ThermOptics™

TECHNICAL DATA

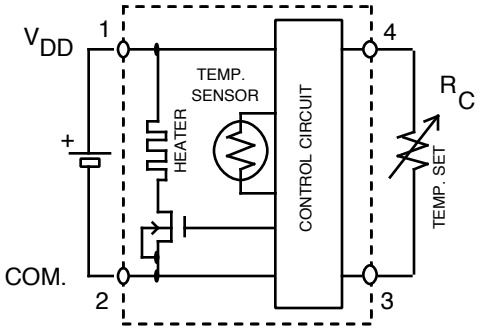
DN-530

Designers' Data Sheet

PROPORTIONALLY CONTROLLED HEATER FOR TO-8 PACKAGES

The DN-530 is a subminiature proportionally controlled heater whose temperature can be programmed with a single external resistor. This device is used for regulating the temperature of sensitive electronic components such as microwave oscillators that are housed in TO-8 packages. The DN-530 can supply up to 9 watts of power from an unregulated 15 volt supply.

HEATER BLOCK DIAGRAM



FEATURES

- ALUMINUM BASE FOR GOOD THERMAL CONDUCTION
- REGULATION TEMPERATURE FROM 5° C ABOVE AMBIENT TO 100° C
- 10 TO 15 VOLT OPERATION
- ELECTRICALLY ISOLATED FROM THE PACKAGE

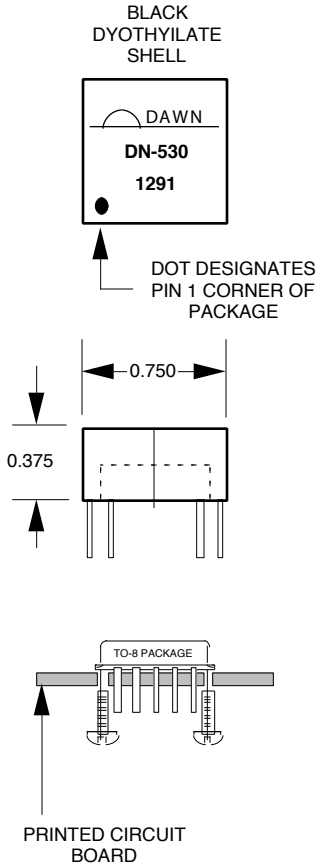
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Supply Voltage	V_{DD}	18	Vdc
Power Dissipation	P_D	16	Watts
Operating Temperature	T_{max}	120	^oC
Storage Temperature	T_{min}	-65 to +150	^oC

OPERATING CHARACTERISTICS

Characteristic	Symbol	Min	Max	Unit
Supply Voltage (Pin 1 to Pin 4)	V_{DD}	+10	+16	Vdc
Steady State Supply Current @ V_{DD} = +15 Vdc	I_S	5.0	700	mAdc
Temperature Variation over Operating Voltage	ΔT_V		2	^oC
Temperature Variation with Load	ΔT_L		6	^oC
Control Temperature Range	T_C	T_A + 5	100	^oC
Control Resistor Value Pin 2 to Pin 3 (See Figure 1)	R_C	0		Ohm
Maximum Control Temperature when R_C= 0 Ohms	T_{max}		120	^oC
Turn on power at start-up @ V_{DD} = + 15 Volts	P_D	9.0		Watts

PACKAGE OUTLINE



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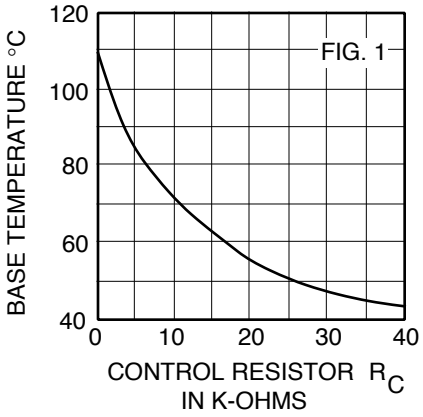
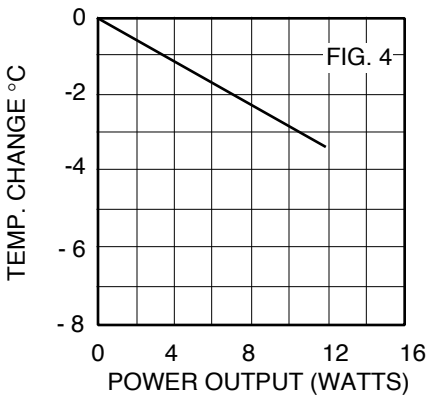
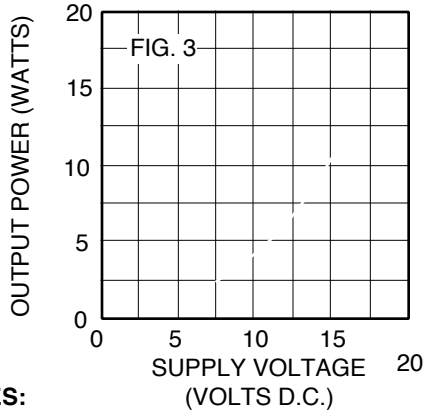
TYPICAL CASE TEMPERATURE VS CONTROL RESISTOR



