

UNIVERSAL 12kHz METERING SIGNAL FILTER

P2895

Features

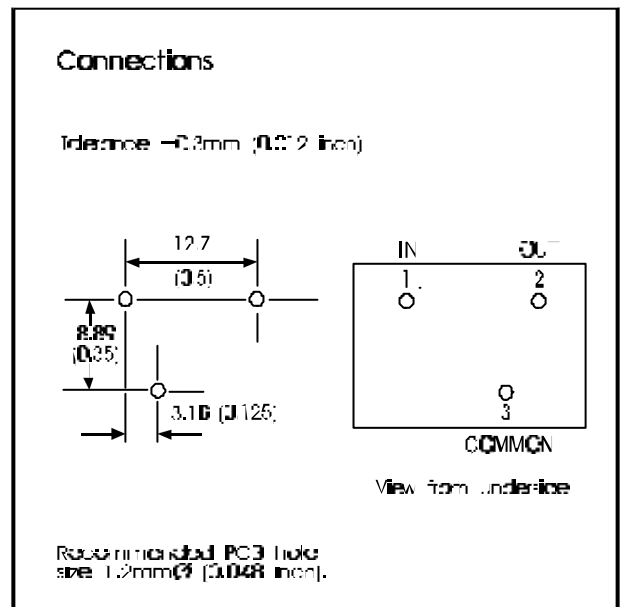
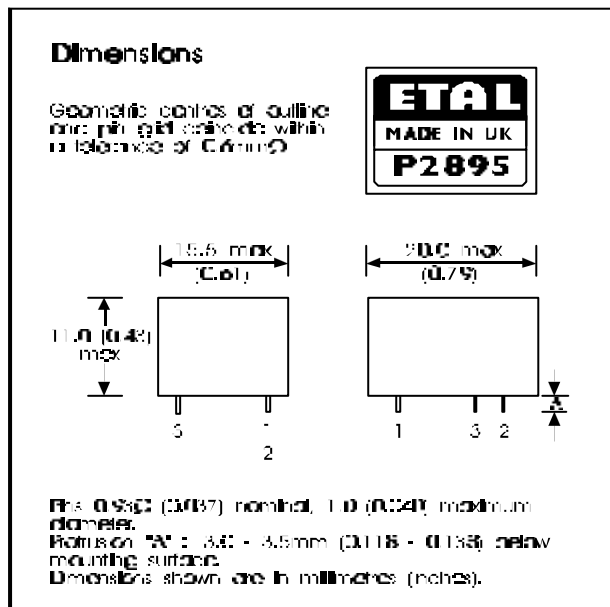
- * Miniature construction
- * >30dB attenuation at 12kHz
- * Matches 600Ω and complex impedances
- * Minimal in-band attenuation

DESCRIPTION

Many telephone networks bear 12kHz metering signals at amplitudes sufficient to operate simple relay-type apparatus without amplification on customers' premises. Modems containing semiconductor line-hold circuits are easily upset by these large signals because the voltage swing may exceed the standing DC level. The P2895 filter

deals effectively with this problem suppressing the metering signals, its attenuation ensuring that, in the worst case, their level is reduced to less than 0.25Vrms across the line-hold. The claimed performance is maintained even when the drive is the greatest of which the network is capable and with simultaneous maximum DC superimposed.

CONSTRUCTION



Safety

A non-safety-critical component.

Line to Line

Maximum: 200V DC.
 Supports: 75V DC plus maximum ringing voltage.

Worst-Case Drive

This is determined by the Swiss test conditions which are the most stringent. In Switzerland the most unfavourable level of 12kHz meter pulses is 10Vrms at the subscriber's equipment.

(ETS 300 001 para. 1.7.8)

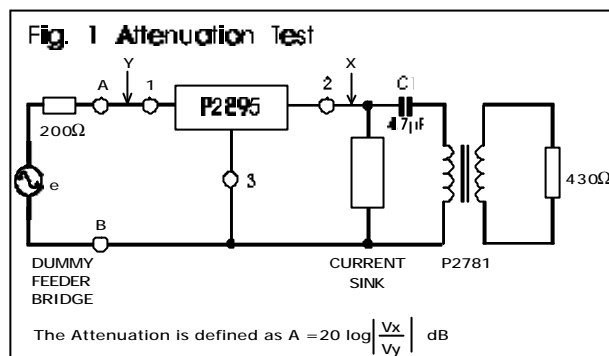
TEST CONDITIONS

Attenuation Test*

See circuit Fig. 1 Note that C1 etc. need not be present.

Frequency	12kHz \pm 150Hz
Input voltage	up to 10Vrms
DC	up to 100mA
Temperature	-10°C to +70°C

*IN and OUT terminals MUST be respected but the filter may be inverted because the transformer interwinding impedances are very high, so avoiding imbalance effects.



PERFORMANCE CLAIMS

Attenuation

Exceeds 32dB.

NOTE: Further attenuation at the load may be provided by roll-off in the transformer.

P1200 and P2001 approx 6.0dB
 P1165 approx 0.5dB
 P2781 negligible

Input Impedance (11.88 – 12.12kHz)

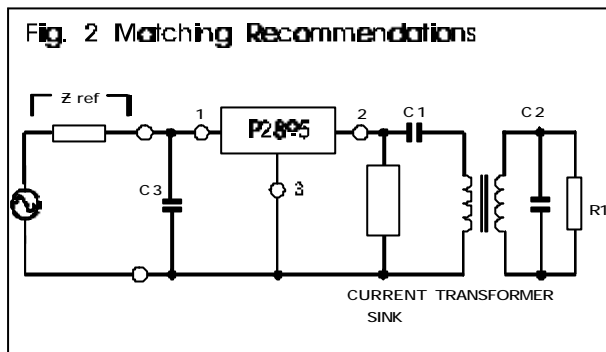
With 15nF input capacitor C3, >800Ω (almost pure capacitance).

Without 15nF input capacitor, >1kΩ

Line loading due to shunt impedance at 12kHz \pm 1% < 1dB (600Ω source, 600Ω measuring set).

DC Resistance

Pins 1-2: 12.5-14.5Ω



For matching to transformers and reference impedances not specified below, please contact Profec Technologies.

Z ref	Transformer	C1 μF	C2 nF	C3* nF	R1 ohms	Return Loss, dB			
						300Hz	500Hz	2500Hz	3400Hz
220Ω+ (820Ω//115nF)	P1200	2.2	27 ± 5%	15 ± 5%	910 2%	15	26	26	26
	P2001	2.2	27 ± 5%	15 ± 5%	910 2%	15	26	26	26
	P1165	2.2	15 ± 5%	15 ± 5%	910 2%	14	24	26	20
	P2781	2.2	15 ± 5%	15 ± 5%	820 2%	16	26	22	20
600Ω	P1200	3.3	33 ± 5%	Not fitted	560 2%	16	21	21	19
	P2001	3.3	33 ± 5%	Not fitted	560 2%	16	21	21	19
	P1165	3.3	Not fitted	Not fitted	470 2%	15	21	22	18
	P2781	3.3	Not fitted	Not fitted	470 2%	16	22	19	14
400Ω+ (500Ω//330nF)	P1165	2.2	27 ± 5%	Not fitted	620 2%	14	21	23	20

*To obviate the need for C3, ETAL® product P2622 is available.

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CAUTION

This signal filter has been designed and characterized for use with ETAL line isolating transformers only. Satisfactory performance cannot be guaranteed with other components.

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ISO 9001
FM 25326

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