High Power Chip Resistor Kits

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SMD Resistor Kit

Ratings

Type	MP000458	MP000459	MP000460	MP000461	MP000462
Power Rating	1/10W (0.1W)	1/5W (0.2W)	1/3W (0.33W)	1/2W (0.5W)	2W
Rate current (Jumper)	1A		2A		
Max. Overload Current (Jumper)	2A		5A	10A	
Max. Working Voltage	50V		150V	200V	250V
Max. Overload Voltage	100V		300V	400V	500V
Dielectric Withstanding Voltage	100V	300V	500V	500V	500V
Temperature Range	-55°C to +155°C				
Ambient Temperature	+70°C				

Construction

- Marking
- G2 coating
- G1 coating
- Resistive element
- High purity Alumina substrate
- Termination (Outer) Sn
- Termination (Middle) Ni Barrier
- Termination (Inner) Ag
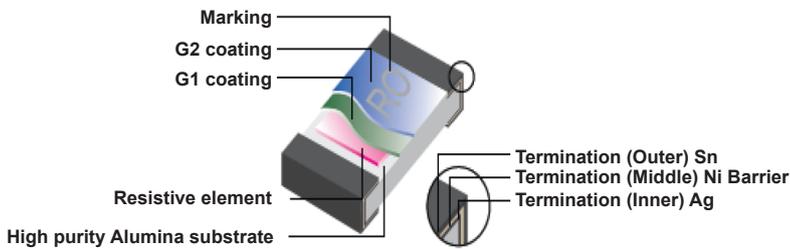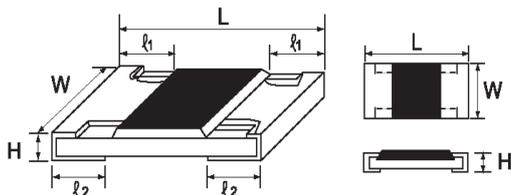
Dimensions

Type	L	W	H	ℓ1	ℓ2
MP000458	1 ±1	0.5 ±0.05	0.35 ±0.05	0.2 ±0.1	0.25 ±0.1
MP000459	1.6 ±0.1	0.8 +0.15 - 0.1	0.45 ±0.1	0.3 ±0.2	0.3 ±0.2
MP000460	2 ±0.15	1.25 +0.15 - 0.1	0.55 ±0.1	0.4 ±0.2	0.4 ±0.2
MP000461	3.1 ±0.15	1.55 +0.15 - 0.1	0.55 ±0.1	0.45 ±0.2	0.45 ±0.2
MP000462	6.35 ±0.1	3.2 +0.15	0.55 ±0.1	0.6 ±0.25	0.5 ±0.2

Dimensions : Millimetres

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Power Rating

Type	Power Rating at 70°C	Tolerance %	Resistance Range
MP000458	1/10W (0.1W)		Jumper
			10Ω ~ 1MΩ
MP000459	1/5W (0.2W)		Jumper
			10Ω ~ 1MΩ
MP000460	1/3W (0.33W)	1	Jumper
			10Ω ~ 1MΩ
MP000461	1/2W (0.5W)		Jumper
			10Ω ~ 1MΩ
MP000462	2W		Jumper
			10Ω ~ 1MΩ

Power Rating

Resistors shall have a power rating based on continuous load operation at an ambient temperature of 70°C. For temperature in excess of 70°C, the load shall be derate as shown in figure.
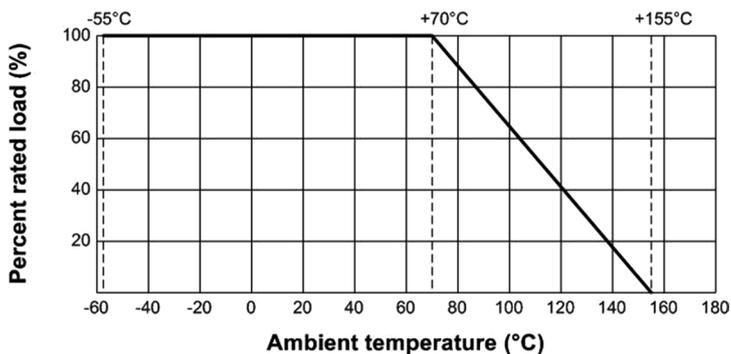
Performance Specification

| Characteristics	Limits	Test Methods (JIS C 5201-1)
Insulation resistance	1,000 MΩ or more	Apply 500V DC between protective coating and termination for 1 min, then measure
Dielectric withstanding voltage	No evidence of flashover mechanical damage, arcing or insulation break down	Apply 500V AC between protective coating and termination for 1 minute
Temperature coefficient	1Ω ~ 10Ω : ≤ ±200 PPM/°C 11Ω ~ 10MΩ : ≤ ±200 PPM/°C	Natural resistance change per temp. degree centigrade.$$\frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^6 \quad (PPM/°C)$$ R_1: Resistance value at room temperature (t1) R_2: Resistance value at room temp. plus 100°C (t2) Test pattern: room temp. (T1), room temp. +100°C (T2)

