 - 8.5K 0.1 - 18K 0.18 - 18K	5, 10	300 to +5500	√PR	12.0 12.7 12.7 16.0	8.1 8.8 8.8 13.2	25.4 25.4 38.1 35.3	0.91 0.91 0.91 0.91	-55 to +250	Flameproof high temperature ceramic case; inorganic encapsulant
PWRG - Standup power Metal Glaze™ resistor												
	PWRG PWRG-3 PWRG-5	 3 5	1 - 1M	1, 2, 5, 10	100	√PR	12.0 12.7	8.1 8.9	25.4 25.4	0.81 0.81	-55 to +250	Flameproof high temperature ceramic case; inorganic encapsulant
PWRL - Low resistance stand-up power wirewound resistor												
	PWRL-3 PWRL-5 PWRL-7 PWRL-10	3, 5, 7, 10	0.01 - 0.18	1, 2, 3, 5, 10	50 to +500	√PR	12.0 12.7 12.7 16.0	8.1 8.8 8.8 13.2	25.4 25.4 38.1 35.3	1.02 1.02 1.02 1.02	-55 to +250	Flameproof high temperature ceramic case; inorganic encapsulant

	Part Number	Power (Watts)	Supply Voltage (Volts)	Diode Forward Voltage (Volts)	Channel Leakage Current (µAmps)	Channel Input Capacitance (pF)	ESD Protection (Volts)	Max. Volts (V)	L	W	H	S	Operating Temp. (°C)	Notes
DNR-QDN001 - Schottky diode termination network														
	DNR-QDN001	1	-0.3 min. 7 max.	0.5 @ 10mA 0.8 @ 50mA	0.1	5 @ V_{IN} = 2.5V, V_{DD} = 5V	±4KV max.	7	8.66	3.91	1.62	N/A	0 to +70	36 Schottky diodes integrated into a single package
DNR-QDN002 - Schottky diode 17-channel ESD protection network														
	DNR-QDN002	1	12 max.	0.65 1	1	12pF max.	±15KV (HBM, method 3015) ±8kV (Contact discharge)	12	8.66	3.91	1.62	N/A	-20 to +85	Reduces over shoot/undershoot for all data line types
DNR-QDN003 - Schottky diode 18-channel termination network														
	DNR-QDN003	1	-0.3 min. 7 max.	0.55 @ 1m 1 @ 12mA	0.1	12pF max.	±15KV (HBM, method 3015) ±8kV (Contact discharge)	7	8.66	3.91	1.62	N/A	0 to +70	Effective termination for both controlled/ uncontrolled line

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TRC Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
QRC1284 - TaNSil® IEEE-1284 filter network												
	GUS-QRC1284	R = 1.8 C = N/A	R = 10 - 100 C = 10pF-200pF	R = 10 C = 20	R = 10 C = N/A	N/A	8.66	3.91	1.63	N/A	-55 to +125	24-pin QSOP package; Replaces up to 27 discrete components
QRC1284x2 - TaNSil® IEEE-1284 filter network												
	GUS-QRC1284x2	R = 2.6 C = N/A	R = 33-4.7K C = 180pF-220pF	R = 10 C = 20	R = 100 / C = N/A	N/A	9.88	3.91	1.63	N/A	-55 to +125	28-pin QSOP package; Replaces up to 43 discrete components
QS001 - TaNSil® high frequency resistor network												
	GUS-QS001	1	30 - 100	5, 10, 20	25, 50, 100 / 5	100	8.66	3.91	1.63	N/A	-55 to +125	24-pin QSOP package; Replaces up to 22 discrete components
QS013 - TaNSil® integrated audio passive network												
	GUS-QS013	1	100 - 6.8K	5 / 1	100 / 10	N/A	9.88	3.91	1.63	N/A	-55 to +125	28-pin QSOP package
QSOP - TaNSil® silicon .025 pitch resistor network												
	GUS-QS8 (16-pin) GUS-QS0 (20-pin) GUS-QSC (24-pin)	0.75 1 1	10 - 250	0.1, 0.25, 0.5, 1, 2, 5 / 0.05, 0.1, 0.25, 0.5, 1, 2	25, 50, 100, 200 / 5, 10, 25, 50, 100, 200	N/A	4.9 8.66 8.66	3.91 3.91 3.91	1.63 1.63 1.63	N/A N/A N/A	-55 to +125	16- 20- and 24-pin QSOP package with 0.025" pitch
RB - Precision MIL-qualified wirewound resistor												
	RB-56 RB-55 RB-54 RB-53 RB-52	0.125 0.15 0.25 0.33 0.5	0.1 - 127K 0.1 - 176K 0.1 - 226K 0.1 - 604K 0.1 - 1M	0.01, 1	10, 15, 30, 90	200 300 300 500 750	8.7 12.7 19.0 19.0 25.4	6.3 6.3 6.3 9.5 9.5	– – – – –	0.8 0.8 0.8 0.8 0.8	-65 to +145	Qualified to MIL-R-93; commercial equivalents available (VA/7000 Series)

