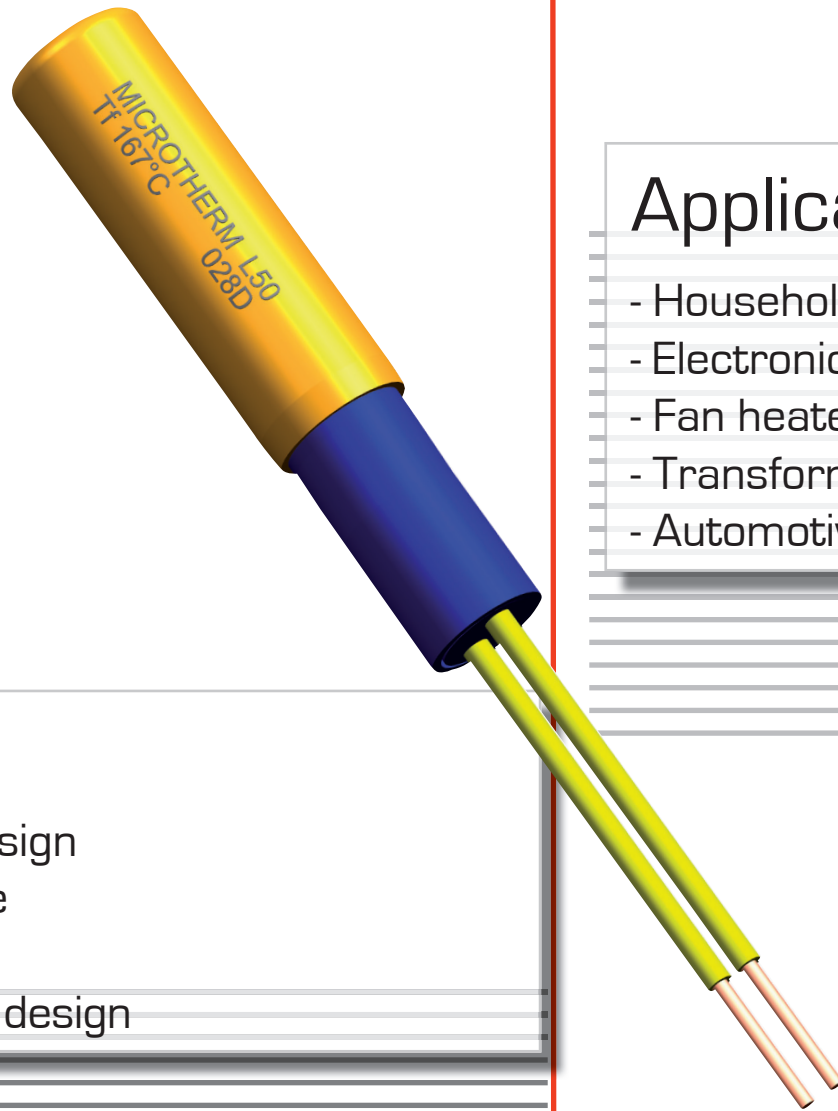


# Thermal Cut-Off

HDM  
L10  
L50  
MTEF  
MTHF  
MTKF  
MTML  
MTNF  
MTR1  
MTS1  
MTTF  
MTYF  
MWS  
SDF  
S3M

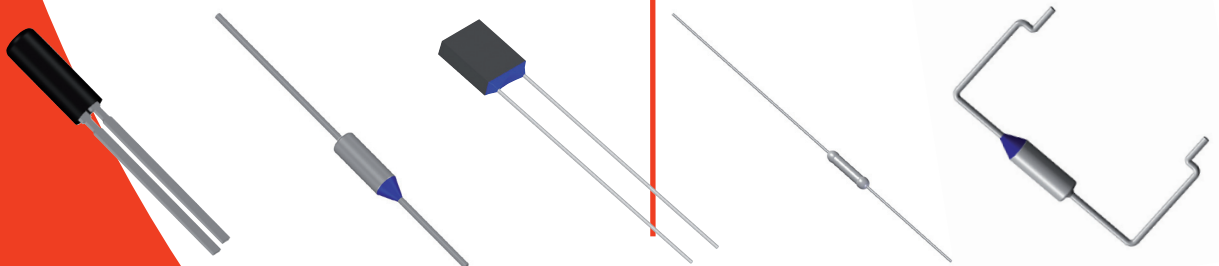
## Applications

- Household appliances
- Electronic appliances
- Fan heaters
- Transformers
- Automotive industry



