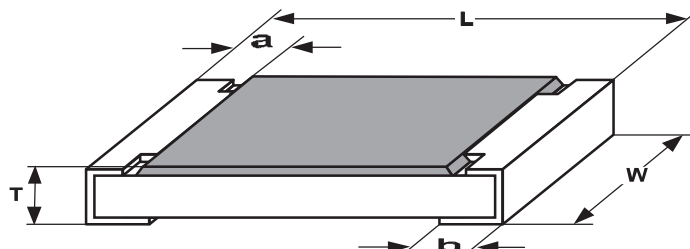


ENHANCED POWER CHIP RESISTORS

(RPC&RPL SERIES)



Applications

Switching model power supply
Portable Hi-Fi
Electronic device
Consumer Electronics
Motherboard

Dimension

Style	L	W	a	b	T
RPC-06 0603	1.60±0.10	0.80±0.10	0.30±0.10	0.30±0.15	0.45±0.15
RPC-10 0805	2.00±0.10	1.25±0.10	0.40±0.20	0.40±0.20	0.50±0.15
RPC-18 1206	3.10±0.10	1.60±0.10	0.50±0.20	0.45±0.20	0.60±0.15
RPC-20 1210	3.20±0.20	2.60±0.15	0.50±0.25	0.50±0.25	0.55±0.10
RPC-22 2010	5.00±0.20	2.50±0.20	0.65±0.25	0.60±0.25	0.55±0.10
RPC-24 2512	6.40±0.20	3.20±0.20	0.65±0.25	0.90±0.25	0.60±0.10

General Specification

Style Size	Power rating at 70°C	Max working voltage	Max overload voltage	Resistance tolerance %	Resistance range	TCR ppm/°C
RPC-06 0603	1/8W	50V	100V	±1%F ±5%J	10Ω~1M 0Ω,1Ω~1M	±100ppm ±200ppm
RPC-10 0805	1/4W	150V	300V			
RPC-18 1206	1/2W	200V	400V			
RPC-20 1210	3/4W	200V	400V			
RPC-22 2010	1W	200V	400V			
RPC-24 2512	2W	300V	600V			

0Ω Jumper:

0603 maximum resistance $R_{max} \leq 20m\Omega$ and rated current $I_r \leq 2A$

0805, 1206, 1210 maximum resistance $R_{max} \leq 20m\Omega$ and rated current $I_r \leq 4A$

2010, 2512 maximum resistance $R_{max} \leq 20m\Omega$ and rated current $I_r \leq 6A$

ENHANCED POWER CHIP RESISTOR

Characteristics (RPC $\geq$ 1 Ohm)

Performance Test	Test Method	Rating
DC Resistance	IEC 60115-1 4.5/JIS C 5202 5.1 Measure the Resistance value.	J:±5%, F:±1%
Short Time Overload	IEC 60115-1 413/JIS C 5202 5.5 5 X rated voltage or Max. Overload voltage for 5 sec. measure resistance after 30 minutes	J: $\Delta R \pm (2\% + 0.1\Omega)$ F: $\Delta R \pm (1\% + 0.05\Omega)$
Solderability	IEC 60115-1 417/JIS C 5202 6.5 After immersing flux, dip in the 235±2°C molten solder bath for 2±0.5 sec.	Over 95% of termination must be covered with solder
Resistance to Solder Heat	IEC 60115-1 418/JIS C 5202 6.4 With 260±5°C for 10±1 sec.	J: $\Delta R \pm (1\% + 0.1\Omega)$ F: $\Delta R \pm (0.5\% + 0.05\Omega)$ No mechanical damage
Temperature Coefficient of Resistance (TCR)	IEC 60115-4.8.4.2/JIS C 5202 5.2 Test Temperature : 25°C(T1)→-55°C(T1) 25°C(T1)→+155°C(T2) TCR(ppm/°C)= T1:25°C T2: Test temperature R1: Resistance at reference temperature (T1) R2: Resistance at reference temperature (T2)	J:±200ppm/°C F:±100ppm/°C
Load life Humidity	IEC 60115-1 4.24.2/JIS C 5202 7.9 Maintain the temperature of the resistor at 40±2°C and 90~95% R.H. with the rated voltage applied. Cycle ON for 1.5 hours and OFF for 0.5 hour for 1000+48/- 0 hours. After 1~4 hours, measure the resistance value,	J: $\Delta R \leq \pm (3\% + 0.1\Omega)$ F: $\Delta R \leq \pm (0.5\% + 0.05\Omega)$
Load Life	IEC 60115-1 4.25.1/JIS C 5202 7.10 Permanent resistance change after 1000+48/-0 hours (1.5 hours ON, 0.5 hour OFF) at RCWV or Max. keep the resistor at 70±3°C ambient	J: $\Delta R \leq \pm (3\% + 0.1\Omega)$ F: $\Delta R \leq \pm (0.5\% + 0.05\Omega)$
Temperature Cycle	IEC 60115-1 4.19/JIS C 5202 7.4 Repeat 5 cycles as follows -55°C(30 min.)~ +25°C(2~3 min) +155°C(30 min.)~ +25°C(2~3 min)	J: $\Delta R \leq \pm (1\% + 0.1\Omega)$ F: $\Delta R \leq \pm (0.5\% + 0.05\Omega)$ No mechanical damage
Insulation Resistance	IEC 60115-1 4.6.1.1/JIS C 5202 5.6 Test voltage: 100±15V	Between termination and coating must be over 1000MΩ
Bending Strength	IEC 60115-1 4.33 Resistance change after bent on the 90mm PCB. Bend: 3mm for 0603, 0805, 2mm for 1206, 2010, 2512	J: $\Delta R \leq \pm (1\% + 0.1\Omega)$ F: $\Delta R \leq \pm (0.5\% + 0.05\Omega)$ No mechanical damage

