



## Encapsulated Thermal Switches

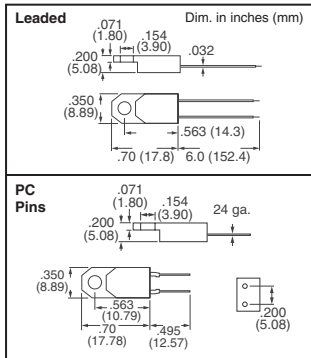
Encapsulated Thermal Switches are ideal for sensing the temperature of a surface or of stagnant air in an enclosure. Available with PC pins or with flexible wire leads for remote installation. Their high temperature resistance and high dielectric strength make it ideal for protecting heatsink-mounted semiconductors. Other applications would be protecting power supplies, or simply turning on a fan at a desired temperature.

**Current Sensitivity:** The thermal switches are not current sensitive at rated currents. At loads above the rated values, up to maximum loading there is self-heating of the current carrying contacts.

**Insulation Resistance:** Leads to Earth: 2500V @ 25°C, 1500V @ 100°C. Across open contacts, dependent on response temperature: 500V eff. AC.

**Marking:** Response temperature in clear text (5°C steps). Normally Closed = blue or black (epoxy); Normally Open = red (epoxy)

UL E46827 CSA LR28044-10 VDE 4523-4510-0702/329CU



## Electrical Specifications

Type	N/C	N/O
Voltage Rating 50 - 60 Hz	120 V / 250 V	120 V / 250 V
Current Rating Resistive	3.0 A / 2.0 A	1 A / 1 A*
Current Rating Inductive	1.8 A / 1.2 A	1 A / 1 A
Max. Load Resistive	4.0 A	4.0 A
Short Circuit Current Up to	6.3 A	6.3 A
Contact Arrangement Normally Closed N/C Normally Open N/O		
Contact Resistance	< 40 mΩ	< 40 mΩ
Response Temperature Range	70°C - 160°C	65°C - 150°C
Tolerance Range	±5°C	±5°C
Max. Permanent Temperature of Housing - G410	220°C	220°C
Housing Material - G410	PPS	PPS
Thermal Conductivity	4.0 BTU - in. / hr. / ft <sup>2</sup> / °F	

\* When N/O contacts are closed, self heating will occur at currents exceeding normal rating. It is possible that, given certain combinations of set temperature current and ambient temperature, the contacts will not reset.

Switch Temp. (°C)	Digi-Key Part No.	Price Each	1	10	50	100	Cantherm Part No.
<b>Thermal Switches With Leads</b>							
<b>Normally Closed</b>							
70	317-1000-ND	4.76	4.17	3.52	2.42		F1107025ACFA06E
75	317-1001-ND	4.76	4.17	3.52	2.42		F1107525ACFA06E
80	317-1002-ND	4.76	4.17	3.52	2.42		F1108025ACFA06E
85	317-1003-ND	4.76	4.17	3.52	2.42		F1108525ACFA06E
90	317-1004-ND	4.76	4.17	3.52	2.42		F1109025ACFA06E
95	317-1005-ND	4.76	4.17	3.52	2.42		F1109525ACFA06E
100	317-1006-ND	4.76	4.17	3.52	2.42		F1110025ACFA06E
105	317-1007-ND	4.76	4.17	3.52	2.42		F1110525ACFA06E
110	317-1008-ND	4.76	4.17	3.52	2.42		F1111025ACFA06E
115	317-1009-ND	4.76	4.17	3.52	2.42		F1111525ACFA06E
120	317-1010-ND	4.76	4.17	3.52	2.42		F1112025ACFA06E
125	317-1011-ND	4.76	4.17	3.52	2.42		F1112525ACFA06E
130	317-1012-ND	4.76	4.17	3.52	2.42		F1113025ACFA06E
135	317-1013-ND	4.76	4.17	3.52	2.42		F1113525ACFA06E
140	317-1014-ND	4.76	4.17	3.52	2.42		F1114025ACFA06E
145	317-1015-ND	4.76	4.17	3.52	2.42		F1114525ACFA06E
150	317-1016-ND	4.76	4.17	3.52	2.42		F1115025ACFA06E
155	317-1017-ND	4.76	4.17	3.52	2.42		F1115525ACFA06E
160	317-1018-ND	4.76	4.17	3.52	2.42		F1116025ACFA06E
<b>Normally Open</b>							
70	317-1019-ND	6.19	5.42	4.56	3.14		F1107015ACFA06E
75	317-1020-ND	6.19	5.42	4.56	3.14		F1107515ACFA06E
80	317-1021-ND	6.19	5.42	4.56	3.14		F1108015ACFA06E
85	317-1022-ND	6.19	5.42	4.56	3.14		F1108515ACFA06E
90	317-1023-ND	6.19	5.42	4.56	3.14		F1109015ACFA06E
95	317-1024-ND	6.19	5.42	4.56	3.14		F1109515ACFA06E
100	317-1025-ND	6.19	5.42	4.56	3.14		F1110015ACFA06E
105	317-1026-ND	6.19	5.42	4.56	3.14		F1110515ACFA06E
110	317-1027-ND	6.19	5.42	4.56	3.14		F1111015ACFA06E
115	317-1028-ND	6.19	5.42	4.56	3.14		F1111515ACFA06E
120	317-1029-ND	6.19	5.42	4.56	3.14		F1112015ACFA06E
125	317-1030-ND	6.19	5.42	4.56	3.14		F1112515ACFA06E