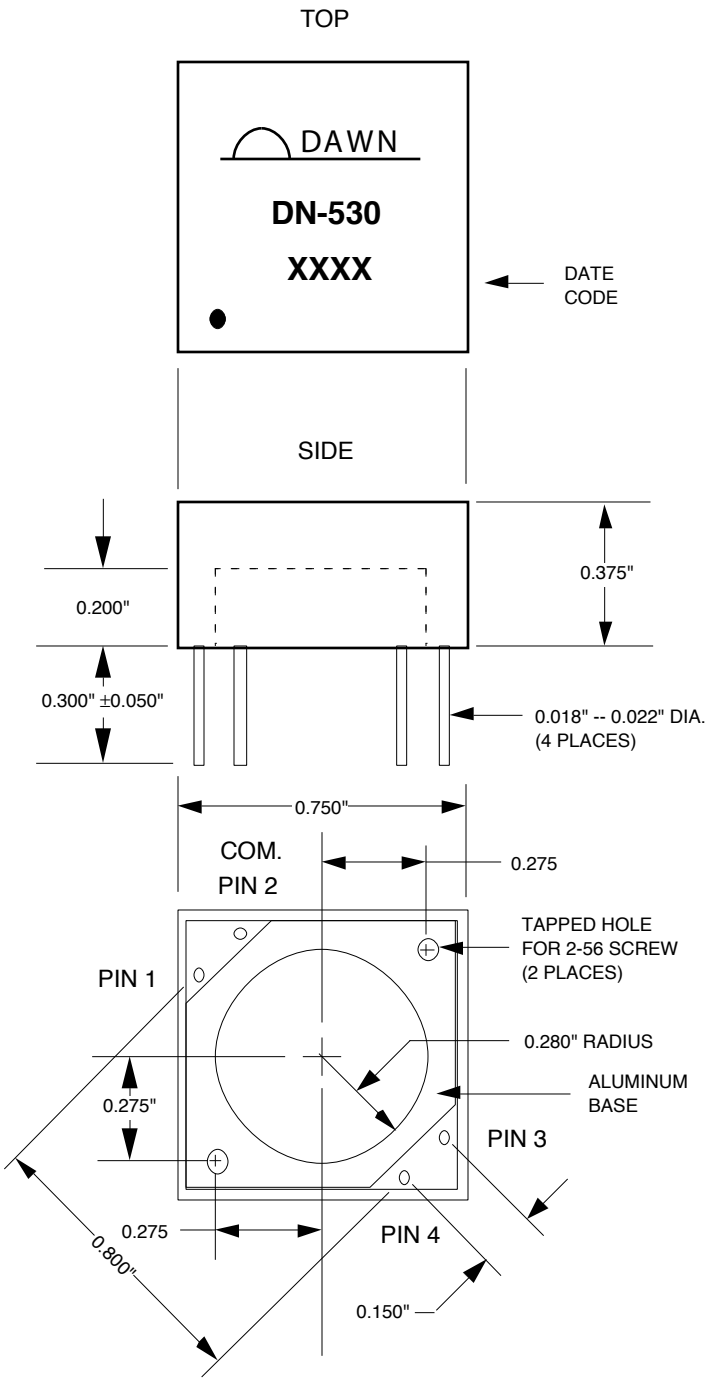
TYPICAL BASE TEMPERATURE CHANGE WITH POWER DISSIPATION



MAX. THERMAL POWER AVAILABLE VS. SUPPLY VOLTAGE



PACKAGE DIMENSIONS



ALL DIMENSIONS ARE IN INCHES

NOTES:

1. Do not reverse the voltage polarity on the input power leads. This can cause permanent damage to the device.
2. Optimum heat transfer between the DN-530 and the TO-8 package being heated occurs when thermal compound, such as Dow Corning 340, is applied to the mounting surface of the heater.

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