## Benefits

- Small compact design
- Broad product line
- Dust-proof design
- Customer-specific design


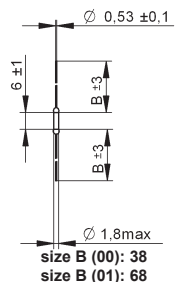
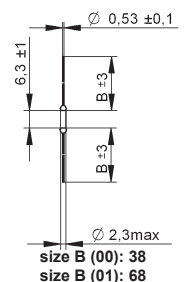
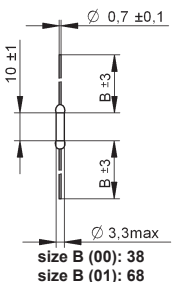


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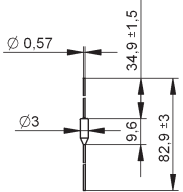
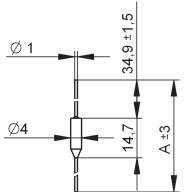
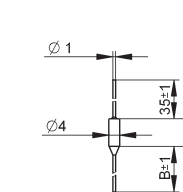
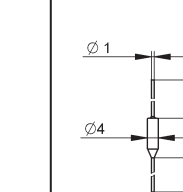
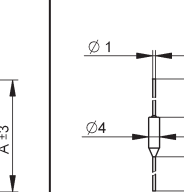
Microtherm International Cooperation

# Thermal Cut-Off 250 Vac


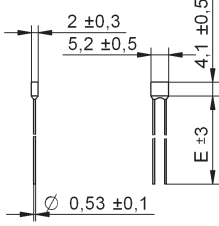
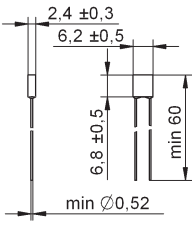
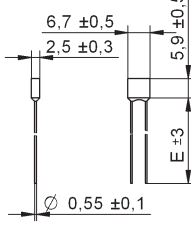
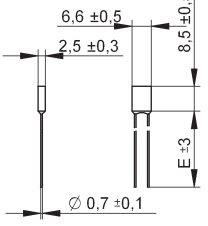
	MTKF 1A	MTTF 1/2A	MTYF 4/5A						
 ceramic housing									
<b>temperature rating (°C)</b>									
<b>T<sub>f</sub></b>	<b>type</b>	<b>T<sub>h</sub></b>	<b>T<sub>m</sub></b>	<b>type</b>	<b>T<sub>h</sub></b>	<b>T<sub>m</sub></b>	<b>type</b>	<b>T<sub>h</sub></b>	<b>T<sub>m</sub></b>
65	K06F	55	200	T06F	50	200	Y06 <sup>1)</sup>	45	200
76	-	-	-	T0F	55	200	Y0F	55	200
86	-	-	-	T1F	60	200	Y1F	60	200
102	K2F	80	200	T2F	75	200	Y2F	70	200
115	K3F	99	200	T3F	95	200	Y3F	90	200
127	K4F	110	200	T4F	110	200	Y4F	100	200
133	K13F	110	200	T13F	105	200	Y13F	100	200
136	K5F	115	200	T5F	105	200	Y5F	105	200
139	K6F	120	200	T6F	120	200	Y6F	115	200
145	K7F	125	200	-	-	-	Y7F	125	200
tolerance (K)	0 / -10			0 / -10			0 / -10		
wire (mm)	Ø 0.53			Ø 0.53			Ø 0.70		

<b>T<sub>f</sub></b>	<b>Functioning open temperature.</b>
<b>T<sub>h</sub></b>	<b>Holding temperature:</b> Maximum continuous exposure temperature during operation.
<b>T<sub>m</sub></b>	<b>Maximum overshoot temperature:</b> Above this temperature the TCO might conduct again.


