PRODUCT DATA SHEET

UNIVERSAL 16kHz METERING SIGNAL FILTER

P2692

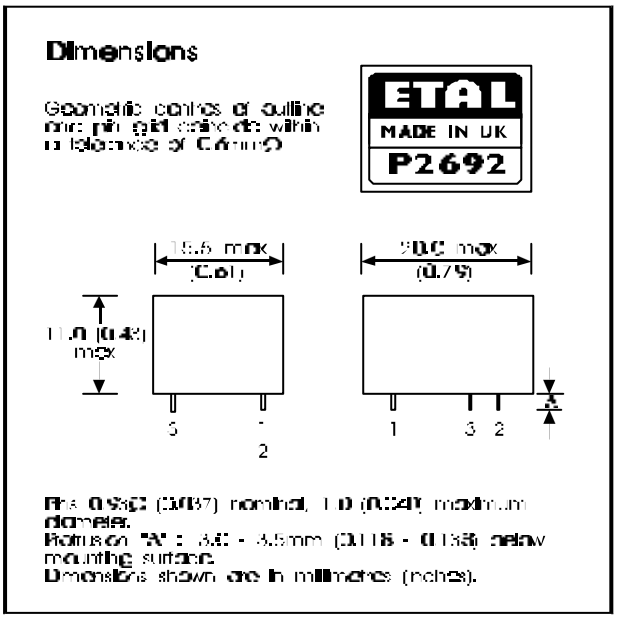
Features

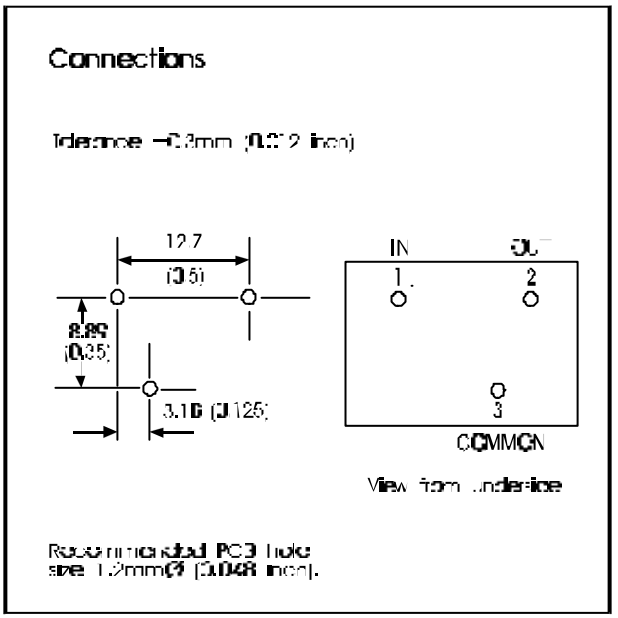
* Miniature construction
* >40dB attenuation at 16kHz
* Matches 600Ω and complex impedances
* Minimal in-band attenuation

DESCRIPTION

Many telephone networks bear 16kHz 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 P2692 filter deals effectively with this by problem suppressing the metering signals, its attenuation ensuring that, in the worst case, their level is reduced to less than 0.2Vrms 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





1998
to Electronic Techniques (Anglia) Limited

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 German test conditions which are the most stringent. The feeder bridge represents a source resistance of 200Ω at the simulated line terminals. This 'line' is loaded with a resistance of 200Ω and the 16kHz level adjusted to +22dBm/600. The source voltage is then +28dBm/600 or 19.50Vrms.

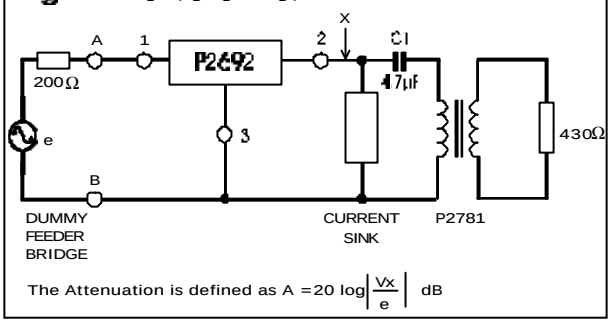
TEST CONDITIONS

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

Frequency	16kHz ±160Hz
Source voltage	up to 20Vrms
DC	up to 70mA
Temperature	-10ºC to +70ºC

*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.

Fig. 1 Attenuation Test



PERFORMANCE CLAIMS

Attenuation
Exceeds 40dB.

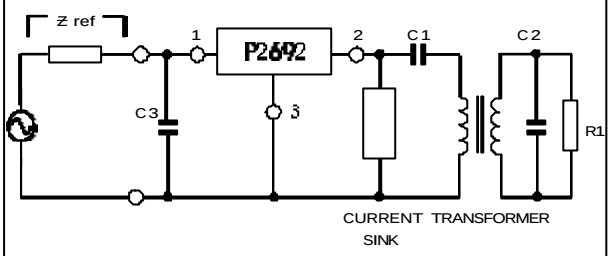
NOTE: Further attenuation at the load may be provided by roll-off in the transformer.

P1200 and P2001	approx 11.0dB
P1165	approx 0.5dB
P2781	negligible

Input Impedance
With 15.92 – 16.08 at AB.
With 22nF input capacitor C3, >400Ω (almost pure capacitance)
Without 22nF input capacitor, >1kΩ

DC Resistance
Pins 1-2: 12.5-14.5Ω

Fig. 2 Matching Recommendations



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

Z ref	Transformer	C1	C2	C3	R1	Return Loss, dB			
		µF	nF	nF	ohms	300Hz	500Hz	2500Hz	3400Hz
Germany	P1200	2.2	22 ± 5%	22 ± 5%	910 2%	19	24	30	28
220Ω+	P2001	2.2	22 ± 5%	22 ± 5%	910 2%	19	24	30	28
(820Ω//115nF)	P1165	2.2	6.8 ± 5%	22 ± 5%	910 2%	19	24	30	23
	P2781	2.2	33 ± 5%	Not fitted	910 2%	30	30	26	23
600Ω	P1200	4.7	22 ± 5%	Not fitted	560 2%	19	22	22	22
	P2001	4.7	22 ± 5%	Not fitted	560 2%	19	22	22	22
	P1165	4.7	Not fitted	Not fitted	560 2%	19	22	21	19
	P2781	4.7	Not fitted	Not fitted	430 2%	22	24	21	17

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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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