

NEW

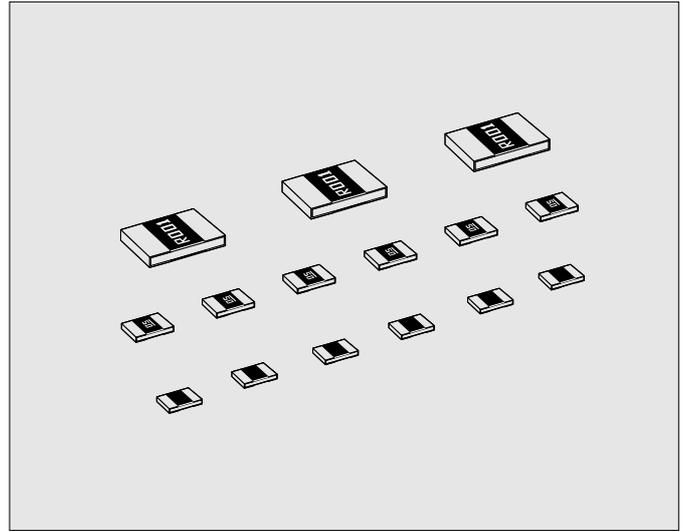
METAL-PLATE CHIP RESISTORS; LOW OHM

KAMAYA OHM

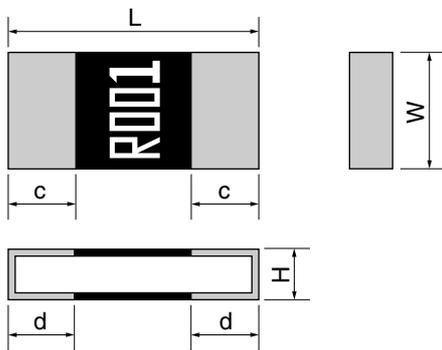
RLP,MLP

●Features

1. New Lineup, 0603, 1206 inch size, 5mΩ, 10mΩ, 15mΩ.
2. Suitable for current sensing of battery pack, mother board and power supply.
3. Pb*1, Halogen*2 and Antimony*3 free product
 - *1 Pb ≤ 1000ppm
 - *2 Cl or Br ≤ 900ppm, Cl+Br ≤ 1500ppm
 - *3 Sb₂O₃ ≤ 900ppm
4. Stability Class: 5%



●Dimensions



Rated Resistance is marked on the over coating.
Please refer to Rated Resistance Table on next page.

Unit : mm

Style	Metric	Inch	Rated Resistance	L	W	H	c	d	*Unit weight/pc.
RLP16	1608	0603	10m	1.6 ± 0.1	0.8 ± 0.1	0.3 ± 0.1	0.2 ± 0.1	0.3 ± 0.1	2mg
NEW RLP32	3216	1206	1m	3.2 ± 0.15	1.6 ± 0.15	0.32 ± 0.15	1.1 ± 0.25	1.1 ± 0.25	12mg
			5m			0.35 ± 0.10			0.5 ± 0.25
			10m			0.28 ± 0.10	9mg		
			15m			0.22 ± 0.10	6mg		
RLP63	6332	2512	1m	6.3 ± 0.25	3.2 ± 0.25	0.38 ± 0.15	2.2 ± 0.25	2.2 ± 0.25	50mg
			5m			0.34 ± 0.15			1.95 ± 0.25
			10m		3.1 ± 0.25	0.23 ± 0.15	0.95 ± 0.25	0.95 ± 0.25	30mg
			15m			0.58 ± 0.15			2.2 ± 0.25
MLP63			5m			0.51 ± 0.15	1.1 ± 0.25	1.1 ± 0.25	64mg

*Values for reference

●Part Number Description

Example

Style		K	R005	F	TE
Product Type	Size	Temperature Coefficient of Resistance	Rated Resistance	Tolerance on Rated Resistance	* Packaging & Standard Qty. (Min.)
RLP	Code Metric Inch		e.g.: R001=1mΩ R010=10mΩ	F ± 1% J ± 5%	TP Paper Tape 5,000pcs. RLP16 RLP32
MLP	16 1608 0603				TE Embossed Tape 4,000pcs. RLP63 MLP63
	32 3216 1206				
	63 6332 2512				

*Refer to Tape and Packaging information on page 56 and 57.