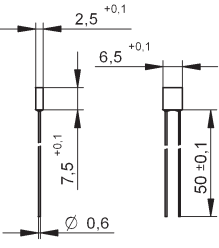
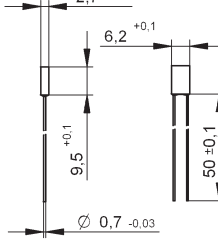
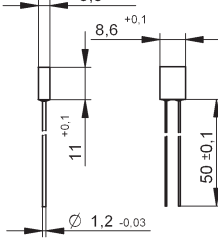
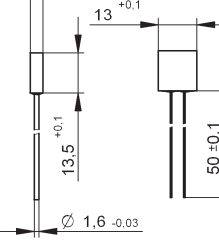
All current ratings relate to resistive loads.

	S3M7 5A	S3M4 10A	SDFS/SDFL 15A	S3M5 20A	S3M8 25A											
 metal housing																
		size A (00): 63.8 size A (01): 82.9	size B (S): 25.4 size B (L): 35	size A (00): 63.8 size A (01): 82.9	size A (00): 63.8 size A (01): 82.9											
<b>temperature rating (°C)</b>																
<b>T<sub>f</sub></b>	<b>type</b>	<b>T<sub>h</sub></b>	<b>T<sub>m</sub></b>	<b>type</b>	<b>T<sub>h</sub></b>	<b>T<sub>m</sub></b>	<b>type</b>	<b>T<sub>h</sub></b>	<b>T<sub>m</sub></b>	<b>type</b>	<b>T<sub>h</sub></b>	<b>T<sub>m</sub></b>				
66	-	-	-	-	-	-	DF	42	110	130	-	-				
70	E7F	55	125	E4A	55	130	-	-	-	-	E5A	55	175	E8A	45	175
72	-	-	-	E4A	57	100	DF	50	115	110	E5A	57	175	E8A	47	175
77	E7F	62	125	E4A	62	125	DF	55	120	110	E5A	62	200	E8A	52	200
84	E7F	69	125	E4A	69	125	DF	60	125	114	E5A	69	200	E8A	59	200
91	-	-	-	-	-	-	DF	67	135	121	-	-	-	-	-	-
93	E7F	78	140	E4A	78	140	-	-	-	-	E5A	78	215	E8A	68	215
98	E7F	83	140	E4A	83	140	DF	76	140	130	E5A	83	215	E8A	73	215
100	E7F	85	130	E4A	85	140	DF	78	135	250	E5A	85	215	-	-	-
104	-	-	-	E4A	89	150	DF	80	150	150	E5A	89	225	E8A	79	225
110	E7F	95	140	E4A	95	150	DF	88	140	140	E5A	95	225	E8A	85	225
117	E7F	102	150	E4A	102	160	-	-	-	-	E5A	102	235	E8A	92	235
119	-	-	-	-	-	-	DF	95	170	170	-	-	-	-	-	-
121	E7F	106	150	E4A	106	160	-	-	-	-	E5A	106	235	E8A	96	235
128	E7F	113	150	E4A	113	205	DF	106	155	155	E5A	113	235	E8A	103	235
141	-	-	-	-	-	-	DF	117	171	171	-	-	-	-	-	-
144	E7F	129	175	E4A	129	240	DF	120	250	250	E5A	129	250	E8A	119	250
152	E7F	137	175	E4A	137	205	DF	128	176	175	E5A	137	250	E8A	127	250
167	E7F	152	200	E4A	152	240	-	-	-	-	E5A	152	285	E8A	142	285
170	-	-	-	-	-	-	DF	146	300	190	-	-	-	-	-	-
172	E7F	157	200	E4A	157	240	-	-	-	-	E5A	157	350	-	-	-
184	E7F	169	200	E4A	169	210	DF	160	300	214	E5A	169	350	E8A	159	350
190	E7F	175	270	E4A	175	310	-	-	-	-	E5A	175	350	-	-	-
192	-	-	-	E4A	177	210	DF	162	290	222	E5A	177	350	E8A	167	350
205	-	-	-	E4A	189	310	-	-	-	-	E5A	189	375	-	-	-
216	-	-	-	E4A	200	375	DF <sup>1)</sup>	191	241	-	E5A	200	375	-	-	-
228	-	-	-	-	-	-	DF	193	300	300	-	-	-	-	-	-
229	-	-	-	E4A	200	375	-	-	-	-	E5A	200	375	E8A	200	375
240	-	-	-	E4A	200	450	DF	200	290	260	E5A	200	375	E8A	200	375
tolerance (K)	0 / -5		0 / -5		0 / -5		0 / -5		0 / -5		0 / -5					
wire (mm)	Ø 0.57		Ø 1.0		Ø 1.02 / AWG18		Ø 1.0		Ø 1.0		Ø 1.0					

