DATA SHEET

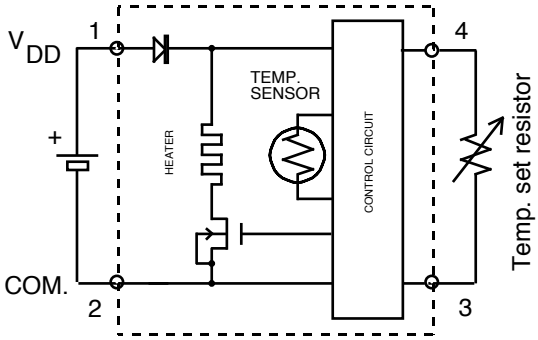
DN515-4830

SUBMINIATURE PROPORTIONALLY CONTROLLED HEATER

GENERAL DESCRIPTION

The DN515-4830 is a subminiature proportionally controlled heater, whose temperature can be programmed with a single external resistor. This device is ideally suited for regulating the temperature of sensitive electronic components such as fiber optic components and crystal oscillators. The DN515-4830 is in a ceramic package and can supply up to 28 Watts of power from an unregulated power supply.

HEATER BLOCK DIAGRAM



FEATURES

- BERYLLIA BASE FOR GOOD THERMAL CONDUCTION
- REGULATION TEMPERATURE FROM 40 °C TO 100 °C
- 48 VOLT OPERATION
- ELECTRICALLY ISOLATED FROM THE CASE

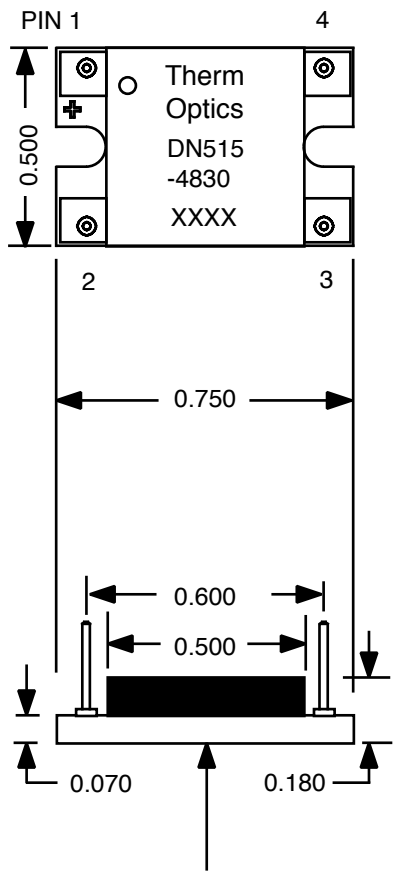
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Supply Voltage	V_{DD}	60	V_{DC}
Reverse Voltage	V_R	-50	V_{DC}
Power Dissipation	P_D	50	Watts
Operating Temperature	T_{max}	120	°C
Storage Temperature	T_{min}	-65 to +150	°C

OPERATING CHARACTERISTICS

Characteristic	Symbol	Min	Max	Unit
Supply Voltage (Pin 1 to Pin 2)	V_{DD}	+35	+60	V_{DC}
Steady State Supply Current @ V_{DD} = +48 V_{DC}	I_S	0.010	0.65	I_{DC}
Temperature Variation over Operating Voltage	ΔT_V		2	°C
Temperature Variation with Load	ΔT_L		10	°C
Control Temperature Range	T_C	50	100	°C
Control Resistor Value Pin 3 to Pin 4 (See Figure 1)	R_C	0		Ω
Maximum Control Temperature when R_C = 0 Ω	T_{max}		120	°C
Turn on power at start-up @ V_{DD} = + 48 Volts	P_D	28	32	Watts

OUTLINE DIMENSIONS



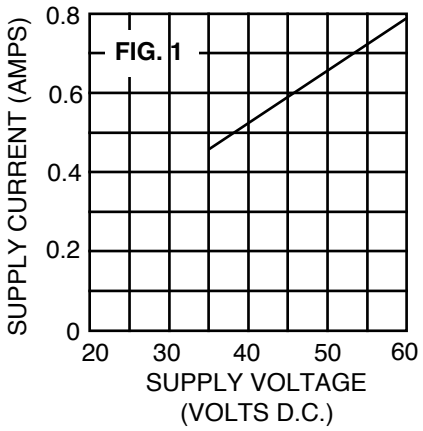
BERYLLIA BASE

TWO TIMES ACTUAL SIZE

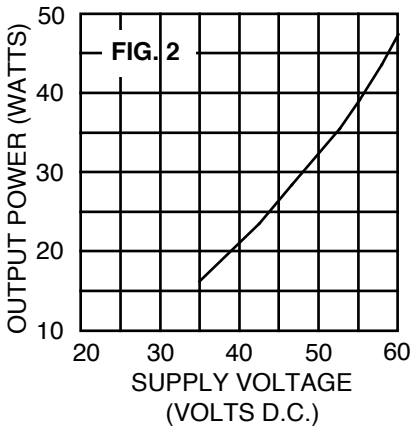
Heater Temperature vs Temperature Set Resistor