Switch Temp. (°C)	Digi-Key Part No.	Price Each	1	10	50	100	Cantherm Part No.
<b>Thermal Switches With PC Pins</b>							
<b>Normally Closed</b>							
130	317-1031-ND	6.19	5.42	4.56	3.14		F1113015ACFA06E
135	317-1032-ND	6.19	5.42	4.56	3.14		F1113515ACFA06E
140	317-1033-ND	6.19	5.42	4.56	3.14		F1114015ACFA06E
145	317-1034-ND	6.19	5.42	4.56	3.14		F1114515ACFA06E
150	317-1035-ND	6.19	5.42	4.56	3.14		F1115015ACFA06E
<b>Normally Open</b>							
70	317-1038-ND	4.76	4.17	2.78	2.39		F11070251ZA0060
75	317-1039-ND	4.76	4.17	2.78	2.39		F11075251ZA0060
80	317-1040-ND	4.76	4.17	2.78	2.39		F11080251ZA0060
85	317-1041-ND	4.76	4.17	2.78	2.39		F11085251ZA0060
90	317-1042-ND	4.76	4.17	2.78	2.39		F11090251ZA0060
95	317-1043-ND	4.76	4.17	2.78	2.39		F11095251ZA0060
100	317-1044-ND	4.76	4.17	2.78	2.39		F11100251ZA0060
105	317-1045-ND	4.76	4.17	2.78	2.39		F11105251ZA0060
110	317-1046-ND	4.76	4.17	2.78	2.39		F11110251ZA0060
115	317-1047-ND	4.76	4.17	2.78	2.39		F11115251ZA0060
120	317-1048-ND	4.76	4.17	2.78	2.39		F11120251ZA0060
125	317-1049-ND	4.76	4.17	2.78	2.39		F11125251ZA0060
130	317-1050-ND	4.76	4.17	2.78	2.39		F11130251ZA0060
135	317-1051-ND	4.76	4.17	2.78	2.39		F11135251ZA0060
140	317-1052-ND	4.76	4.17	2.78	2.39		F11140251ZA0060
145	317-1053-ND	4.76	4.17	2.78	2.39		F11145251ZA0060
150	317-1054-ND	4.76	4.17	2.78	2.39		F11150251ZA0060
155	317-1055-ND	4.76	4.17	2.78	2.39		F11155251ZA0060
160	317-1056-ND	4.76	4.17	2.78	2.39		F11160251ZA0060
70	317-1321-ND	4.76	4.17	2.78	2.39		F11070253600060
75	317-1322-ND	4.76	4.17	2.78	2.39		F11075253600060
80	317-1323-ND	4.76	4.17	2.78	2.39		F11080253600060
85	317-1324-ND	4.76	4.17	2.78	2.39		F11085253600060
90	317-1325-ND	4.76	4.17	2.78	2.39		F11090253600060
95	317-1326-ND	4.76	4.17	2.78	2.39		F11095253600060
100	317-1327-ND	4.76	4.17	2.78	2.39		F11100253600060
105	317-1328-ND	4.76	4.17	2.78	2.39		F11105253600060
110	317-1329-ND	4.76	4.17	2.78	2.39		F11110253600060
115	317-1330-ND	4.76	4.17	2.78	2.39		F11115253600060
120	317-1331-ND	4.76	4.17	2.78	2.39		F11120253600060
125	317-1332-ND	4.76	4.17	2.78	2.39		F11125253600060
130	317-1333-ND	4.76	4.17	2.78	2.39		F11130253600060
135	317-1334-ND	4.76	4.17	2.78	2.39		F11135253600060

