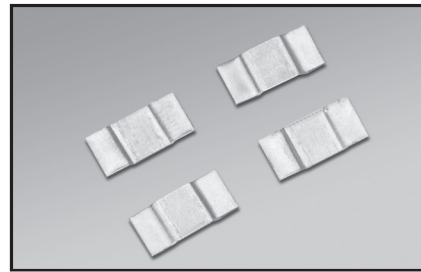


## BWS03,BWS05 Chip Shunt Resistors

BWS03 resistors exhibit a constant power of 3 watts up to 77A at 0.5mΩ. BWS05 resistors exhibit a constant power of 5watts up to 100A at 0.5mΩ. These models have heavy copper connectors, excellent long term stability and low inductance. Maximum soldering temperatures of up to 350 °C/30 sec. Or 250 °C/10 min. Mounting using re-flow soldering or welding on copper. Applications include: Current sensors for hybrid power sources, frequency converters and high current automotive applications.

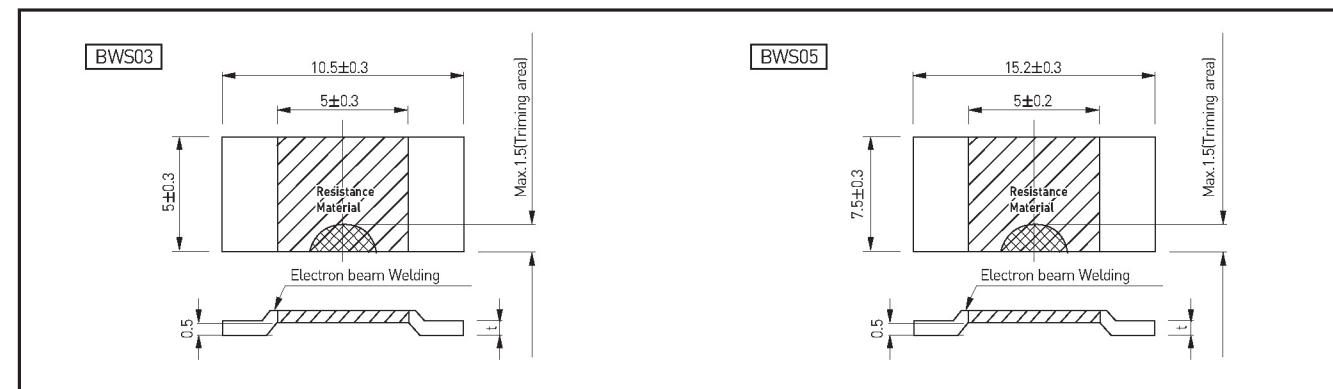


### GENERAL SPECIFICATIONS

Model	Power Rating(W)	Resistance(mΩ)	Tolerance(%)	TCR	Internal Heat Resistance	Operating Ambient Temp.
BWS03	3	0.5, 1, 2, 3, 4	F [±1], G [±2] J [5]	±50ppm(20°C to 60°C)	Rthi < 10k/W	55 °C~170 °C
BWS05	5	0.5, 1, 2, 3		maximum ±100ppm		

