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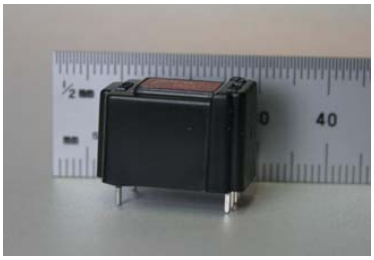
RAZ3V010-SS



Device Summary :

The RAZ3V-SS range is a high-speed open loop Hall-effect current transducer which operates from a single +5V supply. It exhibits low drift and gain change across its working temperature range. It is available in a variety of current ranges from 40mA – 100A*.

The whole range displays wide bandwidth - coupled with it's very low hysteresis when used in PWM applications this make it an ideal solution for Variable Frequency Drive and Servo Drive applications. In addition it exhibits very low feed-through of primary dv/dt.

For manufacturing convenience it is housed in a small-footprint, machine-insertable package.

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Operating Temperature	**T_A**	**-25 to +85**	**^{0}C**
Storage Temperature	**T_{stg}**	**-65 to +150**	**^{0}C**
Supply Voltage	**Vs**	**6**	**V**
Measuring Circuit Current	**Im**	**100***	**A**

*** For current ranges up to 250A – please contact factory**

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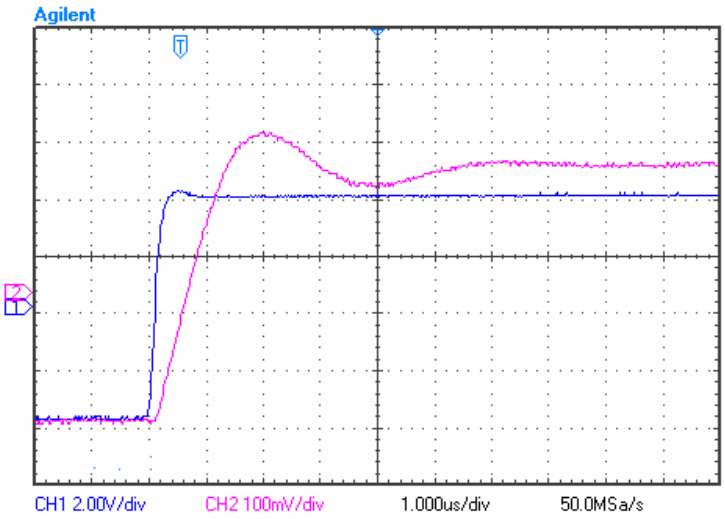
RAZ3V010-SS (100A) Characteristics (T_A = 25^{0}C unless stated, Vs = 5V)

Parameter	Symbol	Lower Limit	Typical	Upper Limit	Unit
Supply Current (no load)	**Is**		**25**	**30**	**mA**
Supply Voltage	**Vs**	**4.75**	**5.0**	**5.25**	**V**
Current range for <+/-3% error (-25 to +85^{0}C)	**I_m**	**+/-80**			**A**
Null Output Voltage	**Vo**	**2.53**	**2.57**	**2.61**	**V**
Transfer Function (-25^{0}C to +85^{0}C)	**ΔV/I**	**9.6**	**12**	**14.5**	**mV/A**
Non-linearity (+/-80A, -25^{0}C to +85^{0}C)			**1**	**3**	**%**
Hysteresis (0 to 50AT)			**0.2**	**0.4**	**%**
Null drift due to temperature change	**$TC_{\Delta Vo/Vo}$**		**+/- 0.01**	**+/- 0.04**	**mV/K**
Gain change due to temperature change	**TC_G**	**-0.02**	**0**	**+0.02**	**%/K**
Reaction time (to 10% Im)	**t_{ra}**		**300**		**ns**
Response time (to 90%Im)	**t_r**		**1.0**	**1.33**	**µs**
Frequency response	**f_{-3dB}**		**350**		**kHz**
Noise 0-700kHz	**E_{nrms}**			**1**	**mVrms**
Output resistance	**R_o**		**2.4**	**2.7**	**kΩ**
Output Parallel Capacitance	**Co**	**215**	**235**	**250**	**pF**
Primary dv/dt effect (equivalent primary ampere/turns)			**5 x 10^{-9}**		**$AV^{-1}s$**
Recommended load resistance		**100,000**			**Ohms**

Typical Step response –
(Ch1 = 40A Step input, Ch2 = output change)



(average of 16 sweeps to minimize visible power-supply noise)