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TCR Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
RBR - Precision MIL-qualified wirewound resistor												
	RBR-56 RBR-55 RBR-54 RBR-53	0.125 0.15 0.25 0.33	0.1 - 220K 0.1 - 332K 0.1 - 526K 0.1 - 1.1K	0.01, 1	10, 15, 30, 90	200 300 300 500	8.7 12.7 19.0 19.0	6.3 6.3 6.3 9.5	– – – –	0.8 0.8 0.8 0.8	-65 to +145	Qualified to MIL-R-39005; commercial equivalents available (HR Series)
RC - Precision metal film resistor (Lead-free only)												
	RC-RC55 RC-RC65 RC-RC70	0.25 0.5 1	1 - 4M 1 - 4M 1 - 10M	0.05, 0.1, 0.25, 0.5, 1	5, 10, 15, 25, 50, 100	350 350 500	7.2 10.0 15.5	2.5 3.7 5.5	– – –	0.6 0.6 0.8	-55 to +155	Conformally coated; matched sets available
RG - Commercial thick film Metal Glaze™ resistor												
	RG-1/8 RG-1/4 RG-1/2	0.25 0.5 1	0.4 - 1.5M 0.4 - 5.1M 0.4 - 5.1M	2, 5 5 5	200	200 250 350	3.8 6.4 9.9	1.7 2.3 3.6	– – –	0.41 0.64 0.81	-65 to +150	Flame retardant versions available
RGT - Thick film temperature compensation resistor												
	RGT-1 RGT-2	N/A	740, 1K, 10K	2, 5, 10	-3000	N/A	6.35 3.81	2.29 1.7	– –	0.64 0.41	-55 to +175	Effective temperature compensation for positive TC devices, semiconductors and copper
RL - Semi-precision MIL-qualified Metal Glaze™ resistor												
	RL-07 RL-20	0.25 0.5	51 - 150K 4.3 - 470K	2, 5	200	250 350	6.4 9.9	2.3 3.6	– –	0.64 0.81	-55 to +150	MIL-R-22684
RLR - Established reliability MIL-qualified Metal Glaze™ resistor												
	RLR-05/S RLR-07/S RLR-20/S	0.125 0.25 0.5	10 - 301K 10 - 301M 4.3 - 3.01M	1, 2	100	200 250 350	3.8 6.4 9.9	1.7 2.3 3.6	– – –	0.41 0.64 0.81	-55 to +150	MIL-R-39017, approved to "S" level
RN - Precision MIL-qualified Metal Glaze™ resistor												
	RN-50 RN-55 RN-60	0.05 0.1, 0.125 0.125, 0.25	10 - 100K 10 - 301K 10 - 1M	1 0.1, 1, 5 0.1, 1, 5	50 25, 50, 100 25, 50, 100	200 200 250 300	3.8 6.4 9.9	1.7 2.3 3.6	– – –	0.41 0.64 0.64	-65 to +150	MIL-R-10509
RNC - Established reliability MIL-qualified Metal Glaze™ resistor												
	RNC-50 RNC-55 RNC-60	0.05 0.1 0.125	10 - 301K 10 - 2M 10 - 100K	1 0.1, 0.5, 1 0.1, 0.5, 1	25, 50, 100	200 200 250	3.8 6.4 9.9	1.7 2.3 3.6	– – –	0.41 0.64 0.64	-65 to +150	MIL-R55182
RTD - Platinum film temperature sensor												
	RTD-P0603 RTD-P0805 RTD-P1206	N/A	100 100 100, 1K	0.5, 1, 2, 5	+3850	N/A	1.6 2.0 3.2	0.787 1.25 1.6	– – –	0.508 0.508 0.61	-55 to +150	Fast-response platinum-based temperature sensor
SC-3 - High power dissipation thick film resistor												
	SCW-SC-3	3	100K	1, 2, 5	100	100	6.35	3.175	0.76	N/A	-55 to +150	Three-watt rating for one-watt chip size; reverse termination

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TRC Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
SIP-U - Tantalum Ultride™ single inline package ultra precision resistor networks												
	SIP-U4769 (6-pin) SIP-U4789 (8-pin) SIP-U4709 (10-pin)	0.12 0.16	100 - 100K	0.02, 0.05, 0.1, 0.25, 0.5, 1 / 0.005, 0.01, 0.025, 0.02, 0.05, 0.1	10, 15, 25 / 1, 2, 5	50	15.19 20.27 25.35	1.78 1.78 1.78	3.302 3.302 3.302	0.508 0.508 0.508	-55 to +125	No internal solder connections; Custom schematics and values available
SMC - Cylindrical Metal Glaze® compliant terminal resistor												
	SMC-1 SMC-2	1 2	10 - 1M 10 - 2M	0.5, 1, 2, 5 / 1, 2, 5	50, 100	650 1000	6.35 9.32	3.1 3.1	– –	N/A N/A	-55 to +150	Capped terminals provide thermal and mechanical compliance with PC board
SMHP - High voltage D2PAK/TO-263AB thick film power resistor (Lead-free only)												
	TFP-SMHP	20	0.01 - 51K	1, 5	50, 100, 250	500	10.6	10.3	4.5	0.75	-55 to +155	Non-inductive thick film power resistor
SOIC - TaNSil® silicon .05" pitch network												
	GUS-SS4 (8-pin narrow) GUS-SS7 (14-pin narrow) GUS-SS8 (16-pin narrow) GUS-SL8 (16-pin wide) GUS-SL0 (20-pin wide)	0.4 0.7 0.8 1.2 1.5	10 - 250K	0.1, 0.25, 0.5, 1, 2, 5 / 0.05, 0.1, 0.25, 0.5, 1, 2	25, 50, 100, 250 / 5, 10, 20, 25, 50. 100, 200	100	4.9 8.66 9.9 10.21 12.75	3.89 3.89 3.89 7.49 7.49	1.55 1.55 1.55 2.49 2.49	0.41 0.41 0.41 0.41 0.41	-55 to +125	Standard JEDEC 0.050" lead spacing; COTS screen available
SON - TaNFilm® Mil-qualified precision small outline leadless resistor networks												
	SON-NS4A-N959 (8-pad, 150 Series) SON-NS4B-N954 (8-pad, 210 Series) SON-NS7A-N989 (14-pad, 150 Series) SON-NS7B-N987 (14-pad, 210 Series) SON-NS8A-N999 (16-pad, 150 Series) SON-NS8B-N997 (16-pad, 210 Series)	0.4 0.4 0.7 0.7 0.8 0.8	10 - 100K 10 - 50K 10 - 100K 10 - 50K 10 - 100K 10 - 50K	0.01, 0.02, 0.025, 0.05, 0.1, 0.5, 1 / 0.01, 0.02, 0.025, 0.05, 0.1, 0.5, 1	25, 50, 100, 300 / 5, 10, 15, 20, 25	50	5.33 5.08 9.14 8.89 10.41 10.16	3.81 5.33 3.81 5.33 3.81 5.33	0.71 0.71 0.71 0.71 0.71 0.71	N/A N/A N/A N/A N/A N/A	-55 to +150	MIL-PRF-83401, Characteristic H
SON-U - Tantalum Ultride™ small outline ultra precision resistor networks												
	SON-U959 SON-U989 SON-U999	0.1 0.18 0.2	100 - 50K	0.02, 0.05, 0.1, 0.25, 0.5, 1 / 0.005, 0.01, 0.025, 0.02, 0.05, 0.1	10, 25, 50 / 1, 2, 5	N/A	5.08 8.89 0.16	5.33 5.33 5.33	0.71 0.71 0.71	N/A N/A N/A	-55 to +120	No internal solder connections; Custom schematics and values available
SOT-143 - TaNFilm® precision resistor network												
	SOT-SOT143	0.25	100 - 50K	0.1, 0.25, 0.5, 1, 5, 10 / 0.05, 0.1, 0.25, 0.5, 1, 2	25, 50, 100, 250 / 2	100	2.8	1.2	0.8	0.37 / 0.76	-55 to +125	Industry standard 4-pin package; Standard and custom circuits available

