SMD MELF SOD80, Glass Encapsulated NTC Thermistors

FEATURES

- Small diameter down to 1.7 mm
- Quick response time down to 0.9 s
- Resistant to corrosive atmospheres and harsh environments
- Wide temperature range from -40 °C to +150 °C
- Available on tape
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb e3 RoHS COMPLIANT HALOGEN FREE

QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Resistance value at 25 °C	10K to 100K	Ω
Tolerance on R_{25}-value	± 5	%
$B_{25/85}$-value	3977	K
Tolerance on $B_{25/85}$-value	± 1.3	%
Operating temperature range	-40 to +150	°C
Maximum power dissipation at 55 °C	100	mW
Dissipation factor	2.5	mW/K
Response time	0.9	s
Thermal time constant τ	6	s
Weight	≈ 0.03	g

APPLICATIONS

Temperature measurement, sensing and control:

- Domestic appliances
- Industrial process control

DESCRIPTION

These thermistors consist of a micro chip clamped between Dumet electrodes in a glass sealing with tin plated terminations. Only available in tape and reel packaging.

DESIGN-IN SUPPORT

For complete curve computation, please visit:
www.vishay.com/thermistors/ntc-curve-list/

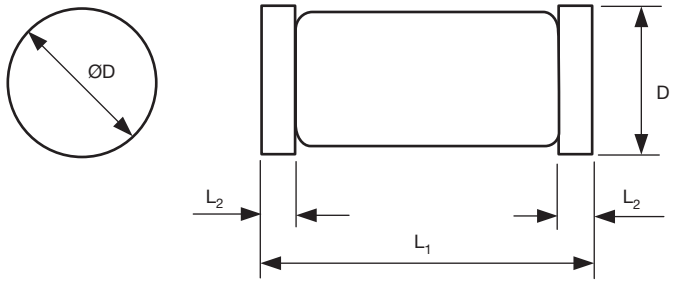
MOUNTING

By soldering. Not intended for potting or automotive applications.

ELECTRICAL DATA AND ORDERING INFORMATION

R_{25} (Ω)	R_{25}-TOL. (± %)	$B_{25/85}$ (K)	$B_{25/85}$-TOL. (± %)	SAP MATERIAL AND ORDERING NUMBER
10 000	5	3977	1.3	NTCSMELFE3103JT
20 000	5	3977	1.3	NTCSMELFE3203JT
30 000	5	3977	1.3	NTCSMELFE3303JT
100 000	5	3977	1.3	NTCSMELFE3104JT

DIMENSIONS in millimeters



L_1	L_2	ØD
3.5 ± 0.35	0.35 ± 0.1	1.55 ± 0.15

For technical questions, contact: nlr@vishay.com
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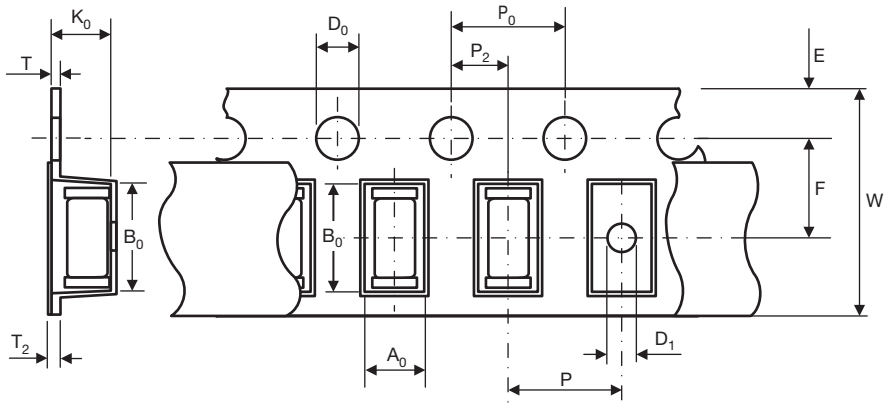
PACKAGING

BLISTER TAPE ON REEL

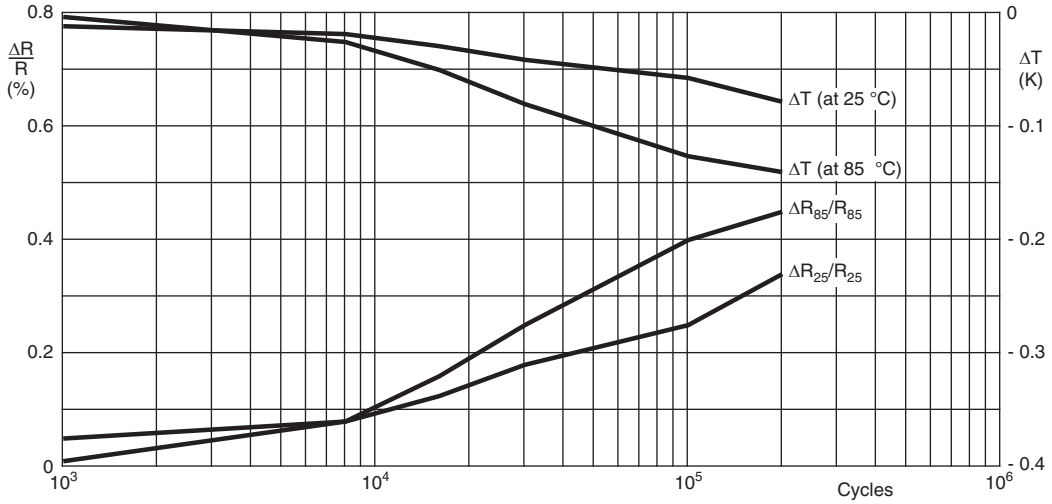
Packed in an 8 mm wide blister tape on a 180 mm reel, according to IEC 60286-3