### DIMENSIONS (mm) & Materials

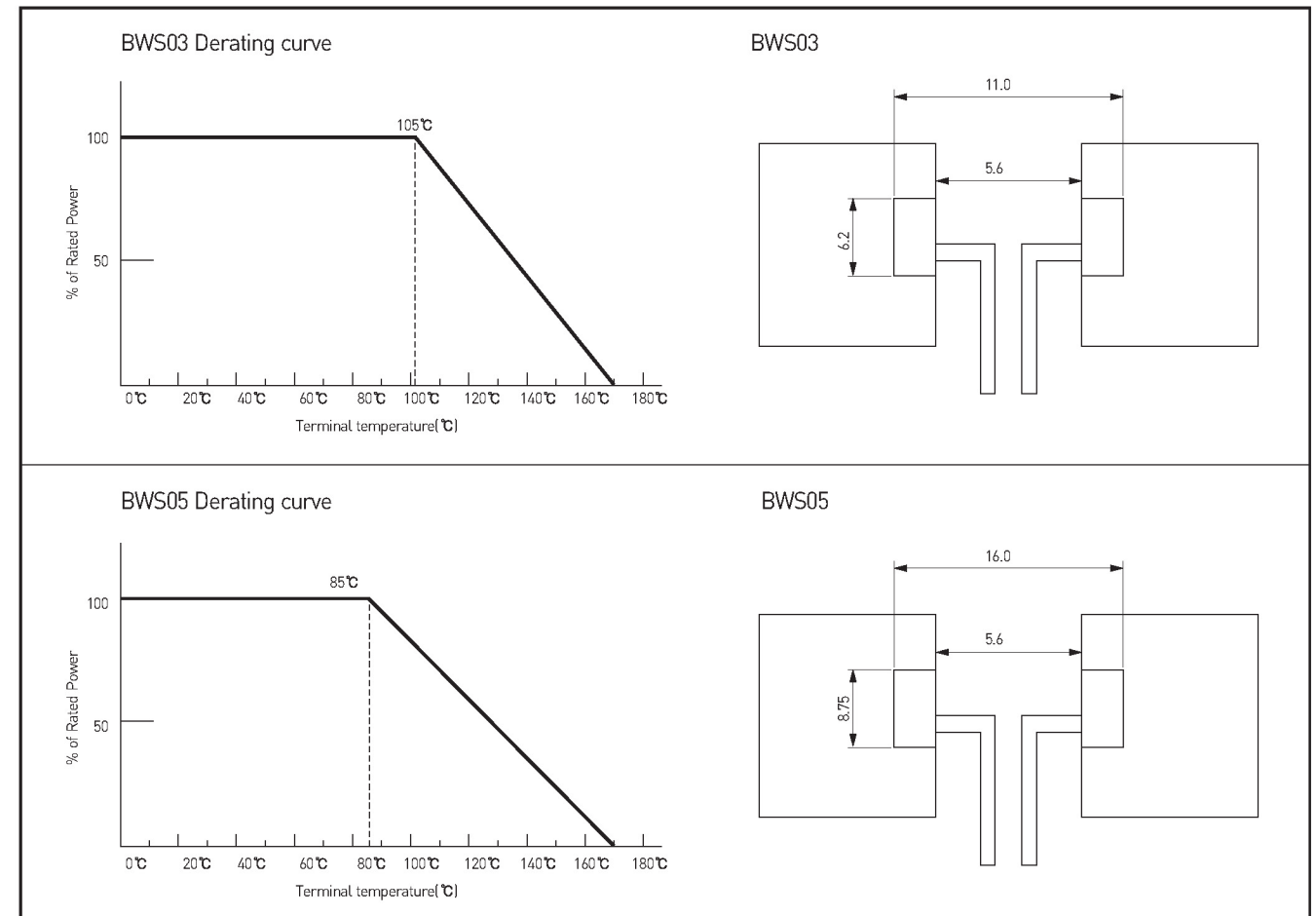
Model	Value	Material	Thickness(t)
BWS03-M	0.5mΩ	Manganin	0.88mm±0.05
BWS03-M	1mΩ	Manganin	0.43mm±0.05
BWS03-N	2mΩ	NiCr alloy	0.64mm±0.05
BWS03-N	3mΩ	NiCr alloy	0.43mm±0.05
BWS03-N	4mΩ	NiCr alloy	0.32mm±0.05
BWS05-M	0.5mΩ	Manganin	0.56mm±0.05
BWS05-N	1mΩ	NiCr alloy	0.9mm±0.05
BWS05-N	2mΩ	NiCr alloy	0.45mm±0.05
BWS05-N	3mΩ	NiCr alloy	0.3mm±0.05



