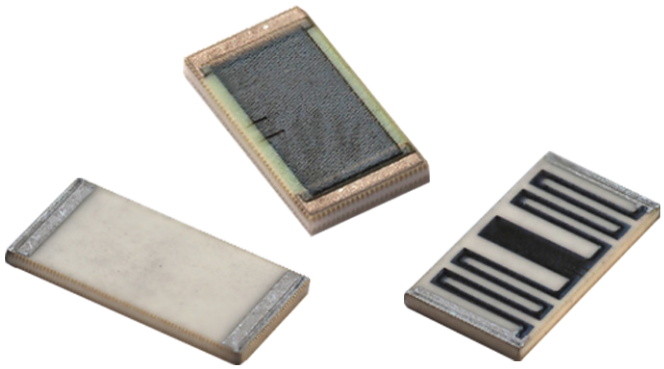
SZXB Series
High Temp Bondable SMD Chip Resistors



- Surface mount thick film technology
- 10Ω to 1TΩ resistance range
- AgPd terminals for flip chip assembly (face down for conductivity epoxy assembly or soldering - or ...
- Gold terminals (0402, 0603, 0805) for wire bonding (US/TC; face up) as well as flip chip (face down; for conductive epoxy assembly)
- Working voltage up to 6kV
- High temperature applications up to 200˚C
- No wrap around
- Bottom fully insulated with 1206 available and larger case sizes
- Non magnetic

ELV ROHS Compliant ✓
2000/53/EC 2011/65/EC

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. ≥5%)		30V 60V	75V 150V	100V 200V	200V 400/1.5kV [0]	1.5kV 2.5kV [0]	1.5kV 3.5kV [0]	4kV 6kV [0]
Resistance / Tolerance % / Temperature Coefficient (TCR) ppm˚C[3] / Voltage Coefficient (VCR) ppm/V[4] (Lower resistance tolerances, TCR & VCR on request & by agreement)								
10R - <100R	± % ppm/˚C	5/10/20 100	5/10/20 50/100	5/10/20 50/100	5/10/20 50/100	5/10/20 50/100	1/2/5/10 50/100	1/2/5/10 50/100
100R - <1M	± % ppm/˚C	5/10 50/100	5/10 50/100	5/10 50/100	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	5/10/20 50/100	5/10 50/100	5/10 50/100	5/10 50/100	1/2/5/10 50/100	1/2/5/10 50/100	1/2/5/10 50/100
>10M - 100M	± % ppm/˚C ppm/V	5/10/20 100/250 500	5/10/20 50/100 500	5/10/20 50/100 500	5/10/20 50/100 250	1/2/5/10/20 50/100 50	1/2/5/10/20 50/100 25	1/2/5/10/20 50/100 10
>100M - 1G	± % ppm/˚C ppm/V	5/10/20/30 500 1000	5/10/20 250/500 500	5/10/20 250/500 500	5/10/20 100/500 250	1/2/5/10/20 50/100 100	1/2/5/10/20 50/100 50	1/2/5/10/20 50/100 25
>1G - 10G	± % ppm/˚C ppm/V	10/20/30 2000 2000	5/10/20/30 500/1000 1000	5/10/20 500/1000 1000	5/10/20 250/500 500	2/5/10/20 100/250 250	2/5/10/20 100/250 100	2/5/10/20 50/100 25
>10G - 100G	± % ppm/˚C ppm/V	10/20/30 2000/3000 5000	10/20/30 2000/3000 3000	10/20/30 2000/3000 3000	5/10/20 500/1000 1000	5/10/20/30 250/500 500	5/10/20/30 250/500 250	5/10/20/30 100/250 100
>100G - 1T	± % ppm/˚C ppm/V	On request	On request	10/20/30 3000 5000	10/20/30 2000 2000	5/10/20/30 500/1000 1000	5/10/20/30 500/1000 500	5/10/20/30 250/500 250

[0]) With passivation

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

[2]) At continuous power dissipation the dimensions of solder-pads must secure sufficient heat removal.

[3]) Temperature coefficient TCR: in ppm/K +25°C...+125°C; TCR lower than standard TCR (highest value) >100G: +25°C...+85°C