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TCR Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
SOT-23 - TaNFilm® precision voltage divider network												
	SOT-SOT23	0.25	10 - 100K	0.1, 0.25, 0.5, 1, 5, 10 / 0.05, 0.1, 0.25, 0.5, 1, 2	25, 50, 100, 250 / 2, 5, 10, 25, 50	100	2.86	1.29	0.77	0.457	-55 to +125	Industry standard 3-pin package
SP20 - Fail-safe molded wirewound resistor												
	SP-20	1	0.1 - 1200	5, 10	150, 180	$\sqrt{PR}$	9.91	3.56	–	0.813	-55 to +160	One-watt rating in half-watt package; Drop-in replace ment for BW20 Series
SP20F - Fail-safe fusible molded wirewound resistor												
	SP-20F	1	0.1 - 1200	5, 10	150, 180	$\sqrt{PR}$	9.91	3.56	– – –	0.813	-55 to +160	<30 Sec Typical Blow Times; One-watt rating in half-watt package
SPF - Fail-safe fusible molded wirewound resistor												
	SPF	2	0.1 - 2400	5, 10	150, 180	$\sqrt{PR}$	14.3	5.72	–	0.813	-55 to +160	<30 Sec Typical Blow Times; Two-watt rating in one-watt package
SPH - Fail-safe molded wirewound resistor												
	SPH	2	0.1 - 2400	5, 10	150, 180	$\sqrt{PR}$	14.3	5.72	–	0.813	-55 to +160	Two-watt rating in one watt package; Drop-in replacement for BWH Series
SPP - Economical conformal coated wirewound resistor												
	SPP-1 SPP-2 SPP-3	1 2 3	0.1 - 1200 0.1 - 2400 0.1 - 2400	5, 10	300, 600	$\sqrt{PR}$	10.16 14.48 14.48	3.76 4.32 4.32	– – –	0.81 0.81 0.81	-55 to +160	Positive high TCR available on request; Color band standard identification
T Wirewound - Commercial semi-precision power wirewound resistor												
	T-1/2 T-1/2-A81 T-1-A T-1A-71 T-1C T-1-80 T-2A T-2A-69 T-2B-79 T-3 T-5 T-5-74 T-6 T-6-67 T-7 T-7A-55 T-10A-56 T-10 T-10-78 T-10-67	0.7 1 1 1 2 2 3, 3.7 3 3 4, 5.5 5, 6.5 5 6, 7.5 5, 6.5 7, 9 7 14 10, 13 10 11	0.1 - 4K 0.1 - 4.5K 0.1 - 12K 0.1 - 12K 0.1 - 12K 0.1 - 12K 0.1 - 25K 0.1 - 20K 0.1 - 40K 0.1 - 38K 0.1 - 45K 0.1 - 94K 0.1 - 65K 0.1 - 92K 0.1 - 115K 0.1 - 200K 0.1 - 300K 0.1 - 300K 0.1 - 300K 0.1 - 300K	0.1, 0.5, 1	20, 50, 400, 650, +6000	1000	8.4 6.4 10.3 10.3 7.1 10.3 12.7 12.7 14.2 15.8 22.2 22.2 25.4 25.4 30.0 35.0 50.8 46.0 45.2 47.6	2.0 2.2 2.4 2.4 2.4 2.4 4.8 4.8 4.8 6.3 7.9 7.9 8.0 8.0 8.0 12.0 12.0 9.5 9.5 8.7	– – – – – – – – – – – – – – – – – – – –	0.5 0.5 0.5 0.5 0.5 0.5 0.8 0.8 0.8 1.0 1.0 1.0 1.0 0.8 1.0 0.8 0.8 1.0 1.0 0.8	-55 to +350	Non-inductive windings available; High-temperature versions available
T-44 - High voltage precision thick film resistor												
	T-43 T-44 T-48	1.5 3.5 10	1K - 4G 1K - 15G 1K - 45G	1, 2, 5	25, 50, 100	4000, 8000 14000, 28000 50000, 100000	25.4 50.8 150.0	8.4 8.4 8.4	– – –	0.8 0.8 0.8	-55 to +100	Screw terminations available for series connection; Matched sets available

