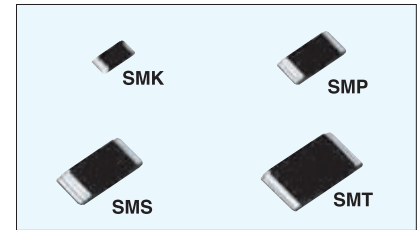


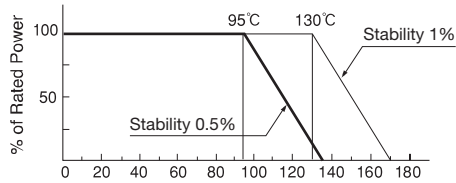
ISA-PLAN SHUNT CHIP RESISTORS **SMK, SMP, SMT, SMS**

Type	Load Capacity (W)* [] Free air	Resistance Range (Ω)	Resistance Tolerance (%)	Temp. Coefficient (20°C ~ 60°C)	Operating Temp.(°C)	Solder Reflow	Internal Thermal Resistance (foil / contacts)
SMK	0.5 [0.1]	0.01 ~ 0.5	±1	±50ppm/°C (R≥15mΩ) ±100ppm/°C (R<15mΩ)	-55~+170	MAX.255°C (t<40sec)	60°C/W
SMP	1 [0.2]	0.005 ~ 1	±1	±50ppm/°C (R≥10mΩ) ±100ppm/°C (R<10mΩ)			30°C/W
SMT	3 [0.5]	0.004 ~ 0.68	±1				13°C/W
SMS	2 [0.5]	0.005 ~ 1	±1	±50ppm/°C (R≥10mΩ) ±100ppm/°C (R<10mΩ)	-55~+170	MAX.255°C (t<40sec)	20°C/W



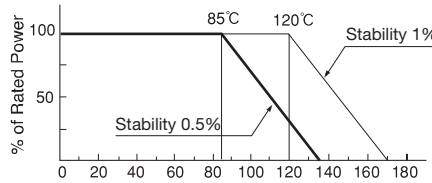
*Referring to power derating curve. Proper measures for heat radiation should be taken. **CAUTION**

Power Derating Curve SMK, SMP, SMT



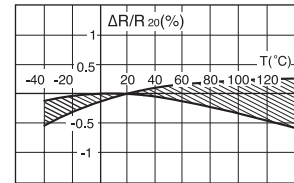
CAUTION Terminal Temperature (°C)

Power Derating Curve SMS

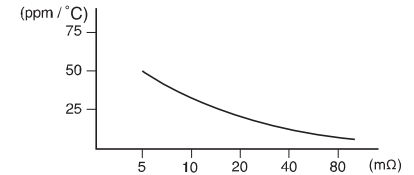


CAUTION Terminal Temperature (°C)

Resistance Change Versus Temp.

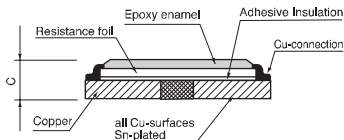
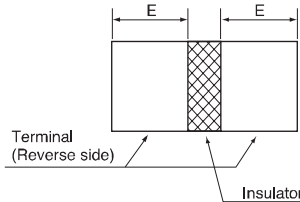
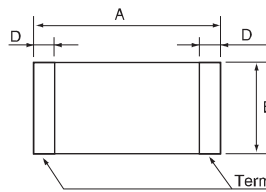


Temperature Coefficient (Low Resistance Values) SMP, SMS, SMT



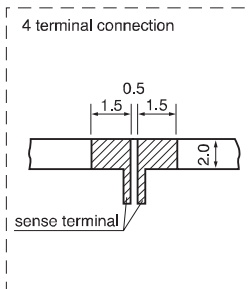
Dimensions (mm)

SMK, SMP, SMS, SMT

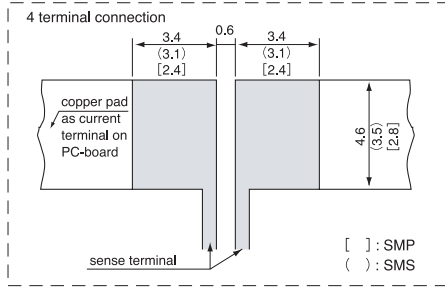


Type	Dimensions (mm)					Weight (g)
	A	B	C	D	E	
SMK	3.05	1.52	0.6	1.0	1.28	0.05
SMP	5.08	2.54	0.7	1.0	2.14	0.08
SMS	6.35	3.05	0.8	1.0	2.72	0.1
SMT	7.1	4.2	0.8	1.0	3.1	0.13

Proposal for PCB-Layout Type SMK (Solder Reflow)



Proposal for PCB-Layout Type SMP, SMS, SMT (Solder Reflow)



Performance

Parameters	Test Condition	Specification	Typical Test Data
Thermal Shock	-65°C, 25°C, 125°C, 25°C 25cycles	±0.1%	±0.1%
Over Load	5 × Wattage Rating (Free Air) 5sec	±0.2%	±0.1%
Resistance to Solvents	IPA 3min	No Damage	No Damage
Low Temp. Storage and Operation	MIL-R-26E	±0.1%	±0.05%
Resistance to Soldering Heat	260°C 10sec	±0.3%	±0.1%
Moisture Resistance	Near 100%CRH, +25°C, +65°C, -10°C 10cycles (10days)	±0.1%	±0.1%
Shock	50g's, 11ms	±0.2%	±0.2%
Vibration, High Frequency	MIL-STD-202 Method 204D-B	±0.2%	±0.2%
Load Life (Terminal Temp.)	Wattage Rating (1.5Hr ON+0.5Hr OFF) 2000Hr	±0.5%	±0.1%
Load Life (Terminal Temp.)	Wattage Rating (1.5Hr ON+0.5Hr OFF) 2000Hr	±1%	±0.5%
Storage Life at Elevated Temp.	MIL-STD-202 method 108A-F	±0.3%	±0.3%
High Temperature Exposure	140°C 2000Hr	±0.2%	±0.2%
Current Noise	MIL-STD-202 method 308	±0.01%	none
Voltage Coefficient	MIL-STD-202 method 309	linearity error less than 120dB	
Thermal EMF	0~100°C	-3μV/°C MAX	-2 μV/°C
Frequency Characteristic	Inductance (10mΩ)	<3nH	<2nH

*3 SMS : Terminal Temp. Max. 85°C
 *4 SMS : Terminal Temp. Max. 120°C

How to order

SMT 10mΩ ±1%
 Type Resistance Tolerance

● Standard Resistance E-06 Series

● Taping Specification

SMK : DIN EN60286-3 8mm 12500 pcs
 SMP : DIN EN60286-3 12mm 10000 pcs
 SMS : DIN EN60286-3 12mm 5000 pcs
 SMT : DIN EN60286-3 12mm 5000 pcs

● AEC-Q200 Qualified

SMT Standard Resistance (Stock)

	4	5	6.8	(mΩ)±1%			
	10	15	22	33	47	68	(mΩ)±1%
	100	150	220	330	470	680	(mΩ)±1%



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