

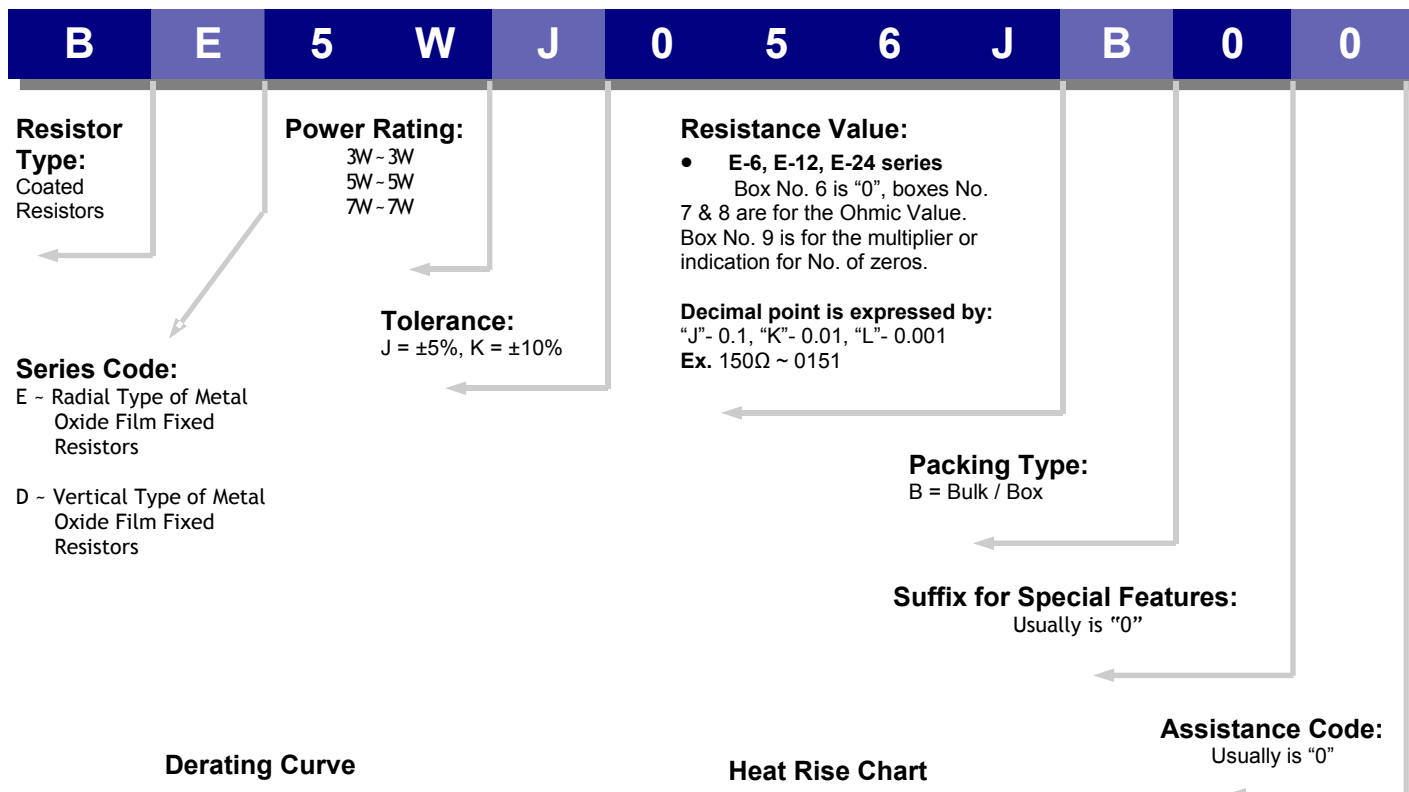
## TERMINAL TYPE OF METAL OXIDE FILM FIXED RESISTOR

