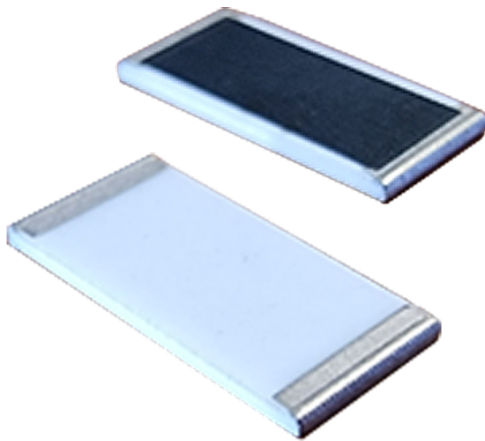




- Surface mount thick film technology
- Non Magnetic SMD resistors
- 1Ω to 10MΩ Resistance range
- Suitable for high vacuum applications - no organics
- PtAg terminals for conductive gluing and soldering
- Working voltage up to 1.5kV
- High temperature applications up to 300°C
- RF Version available untrimmed



Technical Data

Table 1

Size	0402	0603	0805	1206	2010	2512	4020
Power rating P_{70} (W) ($P_{155} = 0W$)	0.05W	0.1W	0.125W	0.25W	0.75W ²	1W ²	2W ²
Working voltage U_{-1} , U_{eff} (V) Standard (trimmed) U (untrimmed, Tol. $\geq 5\%$)	30V 60V	75V 150V	100V 200V	200V 400V	250V 900V	300V 1.2kV	500V 1.5kV
Resistance / Tolerance % / Temperature Coefficient (TCR) ppm/°C ³ (Lower resistance tolerances, TCR & VCR on request & by agreement)							
1R - <10R ppm/°C	± % 250	10, 20 100, 250	5, 10, 20 100, 250	5, 10, 20 100, 250	5, 10, 20 100, 250	5, 10, 20 100, 250	5, 10, 20 100, 250
10R - <100R ppm/°C	± % 100	5, 10 50, 100	2, 5, 10 50, 100	1, 2, 5, 10 50, 100	1, 2, 5, 10 50, 100	1, 2, 5, 10 50, 100	1, 2, 5, 10 50, 100
100R - 1M ppm/°C	± % 50, 100	2, 5, 10 50, 100	2, 5, 10 50, 100	1, 2, 5, 10 50, 100	1, 2, 5, 10 50, 100	1, 2, 5, 10 50, 100	1, 2, 5, 10 50, 100
>1M - 10M ppm/°C	± % 50, 100	2, 5, 10, 20 50, 100	2, 5, 10 50, 100	2, 5, 10 50, 100	1, 2, 5, 10 50, 100	1, 2, 5, 10 50, 100	1, 2, 5, 10 50, 100

¹) Continuous operating voltage (U_{-} , U_{eff}): $V \leq \sqrt{(P \cdot R)}$ or max. working voltage (the lower value)

²) At continuous power dissipation the dimensions of solder-pads must secure sufficient heat removal. Power Mode 1W as SZSM Series, 2010 size ($P_{70}=1W$, $P_{300}=0W$), 2W as SZSM Series, 2512 size ($P_{70}=2W$, $P_{300}=0W$); 3W as SZSM Series, 4020 size ($P_{70}=3W$, $P_{300}=0W$). Higher power rating requires adequate heat removal (e.g. increased solder pads or Cu-thicknesses). The user has to ensure solder joints will not run over their load limit. The resistor must not exceed the specified operating temperature range. Zero Ω jumper: <50MΩ.

³) Temperature coefficient TCR: in ppm/K +25°C to +125°C; TCR lower than standard TCR (highest value) +25°C to +85°C

Technical Data - General

Operating temperature range	-55°C to +300°C	
Climatic category acc. to EN 60068-1	55, 300, 56	
Solderability acc. to EN 60068-2-58 (lead-free and lead-containing) ⁴	250°C, 3s	
Max. soldering temperature acc. to EN 60068-2-58	260°C, 10s	
The temperature coefficient is valid for the temperature range +25°C to +125°C (85°C for special TCR)		
The final measuring of the resistors takes place at room temperature!		
Please pay attention to the interconnection technology at high temperature applications.		
Long term stability	10R - 10M	< 10R
Storage 125°C/1000h	< 0.5%	< 1%
Storage 155°C/1000h	< 1%	< 2%
Load Life 70°C/1000h	< 0.5%	< 1%
Short term overload	< 0.25%	< 0.5%
Damp heat (56d/40°C/96%)	< 0.5%	< 1%

⁴) Up to 6 months after shipment (air, 30°C/60%rH) or up to 12 months at storage in nitrogen or in evacuated dry packs.
Other data according to EN 140401-802 (CECC 40401-802).