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TRC Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
Tapped Filter - TaNSil® Tapped filter network												
	GUS-QS20-R (20-pin QSOP) GUS-SL20-R (20-pin SOIC) GUS-TS20-R (20-pin TSSOP)	R = 0.8 C = N/A	R = 10 - 100 C = 10pF- 200pF	R = 10 C = N/A	R = 100 C = N/A	C = 25- 200	8.66 12.75 6.5	3.91 7.49 4.4	1.63 2.49 1.1	N/A N/A N/A	-55 to +125	Highly integrated filter network - replaces up to 16 discretes
Tapped Filter - TaNSil® T-filter network												
	GUS-QS24-M (24-pin QSOP) GUS-SL20-T (20-pin SOIC) GUS-SL24-M (24-pin SOIC) GUS-TS20-T (20-pin TSSOP) GUS-TS24-M (20-pin TSSOP)	R = 1.6 C = N/A	R = 10 - 100 C = 10pF- 200pF	R = 10 C = 20	R = 100 C = N/A	N/A	8.66 12.75 15.4 6.5 7.8	3.91 7.49 7.49 4.4 4.4	1.63 2.49 2.49 1.1 1.10	N/A N/A N/A N/A N/A	-55 to +125	Highly integrated R-C filter network - replaces up to 24 discretes; "M" schematic is for high frequency applications
ULR - Metal element chip resistor (replacement for CSS)												
	ULR-1 ULR-2 ULR-25 ULR-3	1 2 2.5 3	0.0005 - 0.007 0.0005 - 0.01 0.0035 - 0.006 0.0005 - 0.003	1, 5 / N/A	50, 75, 100, 150 / N/A 50 / N/A 50 / N/A 50, 75, 100 / N/A	200	6.35 6.35 6.35 6.35	3.18 3.18 3.18 3.18	0.60 - 1.40 0.60 - 1.40 0.60 0.60 - 1.00	N/A N/A N/A N/A	-55 to +170	Chip thickness varies with resistance value; Higher wattage devices feature PCB clearance gap
W - Vitreous enamalled power wirewound resistor												
	W21 W215 W22 W23 W24	3 5 7 10 14	0.1 - 10K 0.1 - 15K 0.1 - 20K 0.15 - 60K 0.2 - 100K	1, 2, 5	<+75, +200	100 160 200 500 750	12.7 22.0 22.2 38.0 53.5	5.6 7.0 8.0 8.0 8.0	– – – – –	0.8 0.8 0.8 0.8 0.8	-55 to +200	Ideal for overload protection circuits, harsh environments
WA80Z - Cement coated power wirewound resistor												
	WA83Z WA84Z WA85Z	2 3 5	0.05 - 900 0.01 - 2K 0.015 - 6.8K	1, 2, 5, 10	200, 350	50 100 150	9.0 14.5 16.5	4.5 6.5 6.5	6.25 6.9 7.9	0.8 0.8 0.8	-55 to +155	Z-lead formation for surface-mounting
WBA - TaNFilm® precision wire bondable ceramic resistor												
	WBA-T0303	0.25	10 - 20K	0.1, 0.25, 0.5, 1, 5, 10 / 0.05, 0.25, 0.5, 1, 2, 5	25, 50, 100 / 5, 10, 20	100	0.762	0.762	0.381	N/A	-55 to +150	Custom values, sizes, schematics available; Ideal for hybrid circuit applications
WBC - TaNSil® precision wire bondable silicon resistor												
	WBC-R0202 WBC-B0202 WBC-T0303	0.25	10 - 1M	5, 10 / 0.05, 0.1, 0.25, 0.5, 1, 2, 5	2, 5, 10, 25, 50	100	0.508 0.508 0.762	0.508 0.508 0.762	0.254 0.254 0.254	N/A N/A N/A	-55 to +150	Discrete and tapped versions; Custom values, sizes, schematics available
WBC - CAP - TaNCap® wire bondable chip capacitor												
	WBC-C0202 WBC-C0303 WBC-C0404 WBC-C0505 WBC-C0606	20V - 55V	10pF - 1000pF	0.5	N/A	40 55 50 20 20	0.508 0.762 1.016 1.397 1.524	0.508 0.762 1.016 1.397 1.524	0.254 0.254 0.254 0.254 0.254	N/A N/A N/A N/A N/A	-55 to +125	Silicon substrate with gold backing; Screening to MIL-STD-833 available

	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TCR Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
WBC-CR - Chromaxx® precision high ohmic range wire bondable silicon resistor												
	WBC-R0202-CR WBC-B0202-CR WBC-T0303-CR	0.25	1.01M - 2M	1, 2, 5, 10 / 0.5, 1, 2, 5	100 / 5	100	0.508 0.508 0.762	0.508 0.508 0.762	0.254 0.254 0.254	N/A N/A N/A	55 to +150	Discrete and tapped versions; custom vales, sizes, schematics, MIL-screening available
WBC-Divider - TaNSil® precision wire bondable silicon voltage divider network												
	WBC-DSOT-23 (3-pad) WBC-DSOT-143 (4-pad)	0.25	10 - 1.0M	0.1, 0.25, 0.5, 1, 5, 10 / 0.05, 0.1, 0.25, 0.5, 1, 2	25, 50, 100, 100 300 / 2, 5, 10, 25, 50		0.889 0.889	0.635 0.737	0.241 0.241	N/A N/A	-55 to +150	Three- and four-pad versions available
WBC-Multi-tap - TaNSil® wire bondable silicon multi-tap chip resistor network												
	WBC-M0303	0.25	100 - 80K	5, 10, 20	25, 50, 100	100	0.813	0.813	0.254	N/A	-55 to +150	High resistor density; MIL-screening available
WBC-RC - TaNSil® wire bondable chip resistor/capacitor network												
	WBC-DSOT-23V (AC terminator) WBC-DSOT-23T (T-filter) WBC-DSOT-23R (Tapped filter)	0.25	R = 47, C = 47pF R = 100, C = 80pF R = 33 C = 47pF	R = 150 C = 200	N/A	25	0.889 0.889 0.889	0.635 0.635 0.635	0.254 0.254 0.254	N/A N/A N/A	-55 to +125	Integrated resistor-capacitor networks
WBD-NET - TaNSil® wire bondable silicon network array resistor												
	WBD-DSS-4 (8-pad) WBD-DSS-8 (16-pad) WBD-DQSC (24-pad)	0.4 0.8 1	10 - 2.5M	0.1, 0.25, 0.5, 1, 2, 5 / 0.05, 0.1, 0.25, 0.5, 1, 2	25, 50, 100, 300 / 5, 10, 20, 25, 50, 100, 200	100	1.778 3.556 2.921	1.778 2.032 2.032	0.406 0.406 0.406	N/A N/A N/A	-55 to +150	Higher component density
WCA - Thick film chip resistor arrays												
	WCA- WCA-08 (8-terminal)	0.065	10-1M	1, 5	200	50	3.2	1.6	0.4	N/A	-55 to +125	8-terminal chip array with 4 isolated resistors
WCR - Thick film chip resistor												
	WCR-WCR-0402 WCR-WCR-0603 WCR-WCR-0805 WCR-WCR-1206 WCR-WCR-1210 WCR-WCR-2010 WCR-WCR-2512	0.063 0.1 0.125 0.25 0.25 0.5 1	4.7 - 1M 1 - 1M 1 - 10M 1 - 10M 1 - 10M 1 - 22M 1 - 22M	1, 5 0.5, 1, 2, 5 0.5, 1, 2, 5 0.5, 1, 2, 5 0.5, 1, 2, 5 0.5, 1, 2, 5 0.5, 1, 2, 5	50, 100, 200 50, 100, 200, 400 50, 100, 200, 400 50, 100, 200, 400 100, 200, 400 50, 100, 200, 400 50, 100, 200, 400	50 50 150 200 200 200 200	0.99 1.6 2.0 3.175 3.2 5.0 6.29	0.508 0.813 1.24 1.6 2.59 2.49 3.09	0.356 0.508 0.508 0.61 0.61 0.61 0.61	N/A N/A N/A N/A N/A N/A N/A	-55 to +125	Seven standard chip sizes available
WDBR - Ultra low profile dynamic braking/power resistor												
	WDBR-2 WDBR-5	2kW 5kW	5 - 270	10	contact factory	contact factory	60.96 122	40.64 70	0.9 0.9	N/A N/A	contact factory	Thick film on steel planar resistor; low inductance