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Characteristics	Limits	Test Methods (JIS C 5201-1)
Short time overload	Resistance change rate is ± (1% + 0.1Ω) Max.	Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds
Solderability	95 % coverage Min.	Wave Solder Test temperature of solder: 245°C ±3°C dipping time in solder : 2-3 seconds. Reflow Temperature profile for avaluation
Soldering Heat	Resistance change rate is: ±(1% +0.05Ω) Max.	Dip the resistor into a solder bath having a temperature of 260°C ±3°C and hold it for 10 ±1 seconds.
Temperature Cycling	Resistance change rate is ±1% (0.5% + 0.05Ω) Max.	Resistance change after continuous 5 cycles for duty cycle specified below:
Load life in Humidity	Resistance change rate is ±1% (1% + 0.1Ω) Max.	Resistance change after 1,000 hours (1.5 hours "on", 0.5 hour "off") at RCWV in a humidity chamber controlled at 40°C ±2°C and 90 to 95 % relative humidity
Load Life	Resistance change rate is ±1% (1% + 0.1Ω) Max.	Permanent resistance change after 1,000 hours operating at RCWV, with duty cycle of (1.5 hours"on", 0.5 hour"off") at 70°C ±2°C ambient
Terminal Bending	Resistance change rate is ±(1% +0.05Ω) Max.	Twist of Test Board : Y/X = 3/90mm for 60 seconds
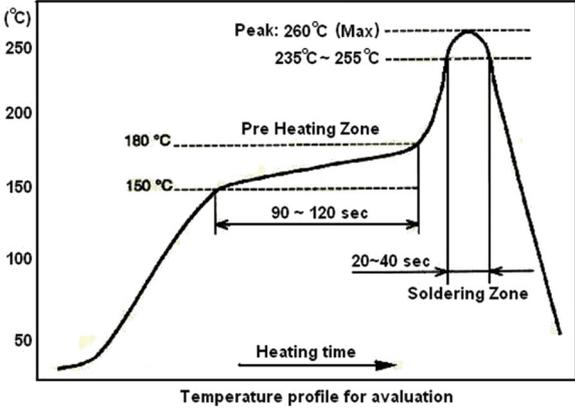
Duty cycle table (within Temperature Cycling test method):

Step	Temperature	Time
1	-55°C ± 3°C	30 mins
2	Room temp.	10 to 15 mins
3	+155°C ± 2°C	30 mins
4	Room temp.	10 to 15 mins

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Kit Resistors

Insert for Chip Kit
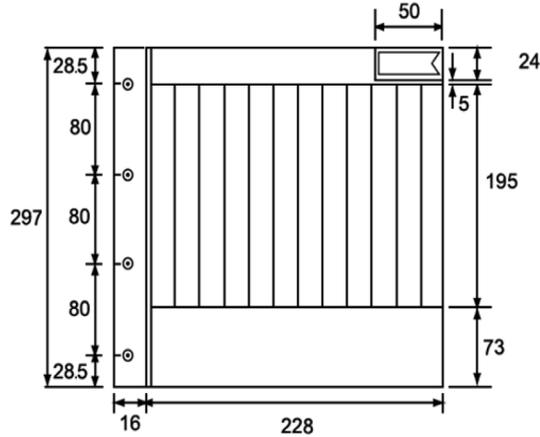
Dimensions : Millimetres

Chip Kit Resistors:

E24 Series : 121 values (0ohm & 10ohm to 1Mohm)
Quantity   : 50pcs and 100pcs per value

No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
1	0R	21	68R	41	470R	61	3K3	81	22K	101	150K
2	10R	22	75R	42	510R	62	3K6	82	24K	102	160K
3	11R	23	82R	43	560R	63	3K9	83	27K	103	180K
4	12R	24	91R	44	620R	64	4K3	84	30K	104	200K
5	15R	25	100R	45	680R	65	4K7	85	33K	105	220K
6	16R	26	110R	46	750R	66	5K1	86	36K	106	240K
7	18R	27	120R	47	820R	67	5K6	87	39K	107	270K
8	20R	28	130R	48	910R	68	6K2	88	43K	108	300K
9	22R	29	150R	49	1K	69	6K8	89	47K	109	330K
10	24R	30	160R	50	1K1	70	7K5	90	51K	110	360K
11	27R	31	180R	51	1K2	71	8K2	91	56K	111	390K
12	30R	32	200R	52	1K3	72	9K1	92	62K	112	430K
13	33R	33	220R	53	1K5	73	10K	93	68K	113	470K
14	36R	34	240R	54	1K6	74	11K	94	75K	114	510K
15	39R	35	270R	55	1K8	75	12K	95	82K	115	560K
16	43R	36	300R	56	2K	76	13K	96	91K	116	620K
17	47R	37	330R	57	2K2	77	15K	97	100K	117	680K
18	51R	38	360R	58	2K4	78	16K	98	110K	118	750K
19	56R	39	390R	59	2K7	79	18K	99	120K	119	820K
20	62R	40	430R	60	3K	80	20K	100	130K	120	910K
										121	1M

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Part Number Table

Description	Qty.	Part Number
Chip Resistor Kit, 0402, E-24, 1%, 0ohm to 1Mohm	12100	MP000458
Chip Resistor Kit, 0603, E-24, 1%, 0ohm to 1Mohm	6050	MP000459
Chip Resistor Kit, 0805, E-24, 1%, 0ohm to 1Mohm	6050	MP000460
Chip Resistor Kit, 1206, E-24, 1%, 0ohm to 1Mohm	6050	MP000461
Chip Resistor Kit, 2512, E-24, 1%, 0ohm to 1Mohm	6050	MP000462

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