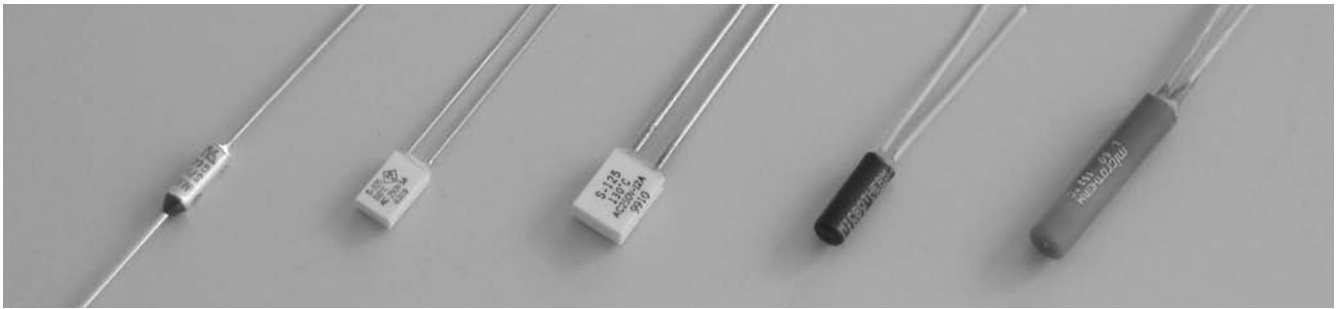


THERMALLINKS

THERMAL LINKS TL

THERMALLINKS



DESCRIPTION

Thermal links (TL) are components which will automatically open a circuit and switch off an appliance, if the permissible operating temperature of the appliance is exceeded.

The nominal response temperature can only be set by the manufacturer. In order to repair the circuit, the complete thermal link must be replaced.

Thermal links have a solid, dust and dirt-tight housing.

INSTALLATION TIPS

To ensure loss-free heat transfer, installation or mounting should be directly onto the heat source. When soldering onto the electrical connections, care must be taken to provide appropriate heat-sinking (e.g. heat-conducting pliers). A thermal link cannot be repaired. In case of replacement, it is important to use only the same link with the same characteristics, and it must be installed or mounted in exactly the same way.

Thermal links are partly sealed against varnish. Connections: wire, push-on terminals or connections formed to specification, e.g. flexible leads, on request.

APPLICATIONS

As a thermal link (TL) in electrical appliances and equipment, electrical plant and machinery.

They react to ambient temperature and are, under certain conditions, sensitive to current at rated levels. Self-heating by current passing through the thermal link must be taken into consideration. Thermal links with forced air cooling are suited for higher current ratings. Please ask.

To avoid possible damage of the thermal link, it is advisable to use sealing resins, impregnation fluids or cleaning solvents only after having consulted the manufacturer.

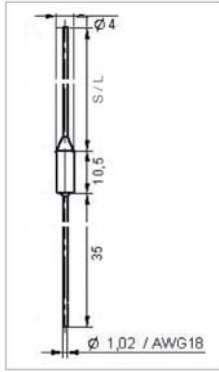
MICROTHERM



Microtherm International Cooperation



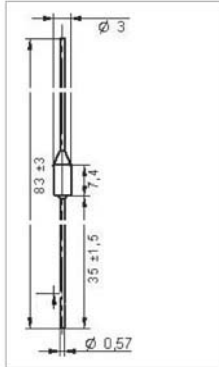
Version:
S = short 25.4 x 35 mm
L = long 35 x 35 mm



DF 15A	250 V/AC											Dy
Type	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF
Temperature Tf °C	66	72	77	84	91	98	100	104	110	119	128	141
Temperature Tc °C	42	50	55	60	67	76	78	80	86	95	106	117
Temperature Tm °C	110	115	120	125	135	140	138	150	140	170	155	171
Type	DF	DF	DF	DF	DF	DF	DF	DF				
Temperature Tf °C	144	152	170	184	192	216	228	240				
Temperature Tc °C	120	128	146	160	162	191	193	200				
Temperature Tm °C	250	176	300	300	290	241	300	290				



