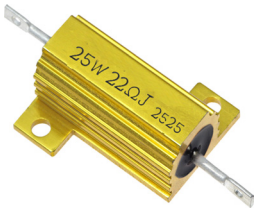
Power Dissipiation Mount Fixed Resistor



RoHS Compliant

Type	Power Rating	Resistance tolerance	Nominal Resistance
MCPDMT	50W	F/J	0.01Ω ~ 25KΩ

Ratings:

Type	MCPDMT	
Rated Power at 25°C	50W	
Max. Working Voltage	1,250V	
Dielectric Withstanding Voltage	2,000 V	
Rated Ambient Temp.	25°C	
Operating Temp. Range	-55°C --- +275°C	
Tolerance	1%	5%
Resistance Range	0.1Ω ~ 22KΩ	0.05Ω ~ 47KΩ
Highest Ohmic Value	25KΩ	47KΩ

Power rating:

Resistors shall have a power rating based on continuous full load operation at ambient temperature of 25°C.

Voltage rating:

Resistors shall have a rated direct-current (DC) continuous working voltage or an approximate sine-wave root-mean-square (RMS) alternating-current (AC) continuous working voltage at commercial- line frequency and waveform corresponding to the power rating , as determined from the following formula:

RCWV = $\sqrt{P \times R}$

Note : Max. Working Voltage or $\sqrt{P \times R}$ whichever is lesser

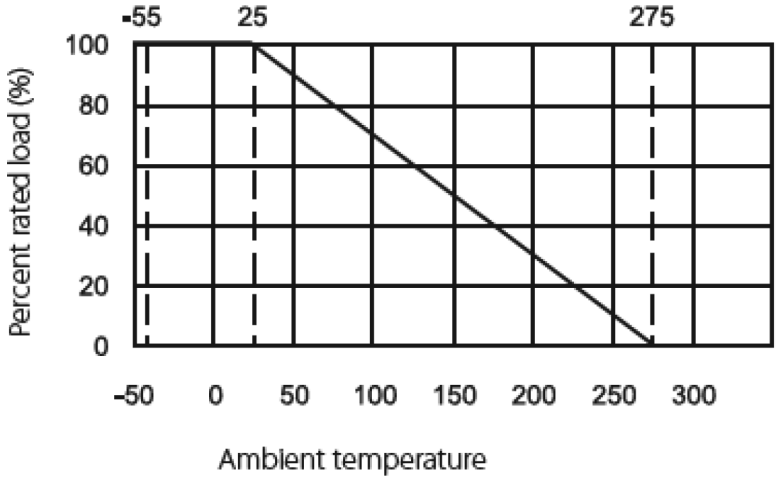
Max. Overload Voltage or 2.5 $\sqrt{P \times R}$ whichever is lesser

Where : RCWV = Rated DC or RMS AC continuous working voltage at commercial-line frequency and waveform (volt)

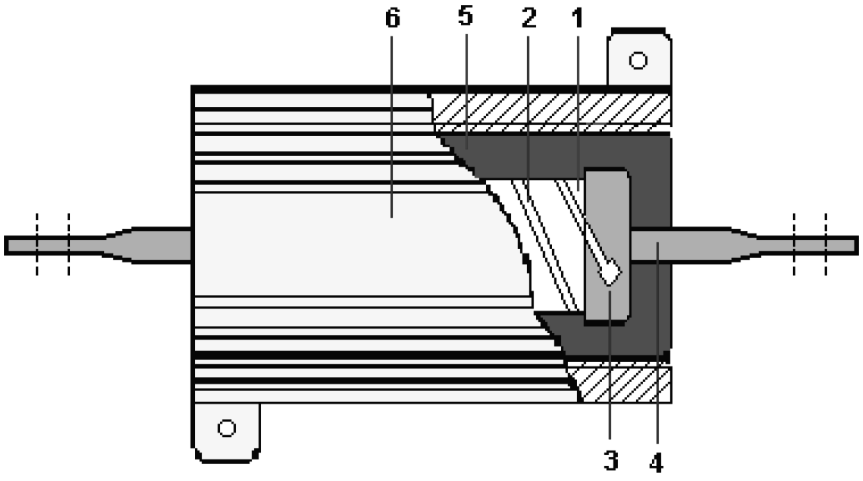
P = Power Rating (watt)

R = Nominal Resistance (ohm)

Derating Curve



Construction



Confirmation List of Material

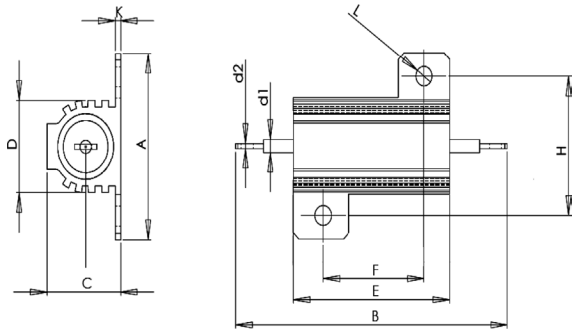
No.	Material Generic Name
1	Ceramic Rod
2	Resistance Wire
3	Cap
4	Terminal Lead
5	Plastic Molding Compound
6	Aluminium Shell

