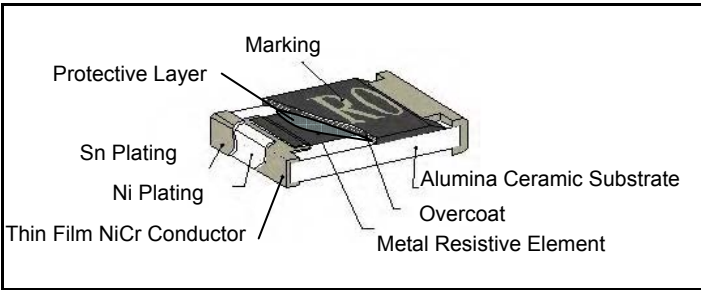




# CURRENT SENSING CHIP RESISTORS

## TYPE RS73

### CONSTRUCTION



**FEATURES**

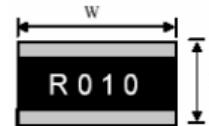
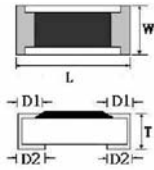
- Ideal for all types of current sensing and Power Management applications
- Resistance Values from 1 to 1000 milli Ohms
- Low TCR  $\pm 100$  PPM $\sim\pm 500$  PPM/ $^{\circ}$ C
- High Wattage Rating up to 3W
- Ideal for Audio Current protection, Voltage Regulation Module (VRM), DC-DC converter, Battery Pack, Charger, Adaptor applications
- Ideal for Automotive Engine Control Applications
- Ideal for Disk Driver and Portable devices (PDA and Cell Phones)
- Optional spec is available based on customer's requirement

### DIMENSIONS

(Unit : mm)

0402 / 0603 / 0805 / 1206 / 1210 / 2010 / 2512

1225/3720/7520



Mark	EIA	Power Rating	L	W	T	D1	D2
2V	0402	0.125W	1.00 $\pm$ 0.05	0.50 $\pm$ 0.05	0.32 $\pm$ 0.10	0.25 $\pm$ 0.10	0.20 $\pm$ 0.10
2X / 2C / 2N	0603	0.063W / 0.1W / 0.125W	1.60 $\pm$ 0.10	0.80 $\pm$ 0.10	0.45 $\pm$ 0.10	0.30 $\pm$ 0.20	0.30 $\pm$ 0.20
2A / 2D / 2K	0805	0.1W / 0.125W / 0.25W	2.00 $\pm$ 0.15	1.25 $\pm$ 0.15	0.55 $\pm$ 0.10	0.30 $\pm$ 0.20	0.40 $\pm$ 0.25
2B / 2E / 2Q	1206	0.125W / 0.25W / 0.5W	3.05 $\pm$ 0.15	1.55 $\pm$ 0.15	0.55 $\pm$ 0.10	0.50 $\pm$ 0.30	0.40 $\pm$ 0.25
2F / 2G / 2M	1210	0.25W / 0.5W / 0.70W	3.20 $\pm$ 0.2	2.50 $\pm$ 0.2	0.55 $\pm$ 0.10	0.50 $\pm$ 0.30	0.50 $\pm$ 0.20
2H / 2I	2010	0.5W / 1W	5.00 $\pm$ 0.20	2.45 $\pm$ 0.15	0.60 $\pm$ 0.15	0.60 $\pm$ 0.30	0.50 $\pm$ 0.25
3A / 3B	2512	1W / 2W	6.35 $\pm$ 0.20	3.15 $\pm$ 0.15	0.60 $\pm$ 0.10	0.60 $\pm$ 0.30	0.55 $\pm$ 0.25
3C	1225	3W	3.10 $\pm$ 0.15	6.30 $\pm$ 0.15	0.90 $\pm$ 0.15	0.60 $\pm$ 0.30	0.55 $\pm$ 0.25
3D	3720	1W	2.00 $\pm$ 0.20	3.75 $\pm$ 0.20	0.60 $\pm$ 0.10	0.40 $\pm$ 0.20	0.40 $\pm$ 0.20
3E	7520	2W	2.00 $\pm$ 0.20	7.50 $\pm$ 0.30	0.60 $\pm$ 0.10	0.40 $\pm$ 0.20	0.40 $\pm$ 0.20