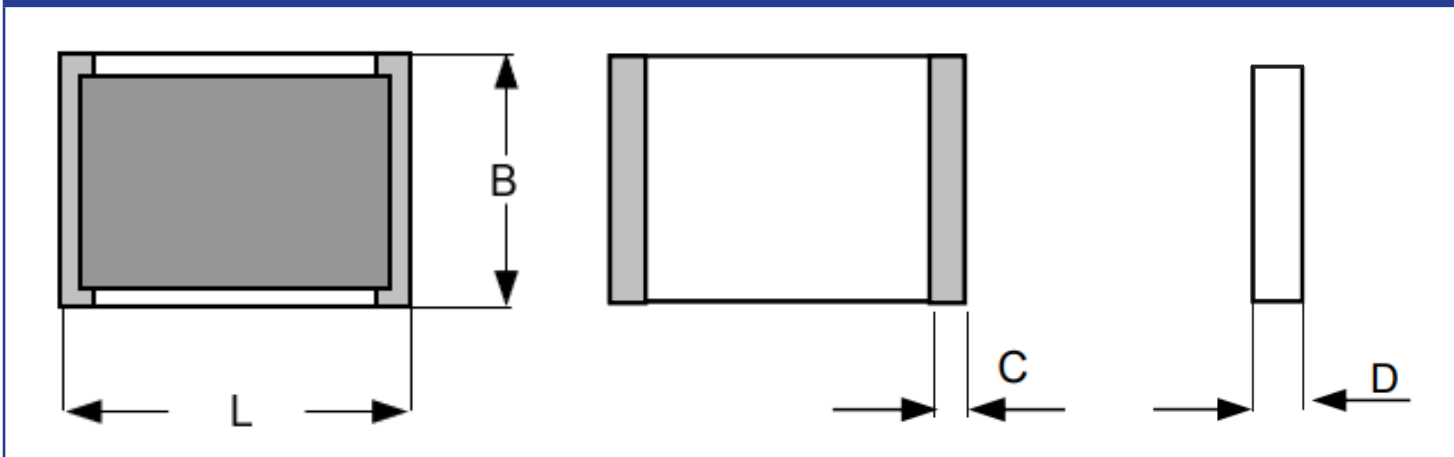
Dimensions (mm)

Table 2

Size	L (Length)	B (Width)	D (Thickness)	C (Wrap around width)
0402	0.95 +0.10/-0.05	0.48 +0.10/-0.05	0.28 +0.1/-0.05	0.1 +0.1/-0.05
0603	1.5 +0.15/-0.05	0.80 +0.15/-0.05	0.40 +0.15/-0.05	0.2 +0.2/-0.1
0805	2.00 +0.15/-0.05	1.25 +0.15/-0.05	0.40 +0.15/-0.05	0.3 +0.2/-0.1
1206	3.20 +0.15/-0.05	1.50 +0.2/-0.05	0.40 +0.15/-0.05	0.3 +0.2/-0.1
2010	5.10 +0.15/-0.05	2.50 +0.2/-0.05	0.60 +0.20/-0.1	1.2 ±0.2
2512	6.30 +0.15/-0.05	3.50 +0.2/-0.05	0.60 +0.15/-0.05	0.9 ±0.2
4020	10.20 +0.15/-0.05	5.10 +0.2/-0.05	0.60 +0.15/-0.05	0.9 ±0.2

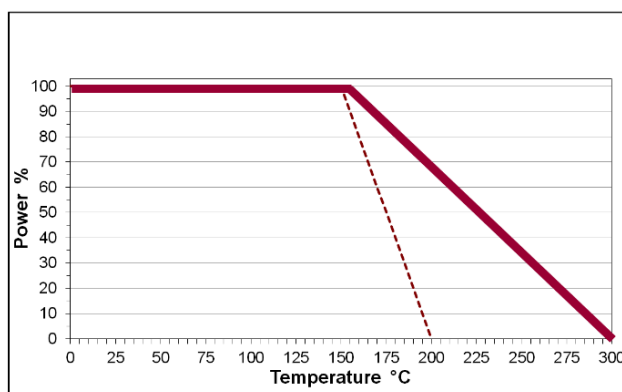
Dimensions

Fig. 1



High Temperature Derating Curve

Fig. 2



Packaging

Bulk in plastic bags	Contact Durakool for minimum order quantities
Blister tape acc. to IEC 60286-3	Contact Durakool for minimum order quantities
Reel diameter	180 or 330mm

Example Ordering Code

S Z S M 0 6 0 3 T 1 M 0 0 F 5 0

Series	Case Size	Trimming	Resistance Ω	Tolerance ± % (See table 1)	Temperature Coefficient TCR
SZSM	0402, 0603, 0805, 1206, 2010, 2512, 4020	T = Trimmed U = Untrimmed	1R - 10M	F ± 1 G ± 2 J ± 5 K ± 10 M ± 20 N ± 30	50 to 250ppm (See table 1)

NB: Standard TCR will be the highest value in the table unless otherwise requested. Measuring voltage will be 10V. Other voltages are available - specific requirements must be requested.

SZSM 012022FW

Specifications are subject to change without notice. E&OE.