E7F



S3M Types **Td**

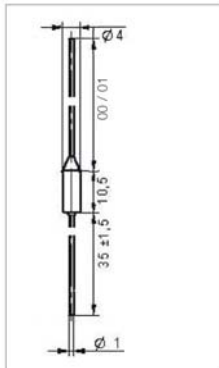
Operating Temperature Summary

Open Temp Tf °C	Holdig Temperature Tc °C				Maximum Overshoot Temperature Tm °C			
	E4A	E5A	E7F	E8A	E4A	E5A	E7F	E8A
070	55	55	55	45	130	175	125	175
072	57	57		47	100	175		175
077	62	62	62	52	125	200	125	200
084	69	69	69	59	125	200	125	200
093	78	78	78	68	140	215	140	215
098	83	83	83	73	140	215	140	215
100	85	85	85		140	215	130	
104	89	89		79	150	225		225
110	95	95	95	85	150	225	140	225
117	102	102	102	92	160	235	150	235
121	106	106	106	96	160	235	150	235
128	113	113	113	103	160	235	150	235
144	129	129	129	119	175	250	175	250
152	137	137			175	250	175	
167	152	152	152	142	210	285	200	285
172	157	157	157		240	350	200	
184	169	169	169	159	210	350	200	350
190	175	175	175		310	350	270	
192	177	177	177	167	210	350	210	350
205	189	189			310	375		
216	200	200			375	375		
229	200	200		200	375	375		375
240	200	200		200	450	375		375



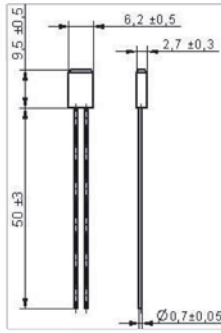
Version:
00 = short 18 x 35 mm
01 = long 35 x 35 mm

E4A, E5A, E8A



Electrical Rating Summary

Agency	Electrical Current & Voltage Rating							
	E4A		E5A		E7A		E8A	
	Resistive	Inductive	Resistive	Inductive	Resistive	Inductive	Resistive	Inductive
UL/CSA	10A/250VAC 15A/120VAC 5A/24VDC	8A/250VAC 14A/120VAC	20A/250VAC 25A/120VAC 21A/240VAC 20A/277VAC		5A/250VAC 5A/120VAC 5A/24VDC	4,5A/250VAC 4,5A/120VAC	25A/250VAC	
VDE	10A/250VAC 15A/120VAC 5A/24VDC	8A/250VAC 14A/120VAC	20A/250VAC		5A/250VAC 5A/24VDC	4,5A/250VAC 4,5A/120VAC	25A/250VAC	



MTS1 5 A

250 V/AC Wt

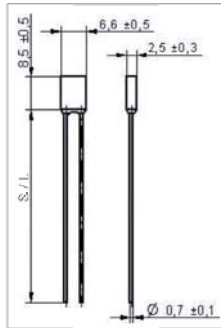
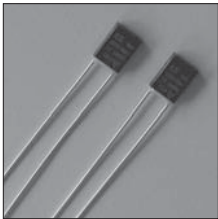
Type	S95	S105	S125	S138	S145
Temperature Tf °C	100	110	130	143	150
Temperature Tc °C	70	80	100	110	120
Temperature Tm °C	180	180	180	180	180



MTR1 3 A

250 V/AC Wt

Type	R-95	R-105	R-125	R-138	R-145
Temperature Tf °C	98	108	130	143	150
Temperature Tc °C	70	80	100	110	120
Temperature Tm °C	180	180	180	180	180

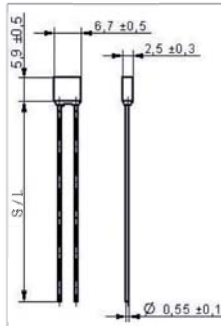


MTEF 3 A

250 V/AC Ad

Type	E06F	E0F	E1F	E2F	E3F	E4F	E13F	E5F	E6F	E7F
Temperature Tf °C	65	76	86	102	115	127	133	136	139	145
Temperature Tc °C	50	55	65	70	90	95	95	95	105	115
Temperature Tm °C	200	200	200	200	200	200	200	200	200	200