<sup>1)</sup> VDE approved only

	MTNF 1A	MTML 2A	MTHF 2A	MTEF 3A
				
plastic housing	size E (S): 36 size E (L): 68	housing: white	size E (S): 36 size E (L): 68	size E (S): 36 size E (L): 65

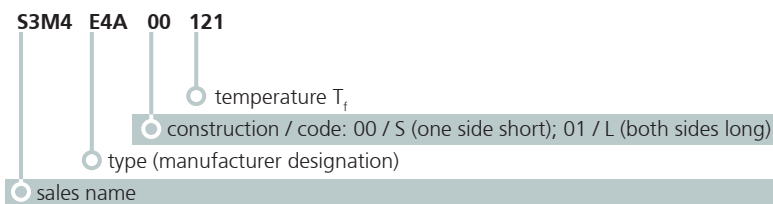
temperature rating (°C)												
T <sub>f</sub>	type	T <sub>h</sub>	T <sub>m</sub>	type	T <sub>h</sub>	T <sub>m</sub>	type	T <sub>h</sub>	T <sub>m</sub>	type	T <sub>h</sub>	T <sub>m</sub>
65	N06F <sup>1)</sup>	50	200	-	-	-	H06F	50	200	E06F	50	200
76	N0F	50	200	-	-	-	H0F	50	200	E0F	55	200
86	N1F	60	200	-	-	-	H1F	60	200	E1F	65	200
102	N2F	75	200	L10	75	165	H2F	75	200	E2F	70	200
115	N3F	95	200	L20	85	165	H3F	95	200	E3F	90	200
125	-	-	-	L30	90	165	-	-	-	-	-	-
127	N4F	105	200	-	-	-	H4F	100	200	E4F	95	200
130	-	-	-	L33	100	165	-	-	-	-	-	-
133	N13F	105	200	-	-	-	H13F <sup>1)</sup>	100	200	E13F	95	200
136	N5F	100	200	-	-	-	H5F	100	200	E5F	95	200
139	N6F	110	200	-	-	-	H6F	110	200	E6F	105	200
145	N7F	125	200	-	-	-	H7F	110	200	E7F	115	200
tolerance (K)	0 / -10			0 / -10			0 / -10			0 / -10		
wire (mm)	Ø 0.53			Ø 0.52			Ø 0.55			Ø 0.70		

	MTR1 3A <sup>2)</sup>	MTS1 5A	MWS1 15A	MWS2 20A
				

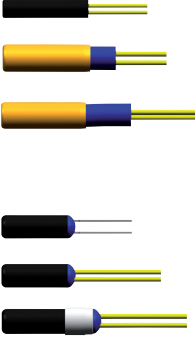
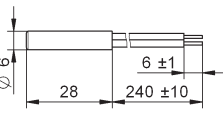
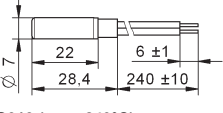
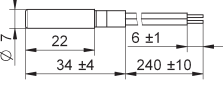
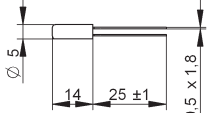
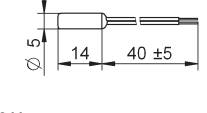
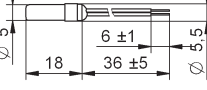