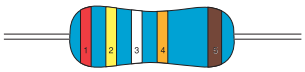
	Part Number	Power (Watts)	Resistance Range (Ohms)	Tolerance/ Ratio Tol. (±%)	TCR/ TRC Tracking (±ppm/°C)	Max. Volts	Dimensions (mm) L	W	H	D	Operating Temperature (°C)	Notes
WFF - Fast fusible metal film resistor												
	WFF-1/4 WFF-1/2 WFF-1	0.25 0.5 1	0.1 - 10K 0.1 - 27K 0.2 - 1.5K	5	250, 350	250 350 350	6.2 9.0 12.5	2.3 3.4 4.2	– – –	0.6 0.8 0.8	-55 to +155	<30 Sec typical blow times
WSM - Molded power wirewound resistor												
	WSM-1 WSM-2 WSM-3	1 2 3	0.01 - 1K 0.01 - 2K 0.01 - 3K	1, 2, 5, 10	20, 100	$\sqrt{PR}$	7.0 10.5 16.0	4.2 6.6 7.0	3.94 5.5 6.5	N/A N/A N/A	-55 to +155	Surface mount wirewound device; flexible terminations
WSML - Current detecting chip resistor												
	WSML-1 WSML-2	1 2	0.005 - 10K	1, 5	100, 180	200 500	6.3 11.5	3.1 7.0	1.9 2.5	N/A N/A	-55 to +180	Flameproof polymer molded case (UL94 V-0)
ZCHP - Cylindrical zerohm jumper resistor												
	ZCHP-1/8	3A 4A 5A 6A	<0.02 <0.30 <0.35 <0.35	N/A	N/A	N/A	3.25 5.08 6.38 9.32	1.45 2.01 2.01 2.67	– – – –	N/A N/A N/A N/A	-55 to +150	Superior solderability
Zerohm - Molded jumper wires												
	YZO/RG	3A	<0.01	N/A	N/A	N/A	6.35	2.3	- -	0.63	-65 to +150	MIL version available under DESC drawing #87009

Standard Resistance Values For the 10 to 100 Decade (ALSO USABLE IN DECADE MULTIPLES OR SUB-MULTIPLES)

RESISTANCE TOLERANCE (±%)

