

# Power Resistors

## Series MSP 35 SMD (MHP 35 for high temperature soldering) – TO 220

35 Watt Thick Film Power Resistors for Surface Mount including Metal Tab

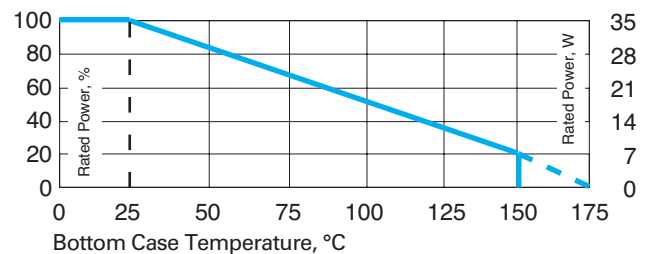
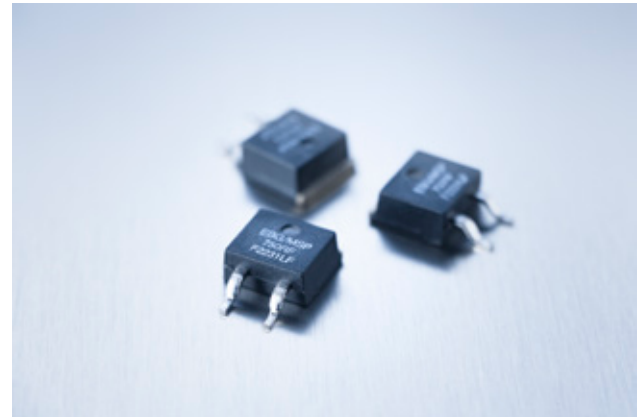
35 W Thick Film Power Resistors for surface mount including metal tab

### General Characteristics

- 35 W power rating at 25°C
- **SMD – TO-220** package configuration
- Heat resistance to cooling plate:  $R_{th} < 4.28 \text{ } ^\circ\text{K/W}$
- Molded case for environmental protection.
- Resistor element is electrically insulated from the metal sink tab.
- Housing material acc. to UL94-V0

### Specifications

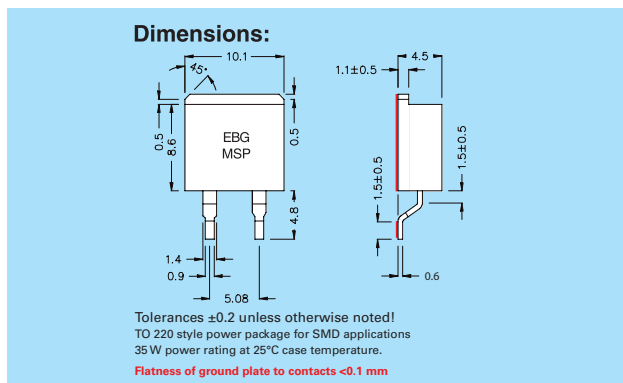
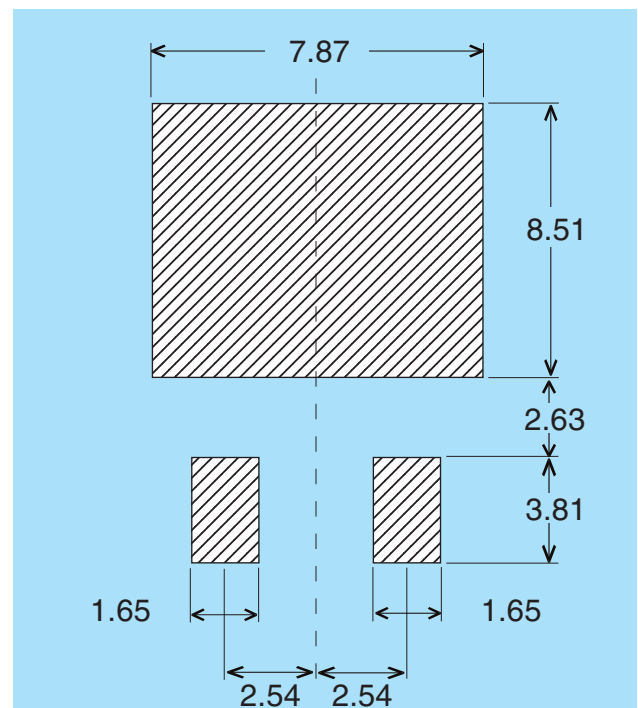
- Resistance range: 0.1  $\Omega$  to 1 M $\Omega$ , other values upon request
- Resistance tolerance:  $\pm 1\%$  to  $\pm 10\%$  ( $\pm 0.5\%$  upon request)
- Temperature coefficient: 10  $\Omega$  and above,  $\pm 50 \text{ ppm}/^\circ\text{C}$ , referenced to 25°C,  $\Delta R$  taken at  $+105^\circ\text{C}$ .  
Between 3  $\Omega$  and 10  $\Omega$ ,  $\pm(100 \text{ ppm} + 0.002 \text{ } \Omega) / ^\circ\text{C}$ , referenced to 25°C,  $\Delta R$  taken at  $+105^\circ\text{C}$ ,  $< 3\%$  please ask for details.
- Max. operating voltage: 350 V
- Dielectric strength: 1,800 V AC
- Insulation resistance: 10 G $\Omega$  min.
- Momentary overload: 2 times rated power with applied voltage not to exceed 1.5 times maximum continuous operating voltage for 5 seconds,  $\Delta R \pm(0.3\% + 0.01 \text{ } \Omega)$  max.
- Load life: MIL-R-39009, 2,000 hours at rated power,  $\Delta R \pm(1.0\% + 0.01 \text{ } \Omega)$ .
- Power rating: depends on case temperature. See derating curve.
- Moisture resistance: MIL-Std-202, Method 106,  $\Delta R = (0.5\% + 0.01 \text{ } \Omega)$  max.
- Thermal shock: MIL-Std-202, Method 107, Cond. F,  $\Delta R = (0.3\% + 0.01 \text{ } \Omega)$  max.
- Working temperature range:  $-55^\circ\text{C}$  to  $+175^\circ\text{C}$
- Terminal strength: MIL-Std-202, Method 211, Cond. A (Pull Test) 2.4N,  $\Delta R = (0.2\% + 0.01 \text{ } \Omega)$  max.
- Vibration, high frequency: MIL-Std-202, Method 204, Cond. D,  $\Delta R = (0.2\% + 0.01 \text{ } \Omega)$  max.
- Lead material: nickel-plated copper, dip-tinned
- Ground plate material: German silver
- Standard storage conditions: 0 to 85°C at 80% RH max. for min. 12 months. For different conditions please contact your local EBG representative!



Derating (thermal resistance): 0.23 W/ $^\circ\text{K}$  (4.28 $^\circ\text{K/W}$ )

Case temperature must be used for definition of the applied power limit. Case temperature measurement must be made with a thermocouple contacting the center of the component mounted on the designed heat sink. Thermal grease should be applied properly.

### Soldering Template



### Soldering Note:

During surface mount soldering, the soldering temperature profile must not cause the metal tab of this device to exceed 215°C. If the solder profile is higher than 215°C (up to 260°C), please use our alternative type **MHP-35 SMD TO 220**. Please contact us for further information!

The above spec. sheet features our standard products. For further options, please contact our local EBG representative or contact us directly. For updated information, please visit our website!