DIMENSIONS in millimeters	
PARAMETER	**VALUE**
A_0	2.1 + 0.3 / - 0.0
B_0 min.	3.8
K_0	2.1 + 0.3 / - 0.0
W	8 ± 0.2
F	3.5 ± 0.1
E	1.75 ± 0.1
P	4.0 ± 0.1
P_0	4.0 ± 0.1
P_2	2.0 ± 0.05
D_0	1.5 ± 0.1
D_1	1.0 ± 0.1
T max.	0.4
T_2 max.	0.5

STABILITY CHARACTERISTICS

Stability of glass encapsulated NTCs in thermal shock test (200 000 cycles -40 °C / +200 °C). Tested on non-soldered parts.



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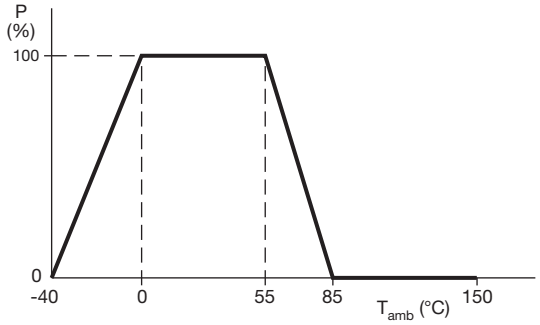
DERATING

Power derating curve



Note

- Zero power is considered as measuring power max. 1 % of max. power

For complete curve computation, visit: www.vishay.com/thermistors/ntc-curve-list/.

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES FOR NTCSMELFE3

TEMPERATURE (°C)	R_T/R_{25}	*R* for 10 kΩ	*R* for 20 kΩ	*R* for 30 kΩ	*R* for 100 kΩ	*R*-TOL. (± %)	α (%/K)	T-TOL. (± °C)
-40	33.21	332 094	664 187	996 281	3 320 936	10.08	-6.62	1.52
-35	23.99	239 900	479 799	719 699	2 398 996	9.59	-6.39	1.50
-30	17.52	175 200	350 399	525 599	1 751 996	9.12	-6.18	1.48
-25	12.93	129 287	258 574	387 861	1 292 869	8.67	-5.98	1.45
-20	9.636	96 358	192 716	289 074	963 582	8.24	-5.78	1.42
-15	7.250	72 500	145 001	217 501	725 004	7.82	-5.60	1.40
-10	5.505	55 046	110 092	165 138	550 459	7.42	-5.42	1.37
-5	4.216	42 157	84 314	126 471	421 570	7.04	-5.25	1.34
0	3.255	32 554	65 108	97 663	325 542	6.67	-5.09	1.31
5	2.534	25 339	50 677	76 016	253 386	6.31	-4.93	1.28
10	1.987	19 872	39 744	59 617	198 722	5.96	-4.79	1.25
15	1.570	15 698	31 397	47 095	156 985	5.63	-4.64	1.21
20	1.249	12 488	24 975	37 463	124 877	5.31	-4.51	1.18
25	1.000	10 000	20 000	30 000	100 000	5.00	-4.38	1.14
30	0.8059	8059	16118	24 177	80 591	5.30	-4.25	1.25
35	0.6535	6535	13069	19 604	65 347	5.59	-4.13	1.35
40	0.5330	5330	10660	15 990	53 299	5.87	-4.02	1.46
45	0.4372	4372	8743	13 115	43 717	6.14	-3.91	1.57
50	0.3605	3605	7211	10 816	36 053	6.41	-3.80	1.69
55	0.2989	2989	5977	8966	29887	6.66	-3.70	1.80
60	0.2490	2490	4980	7470	24900	6.91	-3.60	1.92
65	0.2084	2084	4169	6253	20844	7.15	-3.51	2.04
70	0.1753	1753	3506	5259	17530	7.39	-3.42	2.16
75	0.1481	1481	2962	4443	14809	7.61	-3.33	2.29
80	0.1256	1256	2513	3769	12564	7.84	-3.25	2.41
85	0.1070	1070	2141	3211	10703	8.05	-3.17	2.54
90	0.09154	915.4	1831	2746	9154	8.26	-3.09	2.67
95	0.07860	786.0	1572	2358	7860	8.46	-3.01	2.81
100	0.06773	677.3	1355	2032	6773	8.66	-2.94	2.95
105	0.05857	585.7	1171	1757	5857	8.85	-2.87	3.08
110	0.05083	508.3	1017	1525	5083	9.04	-2.80	3.23
115	0.04426	442.6	885.2	1328	4426	9.22	-2.74	3.37
120	0.03866	386.6	773.2	1160	3866	9.40	-2.67	3.52
125	0.03387	338.7	677.5	1016	3387	9.57	-2.61	3.66
130	0.02977	297.7	595.4	893.1	2977	9.74	-2.55	3.81
135	0.02624	262.4	524.8	787.2	2624	9.91	-2.50	3.97
140	0.02319	231.9	463.8	695.7	2319	10.07	-2.44	4.12
145	0.02055	205.5	411.1	616.6	2055	10.23	-2.39	4.28
150	0.01826	182.6	365.3	547.9	1826	10.38	-2.34	4.44

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