E192	E96	E24	E12	E6	E192	E96	E24	E12	E6	E192	E96	E24	E12	E6	E192	E96	E24	E12	E6	E192	E96	E24	E1	E6
0.1%					0.1%					0.1%					0.1%					0.1%				
0.25%	1%	2%	10%	20%	0.25%	1%	2%	10%	20%	0.25%	1%	2%	10%	20%	0.25%	1%	2%	10%	20%	0.25%	1%	2%	10%	20%
0.5%		5%			0.5%		5%			0.5%		5%			0.5%		5%			0.5%		5%		
10.0	10.0	10	10	10	15.8	15.8	—	—	—	24.9	24.9	—	—	—	39.2	39.2	39	39	—	62.6	—	—	—	—
10.1	—	—	—	—	16.0	—	16	—	—	25.2	—	—	—	—	39.7	—	—	—	—	63.4	63.4	—	—	—
10.2	10.2	—	—	—	16.2	16.2	—	—	—	25.5	25.5	—	—	—	40.2	40.2	—	—	—	64.2	—	—	—	—
10.4	—	—	—	—	16.4	—	—	—	—	25.8	—	—	—	—	40.7	—	—	—	—	64.9	64.9	—	—	—
10.5	10.5	—	—	—	16.5	16.5	—	—	—	26.1	26.1	—	—	—	41.2	41.2	—	—	—	65.7	—	—	—	—
10.6	—	—	—	—	16.7	—	—	—	—	26.4	—	—	—	—	41.7	—	—	—	—	66.5	66.5	—	—	—
10.7	10.7	—	—	—	16.9	16.9	—	—	—	26.7	26.7	—	—	—	42.2	42.2	—	—	—	67.3	—	—	—	—
10.9	—	—	—	—	17.2	—	—	—	—	27.1	—	27	27	—	42.7	—	—	—	—	68.1	68.1	68	68	68
11.0	11.0	11	—	—	17.4	17.4	—	—	—	27.4	27.4	—	—	—	43.2	43.2	43	—	—	69.0	—	—	—	—
11.1	—	—	—	—	17.6	—	—	—	—	27.7	—	—	—	—	43.7	—	—	—	—	69.8	69.8	—	—	—
11.3	11.3	—	—	—	17.8	17.8	—	—	—	28.0	28.0	—	—	—	44.2	44.2	—	—	—	70.6	—	—	—	—
11.4	—	—	—	—	18.0	—	18	18	—	28.4	—	—	—	—	44.8	—	—	—	—	71.5	71.5	—	—	—
11.5	11.5	—	—	—	18.2	18.2	—	—	—	28.7	28.7	—	—	—	45.3	45.3	—	—	—	72.3	—	—	—	—
11.7	—	—	—	—	18.4	—	—	—	—	29.1	—	—	—	—	45.9	—	—	—	—	73.2	73.2	—	—	—
11.8	11.8	—	—	—	18.7	18.7	—	—	—	29.4	29.4	—	—	—	46.4	46.4	—	—	—	74.1	—	—	—	—
12.0	—	12	12	—	18.9	—	—	—	—	29.8	—	—	—	—	47.0	—	47	47	47	75.0	75.0	75	—	
12.1	12.1	—	—	—	19.1	19.1	—	—	—	30.1	30.1	30	—	—	47.5	47.5	—	—	—	75.9	—	—	—	—
12.3	—	—	—	—	19.3	—	—	—	—	30.5	—	—	—	—	48.1	—	—	—	—	76.8	76.8	—	—	—
12.4	12.4	—	—	—	19.6	19.6	—	—	—	30.9	30.9	—	—	—	48.7	48.7	—	—	—	77.7	—	—	—	—
12.6	—	—	—	—	19.8	—	—	—	—	31.2	—	—	—	—	49.3	—	—	—	—	78.7	78.7	—	—	—
12.7	12.7	—	—	—	20.0	20.0	20	—	—	31.6	31.6	—	—	—	49.9	49.9	—	—	—	79.6	—	—	—	—
12.9	—	—	—	—	20.3	—	—	—	—	32.0	—	—	—	—	50.5	—	—	—	—	80.6	80.6	—	—	—
13.0	13.0	13	—	—	20.5	20.5	—	—	—	32.4	32.4	—	—	—	51.1	51.1	51	—	—	81.6	—	—	—	—
13.2	—	—	—	—	20.8	—	—	—	—	32.8	—	—	—	—	51.7	—	—	—	—	82.5	82.5	82	82	
13.3	13.3	—	—	—	21.0	21.0	—	—	—	33.2	33.2	33	33	33	52.3	52.3	—	—	—	83.5	—	—	—	—
13.5	—	—	—	—	21.3	—	—	—	—	33.6	—	—	—	—	53.0	—	—	—	—	84.5	84.5	—	—	—
13.7	13.7	—	—	—	21.5	21.5	—	—	—	34.0	34.0	—	—	—	53.6	53.6	—	—	—	85.6	—	—	—	—
13.8	—	—	—	—	21.8	—	—	—	—	34.4	—	—	—	—	54.2	—	—	—	—	86.6	86.6	—	—	—
14.0	14.0	—	—	—	22.1	22.1	22	22	22	34.8	34.8	—	—	—	54.9	54.9	—	—	—	87.6	—	—	—	—
14.2	—	—	—	—	22.3	—	—	—	—	35.2	—	—	—	—	55.6	—	—	—	—	88.7	88.7	—	—	—
14.3	14.3	—	—	—	22.6	22.6	—	—	—	35.7	35.7	—	—	—	56.2	56.2	56	56	—	89.8	—	—	—	—
14.5	—	—	—	—	22.9	—	—	—	—	36.1	—	36	—	—	56.9	—	—	—	—	90.9	90.9	91	—	—
14.7	14.7	—	—	—	23.2	23.2	—	—	—	36.5	36.5	—	—	—	57.6	57.6	—	—	—	92.0	—	—	—	—
14.9	—	—	—	—	23.4	—	—	—	—	37.0	—	—	—	—	58.3	—	—	—	—	93.1	93.1	—	—	—
15.0	15.0	15	15	15	23.7	23.7	—	—	—	37.4	37.4	—	—	—	59.0	59.0	—	—	—	94.2	—	—	—	—
15.2	—	—	—	—	24.0	—	24	—	—	37.9	—	—	—	—	59.7	—	—	—	—	95.3	95.3	—	—	—
15.4	15.4	—	—	—	24.3	24.3	—	—	—	38.3	38.3	—	—	—	60.4	60.4	—	—	—	96.5	—	—	—	—
15.6	—	—	—	—	24.6	—	—	—	—	38.8	—	—	—	—	61.2	—	—	—	—	97.6	97.6	—	—	—
															61.9	61.9	62	—	—	98.8	—	—	—	—

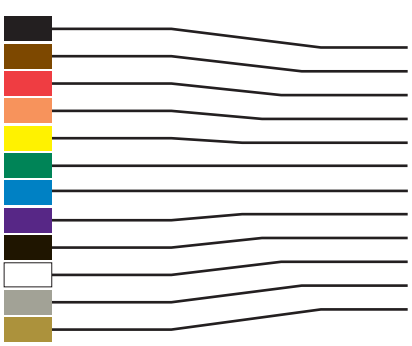
Standard Color Code



PRECISION - Have three significant-figure bands, a multiplier band and a tolerance band. Tolerances 1% or less.

GENERAL PURPOSE - Have two significant-figure bands, a multiplier band and a tolerance band. Tolerances 2% or greater.