ENHANCED POWER CHIP RESISTORS

RPL SERIES (LOW RESISTANCES)

General Specification

Style (Size)	Power rating at 70°C	Max working voltage	Max overload voltage	Resistance tolerance%	Resistance range Min. Max.	Standard TCR ppm/°C	Low TCR ppm/°C
RPL-06 (0603)	1/8W	477mV	954mV	±1%F	47mΩ 91mΩ 100mΩ 470mΩ 510mΩ 910mΩ	±400ppm ±300ppm ±200ppm	±200ppm ±100ppm ±100ppm
RPL-10 (0805)	1/4W	511mV	1102mV				±150ppm ±100ppm ±100ppm
RPL-18 (1206)	1/2W	675mV	1349mV				
RPL-22 (2010)	1W	954mV	1908mV	±5%J	10mΩ 20mΩ 21mΩ 50mΩ 51mΩ 91mΩ 100mΩ 910mΩ	±600ppm ±400ppm ±300ppm ±200ppm	— — — ±100ppm
RPL-24 (2512)	2W	1349mV	2698mV				

Parts Number system

<u>RPC</u>	—	<u>18</u>	<u>104</u>	<u>J</u>	<u>R</u>
Series	Size	Resistances	Tolerance	Standard packaging	
RPC- Standard resistances	06 = 0603 10 = 0805 18 = 1206	Please refer to marking explanation	J= ±5% F= ±1%	R=paper tape reel 0603,0805,1206-5000pcs/reel	
RPL- Low ohmic resistance	22 = 2010 24 = 2512			K=Embossed plastic tape reel 2010,2512 - 4000pcs/reel	



ENHANCED POWER CHIP RESISTOR

Characteristics (RPL 47m ohm~910m Ohm)

Performance Test	Test Method	Rating
DC Resistance	IEC 60115-1 4.5/JIS C 5202 5.1 Measure the resistance value.	J:±5%, F:±1%
Short Time Overload	IEC 60115-1 413/JIS C 5202 5.5 5 X rated voltage or Max. Overload voltage for 5 sec.measure resistance after 30 minutes	J: $\Delta R \leq \pm (2\%+0.5m\Omega)$ F: $\Delta R \pm (1\%+0.05m\Omega)$
Solderability	IEC 60115-1 417/JIS C 5202 6.5 After immersing flux, dip in the 235±2°C molten solder bath for 2±0.5 sec.	Over 95% of termination must be covered with solder
Resistance to Solder Heat	IEC 60115-1 418/JIS C 5202 6.4 With 260±5°C for 10±1 sec.	J: $\Delta R \pm (1\%+0.5m\Omega)$ F: $\Delta R \pm (0.5\%+0.05m\Omega)$ No mechanical damage
Temperature Coefficient of Resistance (TCR)	IEC 60115-4.8.4.2/JISC 5202 5.2 Test Temperature : 25°C(T1)-->-55°C(T1) TCR(ppm/°C)= T1:25°C T2: Test temperature R1: Resistance at reference temperature (T1) R2:Resistance at reference temperature (T2)	0603 47mΩ~91mΩ: ±200ppm/°C 0805 47mΩ~91mΩ: ±150ppm/°C 1206,2010,2512 47mΩ~91mΩ: ±100ppm/°C 0603,0805,1206,2010,2512 100mΩ~91mΩ: ±100ppm/°C
Load life Humidity	IEC 60115-1 4.24.2/JIS C 5202 7.9 Maintain the temperature of the resistor at 40±2°C and 90~95% R.H.with the rated voltage applied. Cycle ON for 1.5 hours and OFF for 0.5 hour for 1000+48/- 0 hours. After 1~4 hours, measure the resistance value.	J: $\Delta R \leq \pm (3\%+0.5m\Omega)$ F: $\Delta R \leq \pm (0.5\%+0.05m\Omega)$
Load Life	IEC 60115-1 4.25.1/JIS C 5202 7.10 Permanent resistance change after 1000+48/-0 hours (1.5 hours ON,0.5 hour OFF) at RCWV or Max. keep the resistor at 70±3°C ambient	J: $\Delta R \leq \pm (3\%+0.5m\Omega)$ F: $\Delta R \leq \pm (0.5\%+0.05m\Omega)$
Temperature Cycle	IEC 60115-1 4.19/JIS C 5202 7.4 Repeat 5 cycles as follows -55°C(30 min.)~ +25°C(2~3 min) +155°C(30 min.)~ +25°C(2~3 min)	J: $\Delta R \leq \pm (1\%+1 m\Omega)$ F: $\Delta R \leq \pm (0.5\%+1m\Omega)$ No mechanical damage
Insulation Resistance	IEC 60115-1 4.6.1.1/JIS C 5202 5.6 Test voltage: 100±15V	Between termination and coating must be over 1000MΩ
Bending Strength	IEC 60115-1 4.33 Resistance change after bent on the 90mm PCB. Bend: 3mm for 0603,0805, 2mm for 1206,21010,2512	J: $\Delta R \leq \pm (1\%+1m\Omega)$ F: $\Delta R \leq \pm (0.5\%+1m\Omega)$ No mechanical damage