### STANDARD ELECTRICAL SPECIFICATIONS

Size	Power Rating at 70 $^{\circ}$ C Max	TCR Code	Operating Temperature Range	Resistance Tolerance ( $\pm\%$ )	TCR (PPM/ $^{\circ}$ C)	Resistance Range									
0402	0.125W	G	-55 ~ +155 $^{\circ}$ C	F, G, J (1, 2, 5)	$\pm 300$ PPM	50m $\Omega$ ~ 100m $\Omega$									
		L				101m $\Omega$ ~ 460m $\Omega$									
		A				461m $\Omega$ ~ 1000m $\Omega$									
0603	0.125W	P				-55 ~ +155 $^{\circ}$ C	F, G, J (1, 2, 5)	$\pm 500$ PPM	20m $\Omega$ ~ 50m $\Omega$						
		G							51m $\Omega$ ~ 100m $\Omega$						
		L							101m $\Omega$ ~ 500m $\Omega$						
0805	0.25W	A							-55 ~ +155 $^{\circ}$ C	F, G, J (1, 2, 5)	$\pm 100$ PPM	501m $\Omega$ ~ 1000m $\Omega$			
		P										20m $\Omega$ ~ 50m $\Omega$			
		G										51m $\Omega$ ~ 100m $\Omega$			
1206	0.50W	L										-55 ~ +155 $^{\circ}$ C	F, G, J (1, 2, 5)	$\pm 200$ PPM	101m $\Omega$ ~ 500m $\Omega$
		A													501m $\Omega$ ~ 1000m $\Omega$
		P													10m $\Omega$ ~ 20m $\Omega$
1210	0.70W	G	-55 ~ +155 $^{\circ}$ C	F, G, J (1, 2, 5)	$\pm 300$ PPM										21m $\Omega$ ~ 50m $\Omega$
		L													51m $\Omega$ ~ 500m $\Omega$
		A													501m $\Omega$ ~ 1000m $\Omega$
2010	1W	P				-55 ~ +155 $^{\circ}$ C	F, G, J (1, 2, 5)	$\pm 500$ PPM							10m $\Omega$ ~ 20m $\Omega$
		G													21m $\Omega$ ~ 50m $\Omega$
		L													51m $\Omega$ ~ 500m $\Omega$
2512	1W	A							-55 ~ +155 $^{\circ}$ C	F, G, J (1, 2, 5)	$\pm 200$ PPM				501m $\Omega$ ~ 1000m $\Omega$
		P													10m $\Omega$ ~ 20m $\Omega$
		G													21m $\Omega$ ~ 50m $\Omega$
1225	3W	L										-55 ~ +155 $^{\circ}$ C	J (5)	$\pm 500$ PPM	2m $\Omega$
		T													3m $\Omega$ ~ 5m $\Omega$
		A													6m $\Omega$ ~ 20m $\Omega$
		G	21m $\Omega$ ~ 30m $\Omega$												
		P	31m $\Omega$ ~ 3000m $\Omega$												
3720	1W	G	-55 ~ +155 $^{\circ}$ C	G, J (2, 5)	$\pm 300$ PPM								10m $\Omega$ ~ 19m $\Omega$		
		T				20m $\Omega$ ~ 500m $\Omega$									
		A				1m $\Omega$ ~ 4m $\Omega$									
7520	2W	L		-55 ~ +155 $^{\circ}$ C	G, J (2, 5)	$\pm 300$ PPM	5m $\Omega$ ~ 10m $\Omega$								
		T					11m $\Omega$ ~ 350m $\Omega$								
		A					11m $\Omega$ ~ 350m $\Omega$								

Standard Resistance Values : E24 series.

Note : Optional specification is available based on customer's requirement



# CURRENT SENSING CHIP RESISTORS -- T Y P E R S 7 3

## HIGH POWER RATING ELECTRICAL SPECIFICATIONS

SMEC Series	Power Rating at 70°C Max	Operating Temp. Range	Resistance Tolerance (±%)	Resistance Range	Size
RS73□2K□□□□TF	0.25W	-55°C~+155°C	F, G, J (1, 2, 5)	100mΩ ~ 1000mΩ	0805
RS73□2Q□□□□TF	0.50W		F, G, J (1, 2, 5)	100mΩ ~ 1000mΩ	1206
RS73□2L□□□□TF	1W		F, G, J (1, 2, 5)	100mΩ ~ 1000mΩ	2010
RS73□3B□□□□TF	2W		F, G, J (1, 2, 5)	100mΩ ~ 1000mΩ	2512