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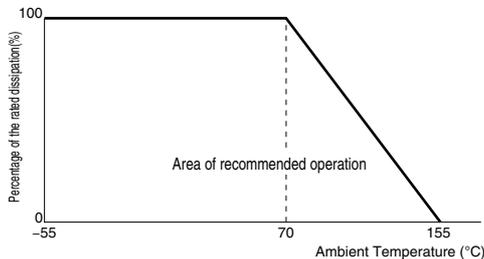
●Ratings

Style	Size Metric (Inch)	Rated Dissipation at 70°C W	Rated Current Range A	Combination of Rated Resistance Range and Temperature Coefficient of Resistance		Tolerance on Rated Resistance	Isolation Voltage V	Category Temperature Range °C	
				Rated Resistance Range	Temperature Coefficient of Resistance				
					Code				10 ³ /°C
RLP16	1608 (0603)	0.33	5.74	10m	K ±100 N ±70	F(±1%) J(±5%)	100	-55~+155	
RLP32	3216 (1206)	1	31.6	1m	- ±150 K ±100				
			8.16,10,14.1	5m ,10m ,15m	K ±100 N ±70				
					- ±150 N ±70				
			RLP63	6332 (2512)	2				44.7
1	8.16,10,14.1	5m ,10m ,15m							K ±100 N ±70
			MLP63		2				20,31.6

Note1. Rated Current = $\sqrt{(\text{Rated Dissipation})/(\text{Rated Resistance})}$
 Note2. Rated Voltage = $\sqrt{(\text{Rated Dissipation}) \times (\text{Rated Resistance})}$. (d.c. or a.c. r.m.s. Voltage)
 Note3. Please contact Kamaya Sales Dept. for any other resistance values.

●Derating Curve

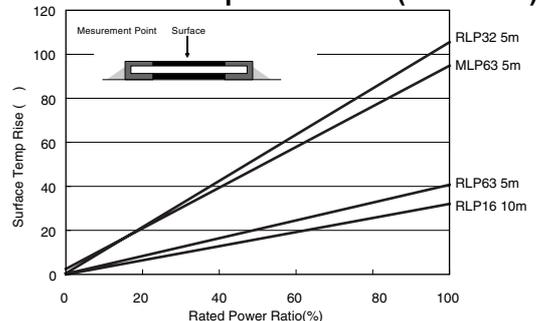
The derated values of dissipation for temperatures in excess of 70°C shall be indicated by the following Curve.



●Climatic Category

55/155/56
 Lower Category Temperature -55°C
 Upper Category Temperature +155°C
 Duration of the Damp heat, Steady-State Test 56 days

●Surface Temperature Rise (Reference)

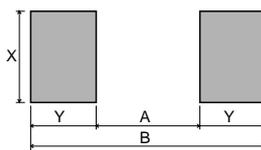


*Because values are different, please contact Kamaya salesdepartment for the details about deployment condition and terms of use.

●Rated Resistance

Style	Resistance	Marking
RLP16	10m	Please contact Kamaya for Marking.
RLP32	1m	.01
	5m	.05
	10m	.10
	15m	.15
RLP63	1m	R001
	5m	R005
	10m	R010
	15m	R015
MLP63	2m	R002
	5m	R005

●Recommended land Pattern



Style	Metric	Inch	Rated Resistance	A	B	X	Y
RLP16	1608	0603	10m	1.0	2.2	0.8	0.6
			1m	1.0			1.45
RLP32	3216	1206	5m	1.4	3.9	1.7	1.25
			10m	2.1			0.9
			15m				
			1m	2.0		2.8	
RLP63	6332	2512	5m	2.4	7.6	3.5	2.6
			10m	4.0			1.8
			15m				
MLP63			2m	1.8			2.9
			5m	4.0			1.8

*Values for reference

●Performance Characteristics JIS C 5201-1 : 1998

Description	Requirements	Test Methods
Voltage proof	No breakdown or flashover R _z ≥1G ohm	Clause 4.7 100V.a.c.,60s
Variation of resistance with temperature	See Ratings Table	Clause 4.8 Measuring temperature : +20°C/+155°C/+20°C
Overload	ΔR _z ±1% No visible damage, legible marking	Clause 4.13 The applied voltage shall be 2.5 times of Rated Voltage, or equivalent current 2s.
Solderability	In accordance with Clause 4.17.4.5	Clause 4.17 235°C, 2s
Resistance to soldering heat	ΔR _z ±1%	Clause 4.18 After immersion into the flux, the immersion into solder shall be carried out in Solder bath at 260°C for 5s.
Rapid change of temperature	ΔR _z ±1% No visible damage	Clause 4.19 5 cycles between -55°C and +155°C.
Climatic sequence	ΔR _z ±5% No visible damage	Clause 4.23 Dry/Damp heat(12+12h cycle), first cycle/ Cold/Damp heat(12+12h cycle), remaining cycle./ D.C.Load.
Damp test, steady state	ΔR _z ±5% No visible damage, legible marking	Clause 4.24 40°C, 95%R.H., 56 days, test a) of Clause 4.24.2.1
Endurance at 70°C	ΔR _z ±5% No visible damage	Clause 4.25.1 Rated current, 1.5h "ON", 0.5h "OFF", 70°C, 1,000h.
Endurance at the upper category temperature	ΔR _z ±5% No visible damage	Clause 4.25.3 155°C, no-load, 1,000h.
Adhesion	No visible damage	Clause 4.32 5N, 10s
Bend strength of the face plating	ΔR _z ±1%	Clause 4.33 RLP16, RLP32 Amount of bend : 3mm RLP63, MLP63 Amount of bend : 1 mm

●Precautions of use

Resistance value will be changed by soldering condition.
 Please design products in consideration of this change of resistance value.