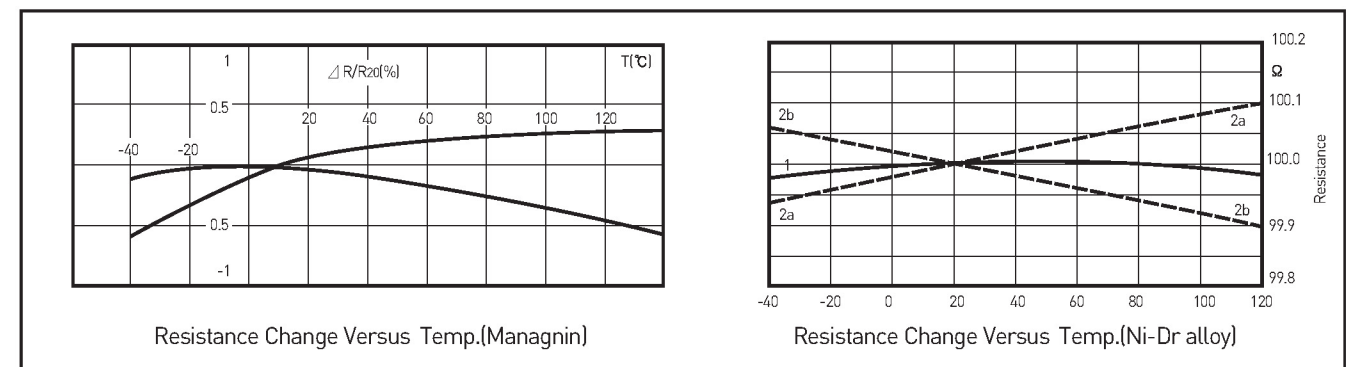
### CHARACTERISTICS

Thermal Shock	[±0.1%]	-65°C, 25°C, 125°C, 25°C 25 cycles
Short time Overload	[±0.2%]	Power Rating × 5 for 5 sec.
Resistance to Soldering Heat	[±0.2%]	260°C 10 sec.
Moisture Resistance	[±0.2%]	90~98%RH, +25°C, +65°C, -10°C 10 Cycle
High Temperature Exposure	[±0.2%]	140°C for 2000 hours
Vibration, High Frequency	[±0.2%]	15g 10~2000Hz 36 Cycles
Inductance	[ < 3nH ]	
Load Life(Terminal temp. maximum 105°C)	[±1.0%]	Power Rating 90 minutes on, 30 minutes off for 2000 hours
Thermal EMF[μV/°C]	[2μV/°C maximum]	0 ~ 100°C
Current Noise	[±0.01%]	MIL-STD-202 Method 308
Voltage Coefficient	Linearity error less than 120dB	MIL-STD-202 Method 309
Shock	[±0.2%]	50g's, 11ms

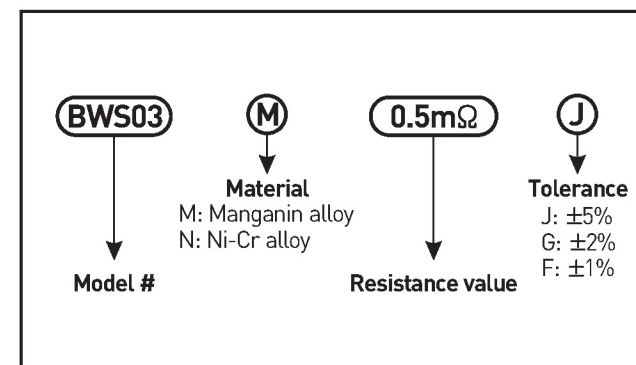
### DERATING CURVE & PROPOSED INSTALLATIONS



### RESISTANCE CHANGE VS TEMPERATURE



### ORDERING PROCEDURE EXAMPLE



### ORDERING PROCEDURE EXAMPLE