### Features

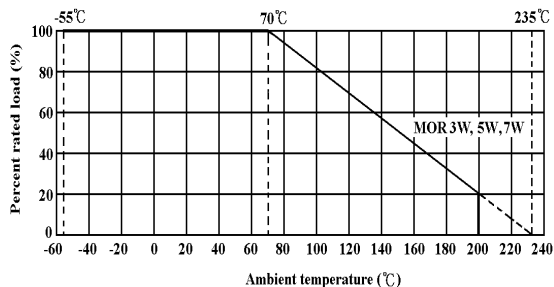
- High safety standard
- High purity ceramic core
- Excellent non-flaming coating
- Meet EIAJ-RC2655A requirements
- Stable performance in diverse environments
- Too low or too high ohmic value can be supplied on case to case basis



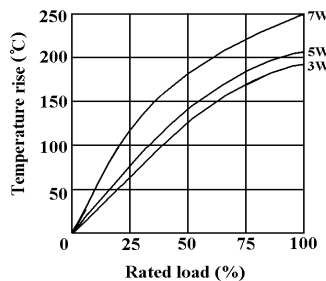
### Explanation of Part Number & Ordering Procedure:



**Derating Curve**

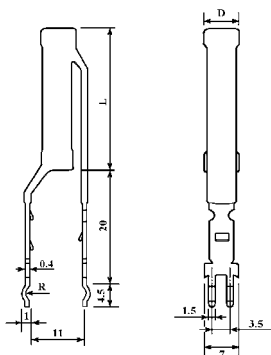


**Heat Rise Chart**

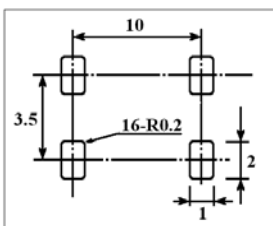
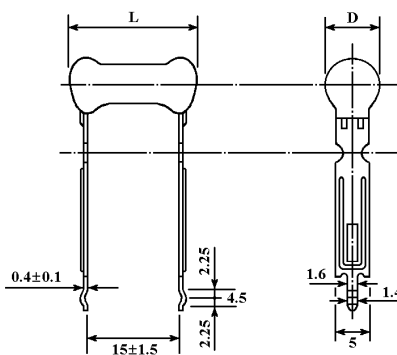


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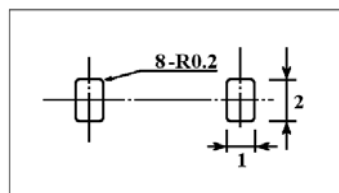
### (1) Vertical Type MOR Resistors



### (2) Radial Type MOR Resistors



\* Mounting hole dimensions on P.C.B (Reference)



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Part No.	Style	Power Rating at 70°C	Dimension (mm)		Max. Working Voltage	Max. Overload Voltage	Max. Pulse Overload Voltage	Resistance Range	Resistance Tolerance
			D ± 1	L ± 1					
BD5W	TMOV-500	5W	7	20	500V	800V	1500V	≤10Ω	±10%
								10Ω ~10KΩ	±5%
BD7W	TMOV-700	7W	7	30	500V	800V	1500V	≤10Ω	±10%
								10Ω ~10KΩ	±5%
BE3W	TMOR-300	3W	6	16	350V	600V	1000V	≤10Ω	±10%
								10Ω ~10KΩ	±5%
BE5W	TMOR-500	5W	7	18	500V	800V	1500V	≤10Ω	±10%
								10Ω ~10KΩ	±5%

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### Performance Specifications:

Characteristics	Test Methods	Limits															
Temperature coefficient JIS – C – 5202 5.2	Natural resistance change per temp. degree centigrade $\frac{R_2 - R_1}{R_1 (t_2 - t_1)} \times 10^6 \text{ (PPM / } ^\circ\text{C)}$ R <sub>1</sub> : Resistance value at room temperature (t <sub>1</sub> ) R <sub>2</sub> : Resistance value at room temp. plus 100°C (t <sub>2</sub> )	± 350PPM / °C <20Ω ± 400 PPM / °C															
Short – time overload JIS – C – 5202 5.5	Permanent resistance change after the application of a potential of 2.5 times RCWV or the max. overload voltage respectively specified in the above list, whichever less for 5 seconds.	Resistance change rate is ± (2% + 0.05Ω) No evidence of mechanical damage															
Dielectric withstanding voltage JIS – C – 5202 5.7	Resistors shall be clamped in the trough of a 90 ° metallic V- block and shall be tested at AC potential respectively.	No evidence of flashover mechanical damage, arcing or insulation break down.															
Pulse Overload JIS – C – 5202 5.8	Resistance change after 10,000 cycles (1 second “on”, 25 seconds “off”) at 4 times RCWV or the max. pulse overload voltage.	Resistance change rate is ± (5% + 0.05Ω) No evidence of mechanical damage															
Terminal strength JIS – C – 5202 6.1	<b>Direct load:</b> Resistance to a 2.5 kgs. direct load for 10 seconds in the direction of the longitudinal axis of the terminal leads. <b>Twist test:</b> Terminal leads shall be bent through 90° at a point of about 6mm from the body of the resistor and shall be rotated through 360° about the original axis of the bent terminal in alternating direction for a total of 3 rotations.	No evidence of mechanical damage.															
* RC Resistance to Soldering Heat JIS – C – 5202 6.4	Permanent resistance change when leads immersed to 3.2 mm to 4.8 mm from the body in 350°C ± 10°C solder for 3 ± 0.5 seconds	Resistance change rate is ± ( 1%+0.05 Ω) No evidence of mechanical damage.															
Solderability JIS – C – 5202 6.5	The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes. Test temp. of solder: 235°C ± 5°C Dwell time in solder: 3 +0.5/ -0 seconds	95% coverage Min.															
Resistance to solvent JIS – C – 5202 6.9	Specimens shall be immersed in a bath of trichroethane Completely for 3 minutes with ultrasonic.	No deterioration of protective coatings and markings.															
Temperature cycling JIS – C – 5202 7.4	Resistance change after continuous five cycles for duty cycle specified below: <table border="1" data-bbox="487 1522 1036 1780"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55°C±3°C</td> <td>30 mins.</td> </tr> <tr> <td>2</td> <td>Room temp.</td> <td>10 – 15 mins.</td> </tr> <tr> <td>3</td> <td>+155 °C±2 °C</td> <td>30 mins.</td> </tr> <tr> <td>4</td> <td>Room temp.</td> <td>10 – 15 mins.</td> </tr> </tbody> </table>	Step	Temperature	Time	1	-55°C±3°C	30 mins.	2	Room temp.	10 – 15 mins.	3	+155 °C±2 °C	30 mins.	4	Room temp.	10 – 15 mins.	Resistance change rate is ± ( 2%+0.05 Ω) No evidence of mechanical damage.
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\* RCWV = Rated Continuous Working Voltage =  $\sqrt{\text{Rated Power} \times \text{Resistance Value}}$

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### Performance Specifications:

Characteristics	Test Methods	Limits
Load life in humidity JIS - C - 5202 7.9	Resistance change after 1,000 hours operating at RCWV with duty cycle of (1.5 hours "on", 0.5 hour "off") at RCWV in a humidity test chamber controlled at 40°C ± 2°C and 90 to 95% relative humidity.	± (5% + 0.05Ω)
Load life JIS - C - 5202 7.10	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.	± (5% + 0.05Ω)
Non-Flame JIS - C - 5202 7.12	Resistors shall resist flaming or arcing when overloaded up to 16 times RCWV.	No evidence of flaming or arcing.

\* RCWV = Rated Continuous Working Voltage =  $\sqrt{\text{Rated Power} \times \text{Resistance Value}}$