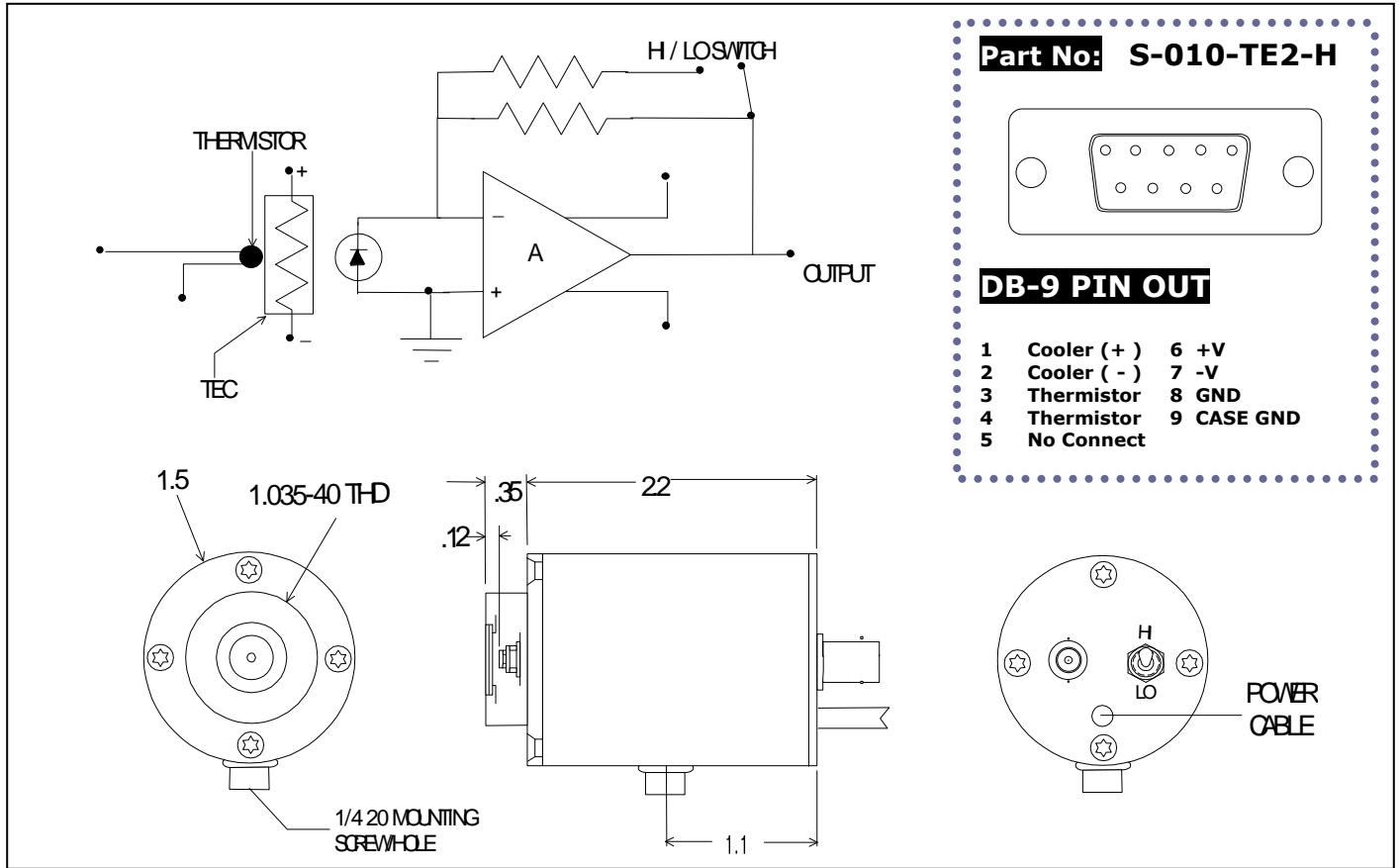


TE-SERIES PHOTODIODE / RECEIVER



Application Note

This unit is a high performance photodiode/receiver operated with a thermoelectric cooler for stabilization/cooling with a dual gain FET input transimpedance amplifier. The output voltage is proportional to the input signal current: $V_{out} = I_{signal} \cdot R_f$. The PD/AMP is a DC coupled dual gain system. Care should be taken in shielding the unit from stray light during operation to prevent saturation of the amplifier (and potential failure).

SPECIFICATIONS

Detector Type	1mm dia Silicon Photodiode	
Operating Temperature- °C	22 @ $I_{tech} = 0.0 A$	- 30 @ $I_{tech} = 0.5 A$
Operating Wavelength- μm	0.3 - 1.0	0.3 - 1.0
Responsivity- V/W @ 850nm	$0.6 \times 10^9 / 10^8$	$0.6 \times 10^9 / 10^8$
Noise- V/Hz ^{1/2}	$10 \times 10^{-6} / 1.0 \times 10^{-6}$	$5.0 \times 10^{-6} / 1.0 \times 10^{-6}$
NEP- W/Hz ^{1/2} @ 850nm	$< 1.5 \times 10^{-14}$	$< 1.0 \times 10^{-14}$
Bandwidth (-3dB)- Hz, typ	DC - 500 / 2k	DC - 500 / 2k
Power Requirements	+/- 5 VDC to +/- 15 VDC	
Connections	BNC signal output. Shielded power cable terminated with a DB-9 connector directly couples the unit with the PS / TC-1 Low Noise Power Supply / Controller.	