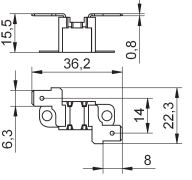
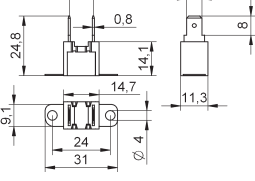
temperature rating (°C)												
T <sub>f</sub>	type	T <sub>h</sub>	T <sub>m</sub>	type	T <sub>h</sub>	T <sub>m</sub>	type	T <sub>h</sub>	T <sub>m</sub>	type	T <sub>h</sub>	T <sub>m</sub>
98	R-95	70	180	-	-	-	-	-	-	-	-	-
100	-	-	-	S95 <sup>3)</sup>	70	180	S95H <sup>3)</sup>	70	180	S95 <sup>3)</sup>	70	180
108	R-105	80	180	-	-	-	-	-	-	-	-	-
110	-	-	-	S105 <sup>2)</sup>	80	180	S105H <sup>2)</sup>	80	180	S105 <sup>3)</sup>	80	180
130	R-125	100	180	S125 <sup>2)</sup>	100	180	S125H <sup>3)</sup>	100	180	-	-	-
143	-	-	-	S138 <sup>2)</sup>	110	180	-	-	-	-	-	-
150 (not RoHS compliant)	-	-	-	-	-	-	S145H <sup>3)</sup>	120	180	S145 <sup>3)</sup>	120	180
tolerance (K)	0 / -10			0 / -10			0 / -10			0 / -10		
wire (mm)	Ø 0.60			Ø 0.70			Ø 1.20			Ø 1.60		

<sup>1)</sup> VDE approved only    <sup>2)</sup> UL approved only    <sup>3)</sup> not approved

## Ordering example



# Thermal Cut-Off 250 Vac

	L50N <sup>1)</sup> 5/10/20/25A	L10N <sup>1)</sup> 3/8A		HDMV, HDMH 15A <sup>2)</sup>
 <p>Plastic or metal housing</p>	<p>L50NG900 (max. 184 °C)</p>  <p>L50NG902 (max. 184 °C)</p>  <p>L50NG913 (max. 240 °C)</p> 	<p>L10N</p>  <p>L10N</p>  <p>L10NG911</p> 		<p>HDMV</p>  <p>HDMH</p> 

## temperature rating (°C)

T <sub>f</sub>	type	T <sub>h</sub>	T <sub>m</sub>	type	T <sub>h</sub>	T <sub>m</sub>	T <sub>f</sub>	type	T <sub>h</sub>	T <sub>m</sub>	
71	-	ratings see S3M4, S3M5, S3M8		L10N	55	175	78	DM	62	250	
72	L50N			-	-	-	-	90	DM	68	250
77	L50N			L10N	55	175	110	DM	86	250	
84	L50N			-	-	-	-	120	DM	96	250
85	-			L10N	55	175	130	DM	112	250	
90	-			L10N	60	175	140	DM	125	250	
93	L50N			-	-	-	-	150	DM	135	250
98	L50N			-	-	-	-	170	DM <sup>1)</sup>	145	250
100	L50N			L10N	70	175	182	DM	163	250	
104	L50N			-	-	-	-	190	DM	170	250
108	-			L10N	78	175					
110	L50N			-	-	-	-				
117	L50N			-	-	-	-				
118	-			L10N	88	175					
121	L50N			-	-	-	-				
128	L50N			-	-	-	-				
130	-			L10N	100	175					
140	-			L10N	110	175					
144	L50N			-	-	-	-				
150	-			L10N	120	175					
152	L50N			-	-	-	-				
165	-			L10N	135	175					
167	L50N			-	-	-	-				
172	L50N			-	-	-	-				
184	L50N	-	-	-	-						
190	L50N	-	-	-	-						
192	L50N	-	-	-	-						
205	L50N <sup>3)</sup>	-	-	-	-						
216	L50N <sup>3)</sup>	-	-	-	-						
229	L50N <sup>3)</sup>	-	-	-	-						
240	L50N <sup>3)</sup>	-	-	-	-						
tolerance (K)		0 / -5		0 / -5			0 / -7				
wire		see chart below		see chart below			6.3 x 0.8 mm				

type	lead	code	temperature max.	operating voltage max.	diameter insulation	cross section diameter	UL style
L10N	stranded white	L330	200 °C	600 V	0.90 mm	AWG24 / 0.24 mm <sup>2</sup>	3557
L10N G911	stranded white	L340	200 °C	600 V	1.26 mm	AWG20 / 0.61 mm <sup>2</sup>	3557
L50N	stranded white	L350	200 °C	600 V	1.50 mm	AWG18 / 0.96 mm <sup>2</sup>	3557
L50N	solid yellow	L440	200 °C	300 V	1.51 mm	AWG20 / 0.81 mm	1332

<sup>1)</sup> not approved    <sup>2)</sup> UL approved only    <sup>3)</sup> T<sub>f</sub> > 200 °C on request

Deviations from standard types on request.

Representation office:

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**MICROTHERM**