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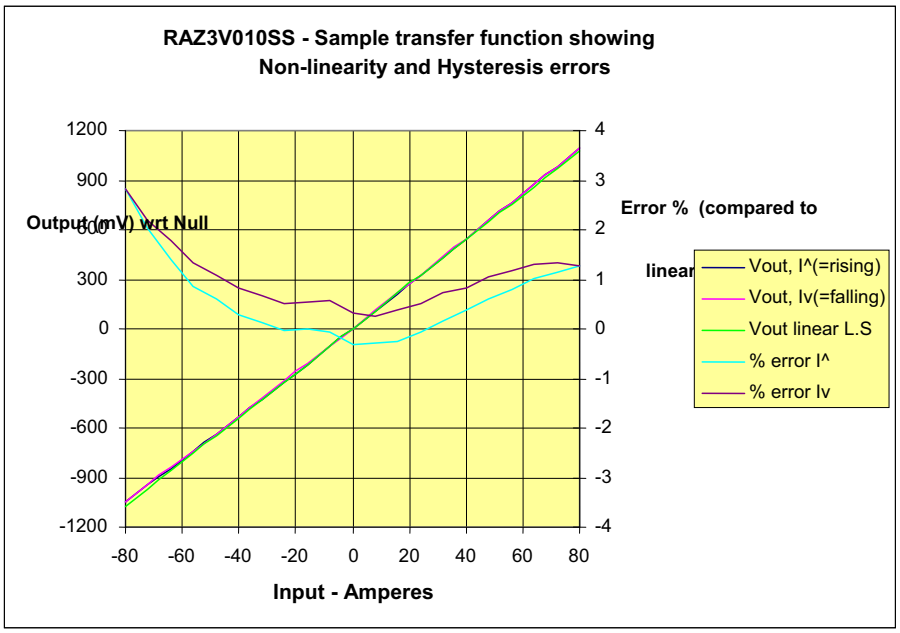
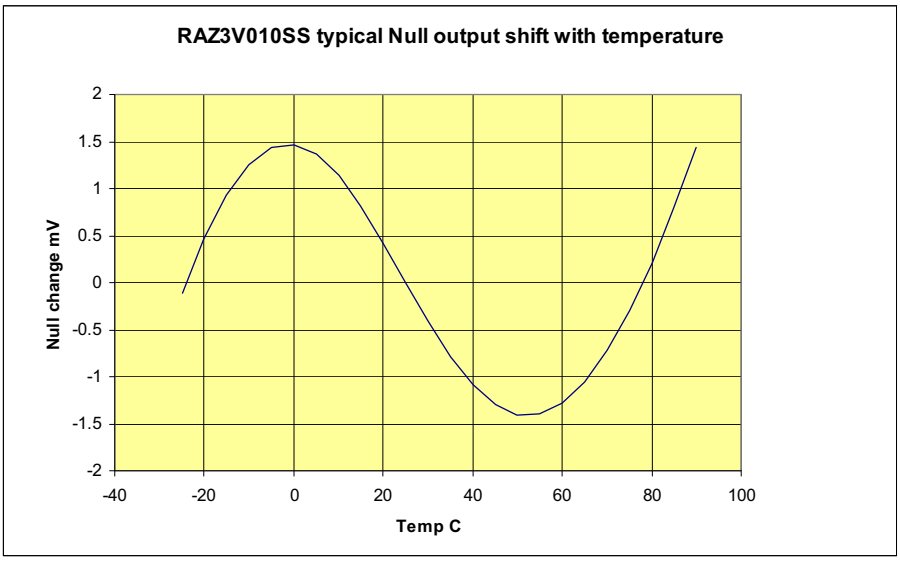
DC Characteristics - Typical transfer function –