Version:
S = short 36+/-3
L = long 65+/-3

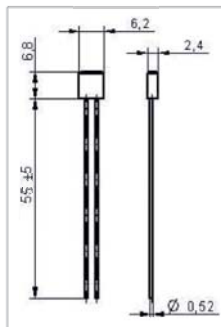


MTHF

250 V/AC Ad

Type	2,5A	2,5A	2,5A	3A	3A	3A	3A	3A	2,5A	2A
Temperature Tf °C	65	76	86	102	115	127	133	136	139	145
Temperature Tc °C	50	50	60	75	95	100	100	100	110	115
Temperature Tm °C	200	200	200	200	200	200	200	200	200	200

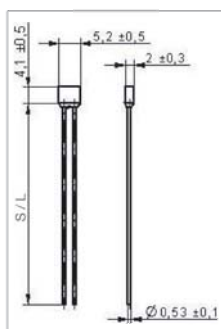
Version:
S = short 36+/-3
L = long 68+/-3



MTML 2 A

250 V/AC Jf

Type	L10	L20	L30	L33
Temperature Tf °C	102	115	125	130
Temperature Tc °C	75	85	90	100
Temperature Tm °C	165	165	165	165

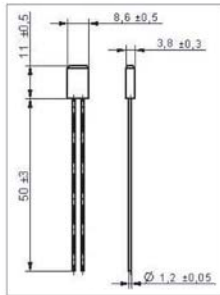


MTNF 1 A

250 V/AC Ad

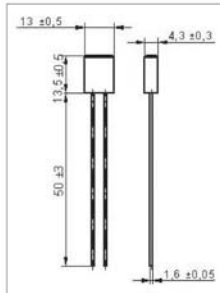
Type	N06F	N0F	N1F	N2F	N3F	N4F	N13F	N5F	N6F	N7F
Temperature Tf °C	65	76	86	102	115	127	133	136	139	145
Temperature Tc °C	55	55	65	80	95	105	105	110	120	125
Temperature Tm °C	200	200	200	200	200	200	200	200	200	200

Version:
S = short 36+/-3
L = long 68+/-3



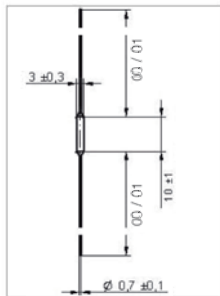
MWS1 15 A 250 V/AC **Wt**

Type	S95H	S105H	S125H	S138H	S145H
Temperature Tf °C	100	110	130	143	150
Temperature Tc °C	70	80	100	110	120
Temperature Tm °C	180	180	180	180	180



MWS2 20 A 250 V/AC **Wt**

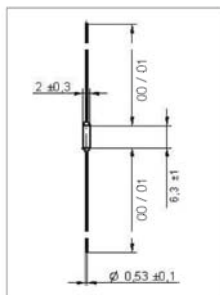
Type	S95	S105	S125	S138	S145
Temperature Tf °C	100	110	130	143	150
Temperature Tc °C	70	80	100	110	120
Temperature Tm °C	180	180	180	180	180



MTYF 250 V/AC **Ad**

Type	4A Y06	5A Y0F	5A Y1F	5A Y2F	4A Y3F	5A Y4F	5A Y13F	5A Y5F	4A Y6F	3,5A Y7F
Temperature Tf °C	65	76	86	102	115	127	133	136	139	145
Temperature Tc °C	45	55	60	70	90	100	100	105	115	125
Temperature Tm °C	200	200	200	200	200	200	200	200	200	200

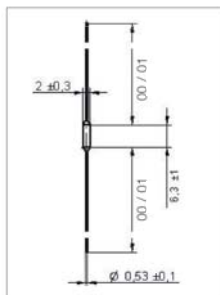
Version:
00 = short 38+/-3
01 = long 68+/-3



MTTF 2 A 250 V/AC **Ad**

Type	T2F	T3F	T4F	T13F	T5F	T6F
Temperature Tf °C	102	115	127	133	136	139
Temperature Tc °C	75	95	110	105	105	120
Temperature Tm °C	200	200	200	200	200	200