	PRECISION	GENERAL PURPOSE
1ST BAND	NOMINAL	NOMINAL
2ND BAND	NOMINAL	NOMINAL
3RD BAND	NOMINAL	MULTIPLIER
4TH BAND	MULTIPLIER	TOLERANCE
5TH BAND	TOLERANCE	



	Nominal	Multiplier	Tolerance (%)
Black	0	1	—
Brown	1	10	1
Red	2	100	2
Orange	3	1K	—
Yellow	4	10K	—
Green	5	100K	0.5
Blue	6	1000K	0.25
Violet	7	—	0.1
Gray	8	—	—
White	9	0.001	—
Silver	—	0.01	10
Gold	—	0.1	5

Precision MIL-Qualified Metal Glaze™ Resistors (Boone, NC)

MIL P/N or Style	MIL Qualification	IRC Type	Rated Dissipation	Approved Resistance Range	Tolerance	TCR (ppm/°C)
RL07	MIL-R-22684	RGR07	0.25W @ 70°C	51Ω-150KΩ	±2, ±5%	200
RL20	MIL-R-22684	RGR20	0.5W @ 70°C	4.3Ω-470KΩ	±2, ±5%	200
RLRO5/S	MIL-R-39017	RGR05	0.125W @ 70°C	10Ω-301KΩ	±1, ±2%	100
RLR07/S	MIL-R-39017	RGR07	0.25W @ 70°C	10Ω-3.01MΩ	±1, ±2%	100
RLR20/S	MIL-R-39017	RGR20	0.5W @ 70°C	4.3Ω-3.01MΩ	±1, ±2%	100
RNC50H/S	MIL-R-55182	TH50	0.05W @ 125°C	10Ω-301KΩ	±1%	50
RNC55H/S	MIL-R-55182	TH55	0.1W @ 125°C	10Ω-2MΩ	±0.1, 0.5, 1%	50
RNC60H/S	MIL-R-55182	TH60	0.125W @ 125°C	10Ω-100KΩ	±0.1, 0.5, 1%	50

Other TCR's available within RNC family. Contact factory.

Thick Film High Voltage Resistors (Boone, NC)

MIL P/N or Style	MIL Qualification	IRC Type	Rated Dissipation	Approved Resistance Range	Tolerance	TCR (ppm/°C)
RHV30	MIL-R-49462	CMH 1/4	0.25W @ 70°C	330KΩ-100MΩ	±1, 2, 5%	100
RHV31	MIL-R-49462	CMH 1/2	0.5W @ 70°C	330KΩ-392MΩ	±1, 2, 5%	100
RHV32	MIL-R-49462	CMH 1	1W @ 70°C	330KΩ-499MΩ	±1, 2, 5%	100
RHV33	MIL-R-49462	CMH 2	2W @ 70°C	330KΩ-499MΩ	±1, 2, 5%	100
RHV34	MIL-R-49462	CMH 3	3W @ 70°C	330KΩ-1GΩ	±1, 2, 5%	100
RHV35	MIL-R-49462	CMH 5	5W @ 70°C	330KΩ-1GΩ	±1, 2, 5%	100

Precision Wirewound Resistors (Smithfield, NC)

MIL P/N or Style	MIL Qualification	IRC Type	Rated Dissipation	Approved Resistance Range	Tolerance	TCR*
RB56	MIL-R-93	VA10	0.125W	0.1Ω-127KΩ	±0.5 to 1%	10
RB55	MIL-R-93	VA12	0.150W	0.1Ω-176KΩ	±0.5 to 1%	10
RB54	MIL-R-93	VA14	0.250W	0.1Ω-226KΩ	±0.5 to 1%	10
RB53	MIL-R-93	VA34	0.330W	0.1Ω-604KΩ	±0.5 to 1%	10
RB52	MIL-R-93	VA36	0.500W	0.1Ω-1MΩ	±0.5 to 1%	10
RB71 (radial)	MIL-R-93	PC8	0.125W	0.1Ω-100KΩ	±0.5 to 1%	10
RB70 (radial)	MIL-R-93	4065	0.250W	0.1Ω-301KΩ	±0.5 to 1%	10
RBR56	MIL-R-39005	HR10	0.125W	0.1Ω-220KΩ	±0.01 to 1%	10
RBR55	MIL-R-39005	HR12	0.150W	0.1Ω-332KΩ	±0.01 to 1%	10
RBR54	MIL-R-39005	HR14	0.250W	0.1Ω-562K	±0.01 to 1%	10
RBR53	MIL-R-39005	HR34	0.330W	0.1Ω-1.1MΩ	±0.01 to 1%	10
RBR52	MIL-R-39005	HR36	0.500W	0.1Ω-1.21MΩ	±0.01 to 1%	10
RBR71 (radial)	MIL-R-39005	HR8	0.125W	0.1Ω-150KΩ	±0.01 to 1%	10
RBR81 (radial)	MIL-R-39005	HR340	0.100W	0.1Ω-200KΩ	±0.01 to 1%	10
RBR80 (radial)	MIL-R-39005	HR341	0.100W	0.1Ω-120KΩ	±0.01 to 1%	10

* RBR/RB 100Ω-up

MIL-PRF-83401 - Precision TaFilm Resistor Networks (Corpus Christi, TX)

MIL P/N or Style	MIL Qualification	IRC Type	Rated Dissipation	Approved Resistance Range	Tolerance	TCR (ppm/°C)
M83401/01/13	RZ010/RZ130	1989/1987	14 pin DIP	50Ω-100K	±0.1 to 5%	50, 100, 300
M83401/02/14	RZ020/RZ140	1999/1998	16 pin DIP	50Ω-100KΩ	±0.1 to 5%	50, 100, 300
M83401/03/15	RZ030/RZ150	8989/8987	14 pin Flat Pack	49.9Ω-121KΩ	±0.1 to 5%	50, 100, 300
M83401/07/21	RZ070/RZ210	4761/4769	6 pin SIP	100Ω-100KΩ	±0.1 to 5%	50, 100, 300
M83401/08/22	RZ080/RZ220	4781/4789	8 pin SIP	100Ω-100KΩ	±0.1 to 5%	50, 100, 300
M83401/09/23	RZ090/RZ230	4701/4709	10 pin SIP	100Ω-100KΩ	±0.1 to 5%	50, 100, 300
M83401/10	RZ100	8999/8998	16 pin Flat Pack	100Ω-100KΩ	±0.1 to 5%	50, 100, 300

MIL-PRF-55342 - Precision TaNFilm Chip Resistors (Corpus Christi, TX)