Switch Temp. (°C)	Digi-Key Part No.	Price Each	1	10	50	100	Cantherm Part No.
<b>Normally Open</b>							
140	317-1333-ND	4.76	4.17	2.78	2.39		F11140253600060
145	317-1334-ND	4.76	4.17	2.78	2.39		F11145253600060
150	317-1335-ND	4.76	4.17	2.78	2.39		F11150253600060
155	317-1336-ND	4.76	4.17	2.78	2.39		F11155253600060
160	317-1337-ND	4.76	4.17	2.78	2.39		F11160253600060
<b>Normally Open</b>							
70	317-1057-ND	6.19	5.42	3.61	3.10		F11070152ZA0060
75	317-1060-ND	6.19	5.42	3.61	3.10		F11085152ZA0060
80	317-1061-ND	6.19	5.42	3.61	3.10		F11090152ZA0060
85	317-1066-ND	6.19	5.42	3.61	3.10		F11115152ZA0060
90	317-1068-ND	6.19	5.42	3.61	3.10		F11125152ZA0060
100	317-1069-ND	6.19	5.42	3.61	3.10		F11130152ZA0060
105	317-1070-ND	6.19	5.42	3.61	3.10		F11135152ZA0060
110	317-1071-ND	6.19	5.42	3.61	3.10		F11140152ZA0060
115	317-1072-ND	6.19	5.42	3.61	3.10		F11145152ZA0060
120	317-1073-ND	6.19	5.42	3.61	3.10		F11150152ZA0060
125	317-1074-ND	6.19	5.42	3.61	3.10		F11155152ZA0060
130	317-1075-ND	6.19	5.42	3.61	3.10		F11160152ZA0060
95	317-1320-ND	6.19	5.42	3.61	3.10		F11095153600060
85	317-1342-ND	6.19	5.42	3.61	3.10		F11085153600060
90	317-1343-ND	6.19	5.42	3.61	3.10		F11090153600060
100	317-1344-ND	6.19	5.42	3.61	3.10		F11100153600060
105	317-1345-ND	6.19	5.42	3.61	3.10		F11105153600060
110	317-1346-ND	6.19	5.42	3.61	3.10		F11110153600060
115	317-1347-ND	6.19	5.42	3.61	3.10		F11115153600060
120	317-1348-ND	6.19	5.42	3.61	3.10		F11120153600060
125	317-1349-ND	6.19	5.42	3.61	3.10		F11125153600060
130	317-1350-ND	6.19	5.42	3.61	3.10		F11130153600060
135	317-1351-ND	6.19	5.42	3.61	3.10		F11135153600060
140	317-1352-ND	6.19	5.42	3.61	3.10		F11140153600060
145	317-1353-ND	6.19	5.42	3.61	3.10		F11145153600060
150	317-1354-ND	6.19	5.42	3.61	3.10		F11150153600060

## Bi-metal Cutouts / Temperature Regulators / Temperature Limiters



The thermal response works a bimetal snap element electrically connected to the switch contact. The switch system is current insensitive. The thermal switches react only to external thermal effects. Double contacts ensure high switch performance and long service life. The housing, base, and the mounting brackets are voltage-free (Standard version: base and mounting brackets are aluminum-plated steel). Heat transfer occurs directly through the metallic base via convection, radiation and conduction in gaseous and solid media. The mounting flange is floating and can be rotated to any desired position with respect to the electrical terminals. **Please note: Reset temperature will be between 5°C ~ 50°C below the standard response temperature.**

### ADVANTAGES:

- High pressure resistance
- High response sensitivity
- Numerous applications
- Various housings, connections and mounting styles

UL E48909 CSA LR85477-1 VDE 4523-4610-1008

### Electrical Specifications

Voltage Rating 50-60Hz	120V / 250V
Current Rating Resistive	15A / 10.0A
Current Rating Inductive	6.3A
Maximum Load Resistive	20A / 16A
Contact Resistance	< 50mΩ
Nominal Temperature Range	0°C ~ 170°C