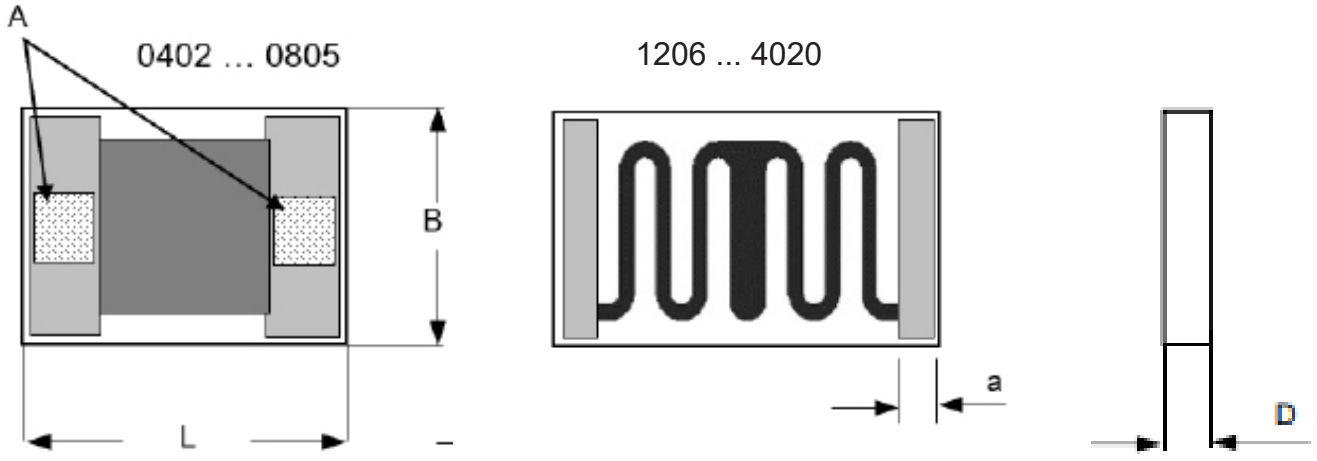
[4]) Voltage coefficient VCR: Typical values, all negative, not for all TCR values available

Technical Data - General					
Operating temperature range	-55°C to +200°C				
Climatic category acc. to EN 60068-1	55/200/56				
Protection of the resistor element	Glass passivation (sizes 1206 to 4020)				
Solderability acc. to EN 60068-2-58 [5]	250°C, 3s				
Max. soldering temperature acc. to EN 60068-2-58	260°C, 10s (maximum 2 cycles)				
The temperature coefficient is valid for the temperature range +25°C …+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	**< 10M**	**< 10M - 1G**	**1G - 10G**	**≥10G**	
Storage 125°C/1000h	< 0.5%	< 1%	< 2%	< 5%	
Max.voltage / 1000h	< 0.5%	< 0.5%	< 1%	< 2%	
Short term overload	< 0.25%	-	-	-	
[5]) Up to 6 months after shimpent (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**

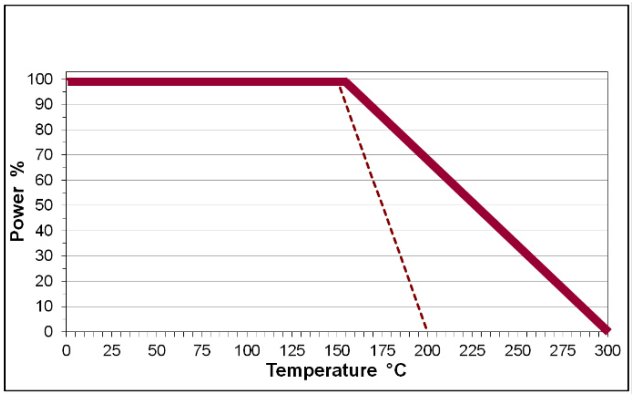
Size	L (Length)	B (Width)	D (Thickness)	Bondpad A min. or a
0402	0.95 +0.10/-0.05	0.48 +0.10/-0.05	0.28 +0.1/-0.05	0.15 x 0.15
0603	1.5 +0.15/-0.05	0.80 +0.15/-0.05	0.40 +0.15/-0.05	0.20 x 0.20
0805	2.00 +0.15/-0.05	1.25 +0.15/-0.05	0.40 +0.15/-0.05	0.25 x 0.40
1206	3.20 +0.15/-0.05	1.50 +0.2/-0.05	0.40 +0.15/-0.05	0.30 +0.2
2010	5.10 +0.15/-0.05	2.50 +0.2/-0.05	0.65 +0.15/-0.05	0.60 ±0.2
2512	6.30 +0.15/-0.05	3.50 +0.2/-0.05	0.65 +0.15/-0.05	0.60 ±0.2
4020	10.20 +0.20/-0.05	5.10 +0.2/-0.05	0.65 +0.15/-0.05	0.90 ±0.2

Dimensions — **Fig. 1**



High Temperature Derating Curve

Fig. 2



Packaging	
Bulk in plastic bags	Contact Durakool for minimum order quantities
Waffle pack / gel tray (JEDEC 2")	Contact Durakool for minimum order quantities
Embossed carrier tape acc. to IEC 60286-3	Contact Durakool for minimum order quantities
Reel diameter	180 or 330mm
Tape Orientation	Standard - AgPd termination, face down flip chip assembly. Upon request - Au gold terminations, face up chip for wire bonding.

Example Ordering Code

S	Z	X	B	2	0	1	0	1	0	0	M	F	5	0	A	U

Series

Case Size
0402, 0603, 0805, 1206, 2010, 2512, 4020

Resistance Ω
10R - 1T

Tolerance ± % (See table 1)
F ± 1
G ± 2
J ± 5
K ± 10
M ± 20
N ± 30

Temperature Coefficient TCR
25 to 3000ppm (See table 1)

Terminals*
Silver Palladium: AgPD
Gold: AU

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.