MIL P/N or Style	MIL Qualification	IRC Type	Rated Dissipation	Approved Resistance Range	Tolerance	TCR (ppm/°C)
M55342/6	RM0705	W0805R	flat chip (0805)	10Ω-125KΩ	±0.1 to 10%	25, 50, 100, 300
D55342/7	RM1206	W1206R	flat chip (1206)	10Ω-125KΩ	±0.1 to 10%	25, 50, 100, 300
M55342/4	RM1505	W1505R	flat chip (1505)	10Ω-125KΩ	±0.1 to 10%	25, 50, 100, 300
M55342	RM0603	W0603R	flat chip (0603)	10Ω-59KΩ	±0.1 to 10%	25, 50, 100, 300
M55342	RM0603	W0603R	flat chip (0603)	100Ω-59KΩ	±0.1	25

MIL-PRF-55342-Precision TaNFilm Chp Resistors (Corpus Christi, TX)

D55342/7	RM1206	TMC1206	0.250W	5.62Ω-1MΩ	±1 to 10%	100, 300
M55342/8	RM2010	TMC2010	0.600W	5.62Ω-15MΩ	±1 to 10%	100, 300
M55342/9	RM2512	TMC2512	0.750W	5.62Ω-15MΩ	±1 to 10%	100, 300

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ALABAMA	RO Whitesell and Associates	www.whitesell.com	Huntsville 35801	256-883-5110	256-882-9626
ARIZONA	Thom Luke Sales	www.thomlukesales.com	Scottsdale 85258	480-451-5400	480-451-0172
CALIFORNIA	James S. Heaton Company	www.jsheaton.com	Mountainview 94043	650-962-5300	650-962-5309
	English Technical Sales	www.englishsales.com	Lake Forest 92630	949-305-8181	949-305-8182
COLORADO	Thom Luke Sales	www.thomlukesales.com	Englewood 80112	303-649-9717	303-649-9719
CONNECTICUT	Coakley, Boyd and Abbett	www.cbane.com	Cheshire 06410	203-265-7050	580-820-4607
FLORIDA	Graham Associates	www.grahamrep.com	Rockledge 32955	321-504-1042	978-418-6540
	Conley and Associates	www.conleyrep.com	Oviedo 32765	407-365-3283	407-365-3727 (Anotherm product only)
	Conley and Associates	www.conleyrep.com	St. Petersburg 33702	727-579-4400	727-579-4404 (Anotherm product only)
GEORGIA	Alliance EMG	www.contactalliance.com	Buford 30518	770-475-2654	770-475-5936
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IOWA	M.I.N.K. Associates, Inc.	www.minkassoc.com	Cedar Rapids 52402	319-393-0373	316-721-2567
KANSAS	M.I.N.K. Associates, Inc.	www.minkassoc.com	Overland Park 66212	913-341-8309	913-341-2605
	M.I.N.K. Associates, Inc.	www.minkassoc.com	Godard 67052	316-729-7500	316-729-7509
	M.I.N.K. Associates, Inc.	www.minkassoc.com	St. Louis 63146	314-995-5355	314-995-5736
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MICHIGAN	RO Whitesell and Associates	www.whitesell.com	Farmington Hills 48334	248-473-5454	248-473-1165
	RO Whitesell and Associates	www.whitesell.com	Jenison 49428	616-457-1717	616-457-2280
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	RO Whitesell and Associates	www.whitesell.com	Clarkston 48346	248-620-9640	248-620-9680
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NEW JERSEY	Coakley, Boyd & Abbett	www.cbane.com	Midland Park 07432	201-444-6262	201-444-1082
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	Electra Sales	www.electrasales.com	East Syracuse 13057	315-463-1248	315-463-1717
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	Fralia	www.fralia.com	Austin 78749	512-291-0407	512-291-0407
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	Fralia	www.fralia.com	McAllen 78504	956-682-7657	956-687-6815
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	Chip Supply	www.chipsupply.com	Orlando, FL 32810	407-298-7100	407-290-0164
	Electro Sonic	www.e-sonic.com	Toronto, Ont. M2H 3B3	416-494-1666	416-496-3030
	Future Electronics	www.future.ca	Pointe Clarie, Quebec H9R 5C7	514-694-7710	514-695-3707
	Jaco Electronics	www.jacoelectronics.com	Hauppauge, NY 11788	631-273-5500	631-273-5799
	Justin Electronics	www.justinelectronics.com	Hauppauge, NY 11788	631-951-4900	631-951-4747
	LXI Components	www.lxicomponents.com	Tampa, FL 33619	813-663-9682	813-663-0094
	Marsh Electronics	www.marshelectronics.com	Milwaukee, WI 53214	414-475-6000	414-771-2847
	Mouser	www.mouser.com	Mansfield, TX 76063	800-346-6873	817-804-3899
	Neumann Electronics	www.neumannelectronicsinc.com	San Diego, CA 92126	800-786-2548	858-695-0935
	New Yorker Electronics	www.newyorkerelectronics.com	Northvale, NJ 07647	207-750-1171	207-750-1174
	Newark Electronics	www.newark.com	Chicago, IL 60640	773-784-5100	888-551-4801
	Hughes-Peters	www.hughespeters.com	Huber Heights, OH 45424	888-264-6535	937-235-7111
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	Semi Dice	www.semidice.com	Los Alamitos, CA 90720	562-594-4631	562-430-5942
	Spirit Electronics	www.spiritelectronics.com	Scottsdale, AZ 85260	480-998-1533	480-798-1427

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	BBS Electronics Australia Pty Ltd.	www.bbs.com.sg	Notting Hill	613-9542-1900	613-9543-8291
CANADA	CMT - Renmark	www.cmt-renmark.com	Mississauga, Ontario	905-612-0900	905-612-0905
	CMT - Renmark	www.cmt-renmark.com	Montreal, Ontario	613-596-4200	450-468-6363
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	CMT - Renmark (serves Alberta and British Colombia)	www.cmt-renmark.com	Calgary, Alberta	403-225-3033	604-875-9007
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	YEL Electronics Limited.	www.yel-electronics.com	Kowloon	852-3129 9833	852-2330 4207
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	BBS Electronics Pte Ltd.	www.bbs.com.sg	Secunderabad	91-403090-4074	91-40-5533 5403
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SWITZERLAND	Datwyler Electronics	www.d-e.ch/	Zurich	41-1-276-1111	41-1-276-1234
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