Performance specification

Characteristics	Limits	Test Methods (JIS C 5201-1, MIL 18546)
Dielectric withstanding voltage	± (0.2 % + 0.05 Ω) ΔR	Tested at AC potential respectively for 1 min. (MIL 18546)
Temperature coefficient	<0.18Ω : ± 1600 PPM/°C 0.18Ω - 0.2Ω : ± 450 PPM/°C 0.22Ω - 0.39Ω : ± 200 PPM/°C 0.43Ω - 65Ω : ± 100 PPM/°C >66Ω : ± 180 PPM/°C	4.8 Natural resistance change per temp. degree centigrade. $\frac{R2-R1}{R1(t2-t1)} \times 10^6$ (PPM/°C) R1: Resistance value at room temperature (t1) R2: Resistance value at room temp. plus 100°C (t2) (JIS C 5201-1)
Short time overload	± (0.5 % + 0.05 Ω) ΔR	5 x rated power for 5 s (MIL 18546)
Terminal strength	± (0.2 % + 0.05 Ω) ΔR	30 sec, 10 pound pull test torque test - applicable for screw threads (MIL 18546)
Temperature	± (0.5 % + 0.05 Ω) ΔR	250°C for 2 h
Vibration High Frequency	± (0.2 % + 0.05 Ω) ΔR	Frequency varied 10 Hz to 2000 Hz, 20 g peak, 2 directions 6 h each (MIL 18546)
Solderability	95 % coverage Min.	4.17 The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes. Test temp. of solder : 245°C ± 3°C Dwell time in solder : 2 ~ 3 seconds (JIS C 5201-1)
Resistance to soldering heat	Resistance change rate is ± (1% + 0.05Ω) Max. with no evidence of mechanical damage	4.18 Permanent resistance change when leads immersed to 2.0 - 2.5 mm from the body in 260°C ± 5°C solder for 10 ± 1 seconds (JIS C 5201-1)
Temperature cycling	Resistance change rate is ± (5% + 0.05Ω) Max.	4.19 Resistance change after continuous 100 cycles for duty shown below: **Step / Temperature / Time** 1 / -55°C ± 3°C / 30 mins 2 / Room temp. / 10 to15 mins 3 / +155°C ± 2°C / 30 mins 4 / Room temp. / 10 to 15 mins
Humidity (Steady state)	Resistance change rate is ± (3% + 0.05Ω) Max. with no evidence of mechanical damage	4.24 Temporary resistance change after a 240 hours exposure in a humidity test chamber controlled at 40°C ± 2°C and 90 to 95% relative humidity. (JIS C 5201-1)
Load life	± (1.0 % + 0.05 Ω) ΔR	1000 h at rated power, +25°C, 1.5 h “ON”, 0.5 h “OFF” (JIS C 5201-1)

Characteristics	Limits	Test Methods (JIS C 5201-1, MIL 18546)
Load life in humidity	Resistance change rate is ± (5% + 0.05Ω) Max. with no evidence of mechanical damage	4.24.2.1 Resistance change after 1,000 hours operating at RCWV with duty cycle of (1.5 hours “on”, 0.5 hour “off”) in a humidity test chamber controlled at 40°C ± 2°C and 90 to 95 % relative humidity. (JIS C 5201-1)

Dimension



Type	A±0.5	B±1.5	C±1	D±1	E±1	F±0.5	H±0.5	K max	L±0.5	d1 ±0.1	d2 ±0.5
MCPDMT50W	30	75	15.7	15.5	50.5	40	21.5	3.2	3.5	2	0.8

Part Number Table

Description	Part Number
Power Resistor, 50W, 5%, B/B, 1.2K	MCPDMT50J0122B00
Power Resistor, 50W, 5%, B/B, 33R	MCPDMT50J0330B00
Power Resistor, 50W, 5%, B/B, 1.8R	MCPDMT50J018JB00
Power Resistor, 50W, 5%, B/B, 20R	MCPDMT50J0200B00
Power Resistor, 50W, 5%, B/B, 18R	MCPDMT50J0180B00
Power Resistor, 50W, 5%, B/B, 47R	MCPDMT50J0470B00
Power Resistor, 50W, 1%, B/B, 7.5R	MCPDMT50F750KB00
Power Resistor, 50W, 1%, B/B, 500R	MCPDMT50F5000B00
Power Resistor, 50W, 1%, B/B, 33R	MCPDMT50F330JB00
Power Resistor, 50W, 1%, B/B, 22R	MCPDMT50F220JB00
Power Resistor, 50W, 5%, B/B, 27R	MCPDMT50J0270B00
Power Resistor, 50W, 1%, B/B, 5.6R	MCPDMT50F560KB00
Power Resistor, 50W, 1%, B/B, 4R	MCPDMT50F400KB00
Power Resistor, 50W, 1%, B/B, 2R	MCPDMT50F200KB00
Power Resistor, 50W, 1%, B/B, 30R	MCPDMT50F300JB00