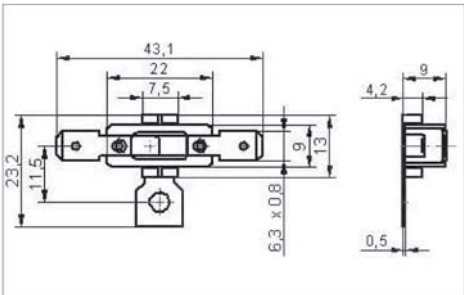
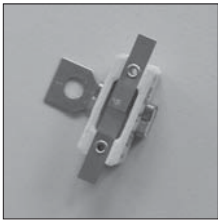
Version:
00 = short 38+/-3
01 = long 68+/-3



MTKF 1 A 250 V/AC **Ad**

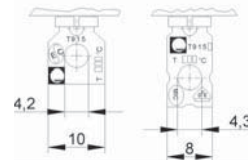
Type	T06F	T0F	T1F	K2F	K3F	K4F	K13F	K5F	K6F	K7F
Temperature Tf °C	65	76	86	102	115	127	133	136	139	145
Temperature Tc °C	50/55	55	60	80	99	110	110	115	120	125
Temperature Tm °C	200	200	200	200	200	200	200	200	200	200

Version:
00 = short 38+/-3
01 = long 68+/-3



TS1* 7 A 250 V/AC **Mi**

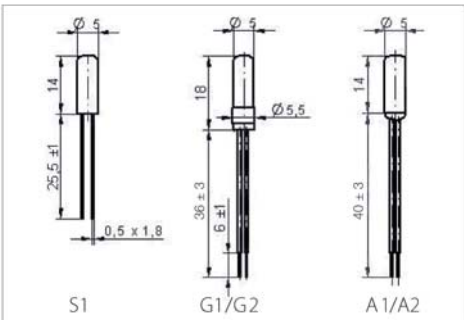
Fixing lug: Version 1 No. 11 steel Version 1 Version 2 Version 2 No. 21 steel



Connections: No. 10 Weldable connection steel, No. 20 Push-on terminal 6.3 x 0.8 steel, No. 40 Push-on terminal 4.8 x 0.8 steel

Type	915	915	915
Temperature Tf °C	238	308	335
Temperature Tc °C	200	260	290
Temperature Tm °C	350	460	460

* Manufacture to MIC Standard

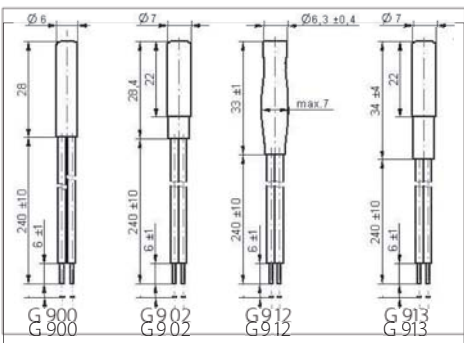


L10* 3 A, 8 A 250 V/AC **Mi**

Version:
 3.0 A: A1=L330 0.24 mm² white
 3.0 A: A2=L430 0.51 mm yellow
 8.0 A: S=000 push-on terminal 1.8 x 0.5 mm
 8.0 A: G1=G911 + L340 0.62 mm² white
 8.0 A: G2=G911 + L440 0.81 mm yellow

Type	L10	L10	L10	L10	L10	L10	L10	L10	L10	L10	L10
Temperature Tf °C	71	77	85	90	100	108	118	130	140	150	165
Temperature Tc °C	55	55	55	60	70	78	88	100	110	120	135
Temperature Tm °C	175	175	175	175	175	175	175	175	175	175	175

* Manufacture to MIC Standard



L50 5 A, 10 A, 20 A, 25 A 250 V/AC **Md**

Version:
 5.0 A: E7 G900/G902 184 °C solid wire 0.5 mm² yellow
 G912/G913 240 °C
 10.0 A: E4 G900/G902 184 °C solid wire 1.0 mm² yellow
 G912/G913 240 °C
 20.0 A: E5 G900/G902 184 °C solid wire 1.0 mm² yellow
 G912/G913 240 °C
 25.0 A: E8 G900/G902 184 °C solid wire 1.0 mm² yellow
 G912/G913 240 °C