Operating current  $I=\sqrt{(P/R)}$  : Operating Voltage  $V=\sqrt{(P*R)}$

## LOW TCR ELECTRICAL SPECIFICATIONS

SMEC Series	Power Rating at 70°C Max	Operating Temp. Range	Resistance Tolerance (±%)	Resistance Range	Size
RS73□2E□□□□TF	0.25W	-55°C~+155°C	F, G, J (1, 2, 5)	100mΩ ~ 1000mΩ	1206
RS73□2I□□□□TF	1W		F, G, J (1, 2, 5)	100mΩ ~ 1000mΩ	2010
RS73□3A□□□□TF	1W		F, G, J (1, 2, 5)	100mΩ ~ 1000mΩ	2512
RS73□3E□□□□TF	2W		F, G, J (1, 2, 5)	1mΩ ~ 5mΩ	7520

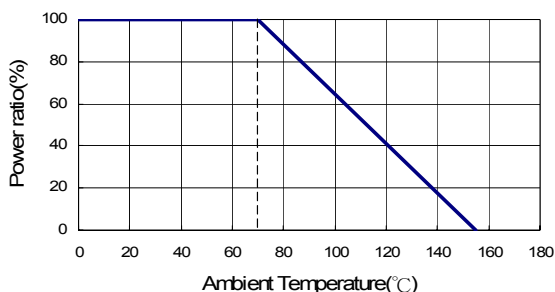
Operating current  $I=\sqrt{(P/R)}$  : Operating Voltage  $V=\sqrt{(P*R)}$

## CHARACTERISTICS

Item	Specification	Test Method
Temperature Coefficient of Resistance	As spec	MIL-STD-202F-Method 304 +25/-55/+25/+125/+25°C
Short Time Overload	± 0.5%	JIS-C-5202-5.5 RCWV*2.5 or Max overloading voltage 5 seconds
	ΔR±1% for high power rating	
Dielectric Withstand Voltage	by Type	MIL-STD-202F-Method 301 Apply Max Overload Voltage for 1 minute
Insulations Resistance	>1000MΩ	MIL-STD-202F-Method 302 Apply 100VDC for 1 minute
Thermal Shock	± 0.5%	MIL-STD-202F-Method 107G -55°C~150°C, 100 Cycles
Load Life	± 1%	MIL-STD-202F-Method 108A RCWV, 70°C, 1.5 Hours on, 0.5 Hours off Total 1000~1048 Hours
Humidity (Steady State)	± 0.5%	MIL-STD-202F-Method 103B 40°C, 90~95%RH, RCWV 1.5 Hours ON, 0.5 Hours OFF, Total 1000~1048 Hours
Resistance to Dry Heat	± 0.5%	JIS-C-5202-7.2 96 Hours @ +155°C without load
Low Temperature Operation	± 0.5%	JIS-C-5202-7.1 1 Hour, -65°C followed by 45 minutes RCWV
Bending Strength	As spec	JIS-C-5202-6.1.4 Bending Amplitude 3mm for 10 seconds
Solderability	95%min coverage	MIL-STD-202F Method 208H 245°C±5°C, 2±0.5 (sec)
Resistance to Soldering Heat	± 0.5%	MIL-STD-202F Method 210E 260°C±5°C, 10±1 seconds

Storage Temperature : 25±3°C, Humidity <80%RH

### Derating Curve



### TAPE PACKAGING

SIZE	Qty/Reel
0402	10000 Pcs
0603	5000 Pcs
0805	5000 Pcs
1206	5000 Pcs
1210	5000 Pcs
2010	4000 Pcs
2512	4000 Pcs
1225	2000 Pcs
3720	2000 Pcs
7520	2000 Pcs

CURRENT SENSING CHIP RESISTORS -- T Y P E R S 7 3

ORDERING INFORMATION

RS73	C	3A	R001	F	T	F
Series	Temprature Coefficient (T.C.) A=±100PPM/°C T=±150PPM/°C L=±200PPM/°C G=±300PPM/°C P=±500PPM/°C	Power Rating 2V = 0.125W 2X / 2C / 2N = 0.063W / 0.1W / 0.125W 2A / 2D / 2K = 0.1W / 0.125W / 0.25W 2B / 2E / 2Q = 0.125W / 0.25W / 0.5W 2F / 2G / 2M = 0.25W / 0.5W / 0.70W 2H / 2I = 0.5W / 1W 3A / 3B = 1W / 2W 3C = 3W 3D = 1W 3E = 2W	Resistance Value R001 = 0.001Ω R010 = 0.010Ω R220 = 0.220Ω	Tolerance F=±1% G=±2% J=±5%	Tape and Reel	LeadFree/ RoHs