Power Resistor, 50W, 1%, B/B, 12R	MCPDMT50F120JB00
Power Resistor, 50W, 1%, B/B, 3.3R	MCPDMT50F330KB00
Power Resistor, 50W, 1%, B/B, 3R	MCPDMT50F300KB00
Power Resistor, 50W, 5%, B/B, 50R	MCPDMT50J0500B00
Power Resistor, 50W, 5%, B/B, 1.5R	MCPDMT50J015JB00
Power Resistor, 50W, 1%, B/B, 15R	MCPDMT50F150JB00
Power Resistor, 50W, 1%, B/B, 6.8R	MCPDMT50F680KB00
Power Resistor, 50W, 1%, B/B, 16R	MCPDMT50F160JB00
Power Resistor, 50W, 1%, B/B, 2.5R	MCPDMT50F250KB00
Power Resistor, 50W, 1%, B/B, 1.5R	MCPDMT50F150KB00
Power Resistor, 50W, 5%, B/B, 100R	MCPDMT50J0101B00
Power Resistor, 50W, 5%, B/B, 1.2R	MCPDMT50J012JB00
Power Resistor, 50W, 5%, B/B, 470R	MCPDMT50J0471B00
Power Resistor, 50W, 1%, B/B, 5R	MCPDMT50F500KB00
Power Resistor, 50W, 1%, B/B, 200R	MCPDMT50F2000B00
Power Resistor, 50W, 1%, B/B, 10R	MCPDMT50F100JB00
Power Resistor, 50W, 1%, B/B, 6R	MCPDMT50F600KB00
Power Resistor, 50W, 1%, B/B, 27R	MCPDMT50F270JB00
Power Resistor, 50W, 5%, B/B, 1R	MCPDMT50J010JB00
Power Resistor, 50W, 1%, B/B, 100R	MCPDMT50F1000B00
Power Resistor, 50W, 1%, B/B, 8R	MCPDMT50F800KB00
Power Resistor, 50W, 5%, B/B, 22R	MCPDMT50J0220B00
Power Resistor, 50W, 5%, B/B, 1.5K	MCPDMT50J0152B00
Power Resistor, 50W, 1%, B/B, 50R	MCPDMT50F500JB00
Power Resistor, 50W, 5%, B/B, 10R	MCPDMT50J0100B00
Power Resistor, 50W, 5%, B/B, 4.7R	MCPDMT50J047JB00
Power Resistor, 50W, 5%, B/B, 8.2R	MCPDMT50J082JB00
Power Resistor, 50W, 1%, B/B, 47R	MCPDMT50F470JB00
Power Resistor, 50W, 1%, B/B, 20R	MCPDMT50F200JB00
Power Resistor, 50W, 5%, B/B, 3.3R	MCPDMT50J033JB00
Power Resistor, 50W, 5%, B/B, 12R	MCPDMT50J0120B00
Power Resistor, 50W, 5%, B/B, 15R	MCPDMT50J0150B00
Power Resistor, 50W, 1%, B/B, 120R	MCPDMT50F1200B00
Power Resistor, 50W, 5%, B/B, 30R	MCPDMT50J0300B00
Power Resistor, 50W, 1%, B/B, 1R	MCPDMT50F100KB00
Power Resistor, 50W, 1%, B/B, 25R	MCPDMT50F250JB00
Power Resistor, 50W, 1%, B/B, 1K	MCPDMT50F1001B00
Power Resistor, 50W, 1%, B/B, 68R	MCPDMT50F680JB00
Power Resistor, 50W, 5%, B/B, 0.5R	MCPDMT50J050KB00

Power Resistor, 50W, 5%, B/B, 1K	MCPDMT50J0102B00
Power Resistor, 50W, 1%, B/B, 250R	MCPDMT50F2500B00
Power Resistor, 50W, 1%, B/B, 40R	MCPDMT50F400JB00
Power Resistor, 50W, 5%, B/B, 75R	MCPDMT50J0750B00
Power Resistor, 50W, 5%, B/B, 5R	MCPDMT50J050JB00
Power Resistor, 50W, 5%, B/B, 2.2R	MCPDMT50J022JB00
Power Resistor, 50W, 5%, B/B, 2.2K	MCPDMT50J0222B00
Power Resistor, 50W, 5%, B/B, 150R	MCPDMT50J0151B00