Temperature parameters see on page 2 Type S3M 5A, S3M 10A, S3M 20A, S3M 25A

Technical Data according to Standard EN60691

Type Sales- designation	Current/Voltage 250 V 50/60 Hz		Rated functioning temperature Tf °C	Tolerance	Standard- connections/Version
	cos phi 1.0	cos phi 0.6			
DF	15 A		66 up to 240	+0 - 5 K	wire ø 1.0 mm
S3M 5A	5 A	4,5 A	70 up to 205	+0 - 5 K	wire ø 0.6 mm
S3M 10A	10 A	8,0 A	70 up to 240	+0 - 5 K	wire ø 1.0 mm
S3M 20A	20 A		70 up to 240	+0 - 5 K	wire ø 1.0 mm
S3M 25A	25 A		70 up to 240	+0 - 5 K	wire ø 1.0 mm
MTS1	5 A		100 up to 150	+0-10 K	wire ø 0.7 mm
MTR1	3 A		98 up to 150	+0-10 K	wire ø 0.6 mm
MTEF	3 A		65 up to 145	+0-10 K	wire ø 0.7 mm
MTHF	2 A		65 up to 145	+0-10 K	wire ø 0.55 mm
MTML	2 A		102 up to 130	+0-10 K	wire ø 0.52 mm
MTNF	1 A		65 up to 145	+0-10 K	wire ø 0.53 mm
MWS1	15 A		100 up to 150	+0-10 K	wire ø 1.2 mm
MWS2	20 A		100 up to 150	+0-10 K	wire ø 1.6 mm
MTYF	4 A		65 up to 145	+0-10 K	wire ø 0.7 mm
MTTF	2 A		102 up to 139	+0-10 K	wire ø 0.53 mm
MTKF	1 A		65 up to 145	+0-10 K	wire ø 0.53 mm
TS1*	7 A		238 up to 335	+0-10 K	weldable connection, push-on terminal
L10*	3 A/8 A	6.3 A	71 up to 165	+0-10 K	silver-plated copper flat, section 1.8 x 0.5 leads 0.25 mm ² or 0.5 mm ² or wire ø 0.8 mm
L50	5 A/10 A/20 A/25 A		70 up to 240	+0 - 5 K	silicone insulated wire conductors ø 1.0 mm

Thermal links on tape or with insulated wire. Please request.

* Products to MIC Standard.

Explanation of the Abbreviations

TL Thermal link, a device which cannot be reset, which will open a circuit only one time after having been exposed, for a minimum period of time, to a higher temperature than that for which it has been set.

Tf Rated functioning temperature is the temperature at which the thermal link cuts off under determined conditions.

Tc Holding temperature is the highest temperature at which the thermal link does not change its circuit during a determined period and under determined conditions. The temperature ratings Tc mentioned here are only recommendations. They can be reduced or increased depending on the application.

Tm Maximum temperature limit is the temperature determined by the manufacturer below which the mechanical and electrical parameters of the thermal link are not affected during a determined period after the change of the circuit.

Minimum rate of temperature change 0.5K/min., maximum rate 1.0K/min. Information on currents I_i, I_b, I_p on request. Information on other voltages on request.

Standard Quality / Approvals

These thermal links comply with international standards EN 60691 for Thermal Links (TL) and undergo continuous checks in production. Production item testing, voltage testing. Specific application documentation and approval details are available on request.

Ordering Example

Quantity	Sales Designation	Type	Version	Temperature °C - Tf	Designation
10.000	S3M	E4A	00	117	E4A00 117 C



We reserve the right to change specifications and availability without prior notice.

Company Address:

Microtherm CZ s.r.o
17. listopadu 226, 549 54 Police nad Metují
Czech Republic

Phone: +420 491 549 333, Fax: +420 491 541 778
Http: www.microtherm.cz
E-MAIL: mic@microtherm.cz