T °C	RS KΩ	T °C	RS KΩ	T °C	RS KΩ	T °C	RS KΩ
0	360.1	29	79.6	58	20.2	87	4.6
1	340.6	30	75.8	59	19.3	88	4.4
2	322.3	31	72.2	60	18.4	89	4.1
3	305.0	32	68.8	61	17.5	90	3.9
4	288.7	33	65.5	62	16.7	91	3.6
5	273.4	34	62.5	63	15.9	92	3.4
6	259.0	35	59.5	64	15.2	93	3.2
7	245.4	36	56.8	65	14.5	94	3.0
8	232.5	37	54.1	66	13.8	95	2.8
9	220.4	38	51.6	67	13.2	96	2.6
10	209.0	39	49.2	68	12.5	97	2.4
11	198.3	40	46.9	69	11.9	98	2.2
12	188.1	41	44.8	70	11.4	99	2.0
13	178.5	42	42.7	71	10.8	100	1.8
14	169.4	43	40.7	72	10.3	101	1.68
15	160.8	44	38.9	73	9.8	102	1.52
16	152.7	45	37.1	74	9.3	103	1.37
17	145.1	46	35.4	75	8.9	104	1.23
18	137.8	47	33.8	76	8.4	105	1.09
19	131.0	48	32.3	77	8.0	106	0.95
20	124.5	49	30.8	78	7.6	107	0.82
21	118.3	50	29.4	79	7.2	108	0.70
22	112.5	51	28.1	80	6.8	109	0.58
23	107.0	52	26.8	81	6.5	110	0.46
24	101.8	53	25.5	82	6.1	111	0.35
25	96.9	54	24.4	83	5.8	112	0.25
26	92.2	55	23.2	84	5.5	113	0.14
27	87.8	56	22.2	85	5.2	114	0.04
28	83.6	57	21.2	86	4.9		

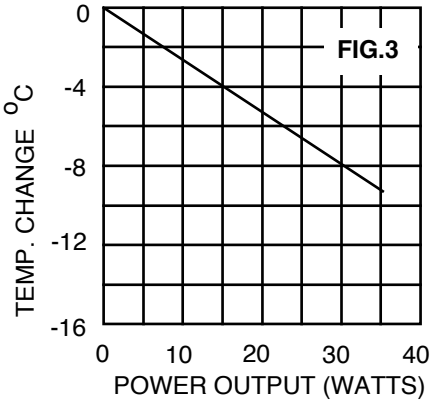
MAX. START UP CURRENT vs. SUPPLY VOLTAGE



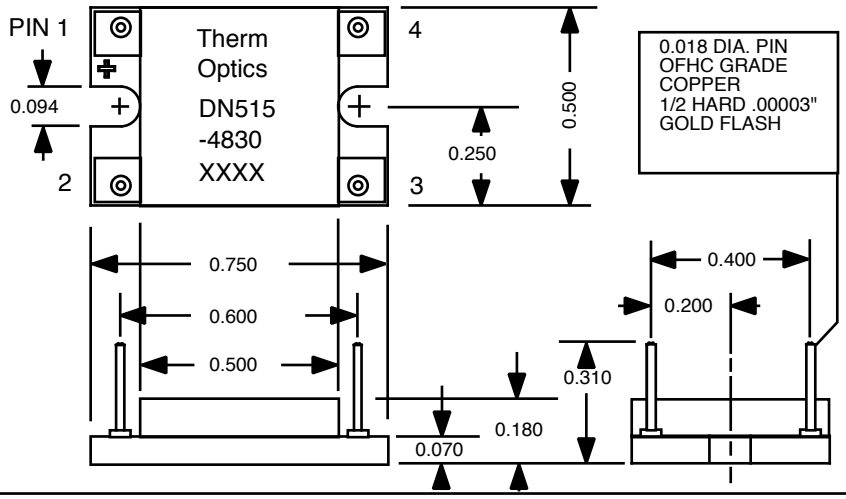
MAX. THERMAL POWER AVAILABLE VS. SUPPLY VOLTAGE



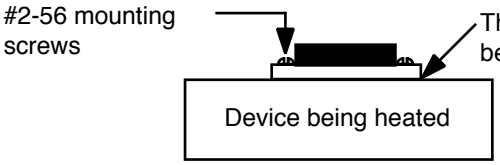
TYPICAL BASE TEMPERATURE CHANGE WITH POWER DISSIPATION



MECHANICAL DIMENSIONS



MOUNTING THE DN515-4830 HEATER



Do not over tighten the mountng screws. This may result in breaking the ceramic substrate.

NOTES:

1. Optimum heat transfer between the DN515-4830 and the device being heated occurs when a thermal compound, such as Dow Corning 340, is applied to the mounting surface of the heater.
2. The DN515-4830 heaters are tested for gross leaks in Fluorocarbon at 125 °C.
3. Operation is possible from 100 °C to 120 °C, however electrical performance is not guaranteed. The input decreases to less than 20 mA when the ambient temperature is 120 °C.
4. Special enviromental testing is available on request.

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