Null stability with device temperature



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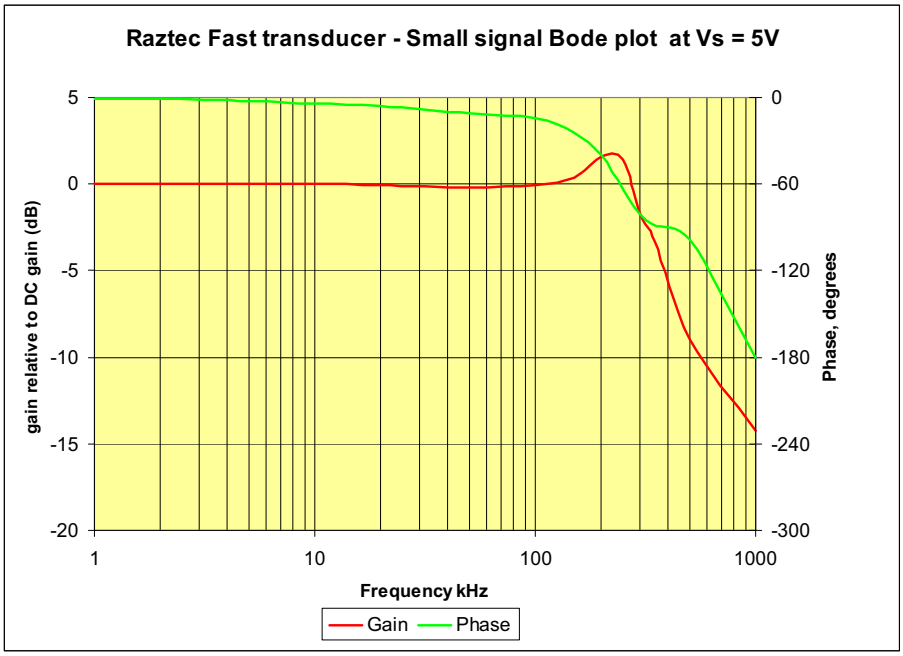
Small-signal AC Characteristics -



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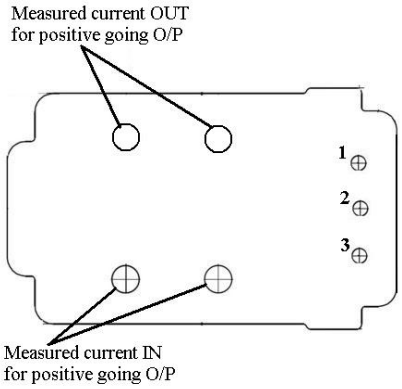
Connections –



Footprint looking onto mounting surface

Secondary Pins -

1	+5V supply
2	0V common
3	Output

Device Marking –

V010SS
0633

(Lower line shows date code – week 33 of 2006)

This device may require target-application calibration and is therefore recommended for high-volume applications.

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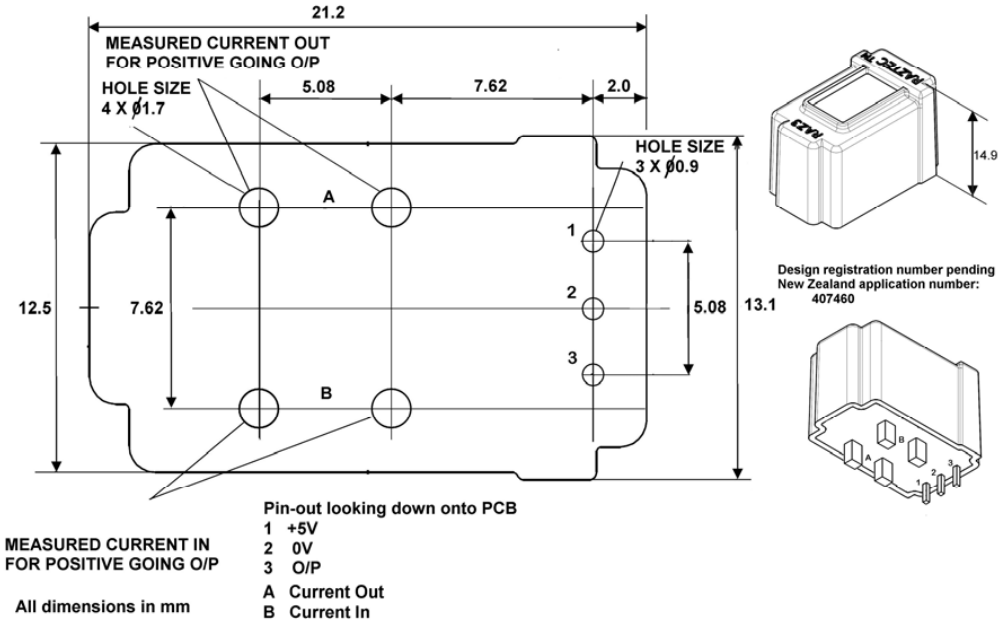
Mechanical



Footprint looking onto mounting surface – dimensions in mm

Raztec (NZ) Ltd operate a continuous product improvement program, therefore information contained in our datasheets may not reflect all current features. For clarification please contact sales@raztec.co.nz

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