

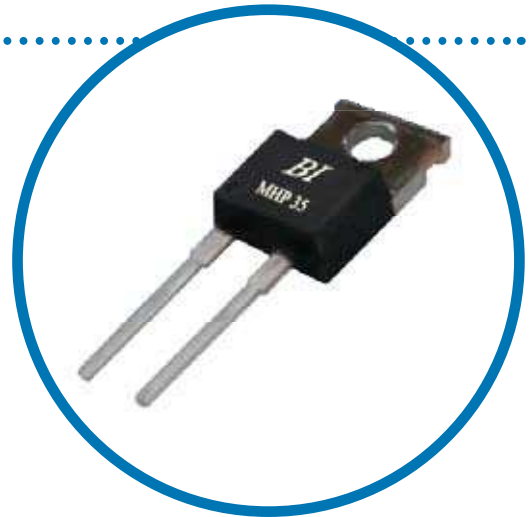
# 35W TO220

## High Power Resistors

MHP 35

### Features

- Non-inductive, thin film technology.
- Thermally enhanced Industry standard TO220 package.
- RoHS compliant.
- Low thermal resistance, 3.3 °C/W resistor hot spot to metal tab.
- Complete thermal flow design available for easy implementation.
- Superior vibration durability.
- Small thin package for high density PCB installation.
- AEC-Q200 Qualified



### Applications

- High frequency circuits and high speed pulse designs.
- Switch mode power supplies.
- Motor control and drive circuits.
- Automotive.
- Industrial computing and measurement systems.

## Specifications

Item	Specifications			Test Conditions
Power Rating	35 watts			-55 to 25 °C flange temperature
Power Rating	1.0 watt			Free air.
Thermal Resistance	3.3 °C/W			Hot spot to Tab
Resistance Range	0.01-0.09 Ω	0.1-9.1 Ω	10-51K Ω	Measured at 5.27 mm from body
Nominal Resistance Series	E6	E24	E24	2.5 Ω and 5.0 Ω also available
TCR	250 ppm/°C	100 ppm/°C	50 ppm/°C	See note 1
Tolerance	+/- 5% (J)	+/-1% (F) & 5% (J)	+/-1% (F)	
Operation Temp. Range	-55°C to +155°C			
Max. Operating Volt.	500V or P.R			
Dielectric Withstanding Voltage	2000 Volts AC			60 seconds.
Load Life ΔR	+/- (1.0 % + 0.05 Ω)			25 °C, 90 min. ON, 30 min. OFF, 1000 hours.
Humidity	ΔR +/- (1.0 % + 0.05 Ω)			40°C, 90-95% RH, DC 0.1 W, 1000 hours.
Temp. Cycle	ΔR +/- (0.25 % + 0.05 Ω)			-55 °C, 30 min., +155 °C, 30 min., 5 cycles
Soldering Heat (Max)	ΔR +/- (0.1 % + 0.05 Ω)			250 +/- 5 °C, 3 seconds,
Solderability	Over 95% of surface			230 +/- 5 °C, 3 seconds.
Insulation Resistance	Over 1,000 MΩ			Between terminals and tab.
Vibration	ΔR +/- (0.25 % + 0.05 Ω)			

Note:

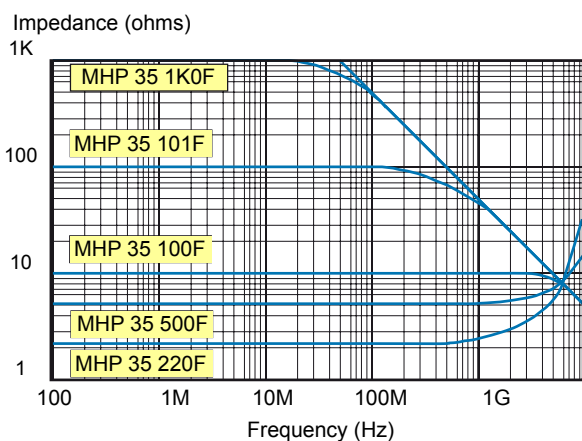
1) TCR increased on low values: 300ppm/°C / 0.02Ω, 200ppm/°C / 0.05Ω, 140ppm/°C / 0.1Ω & 80ppm/°C / 0.2Ω typically  
Specifications subject to change without notice.

### General Note

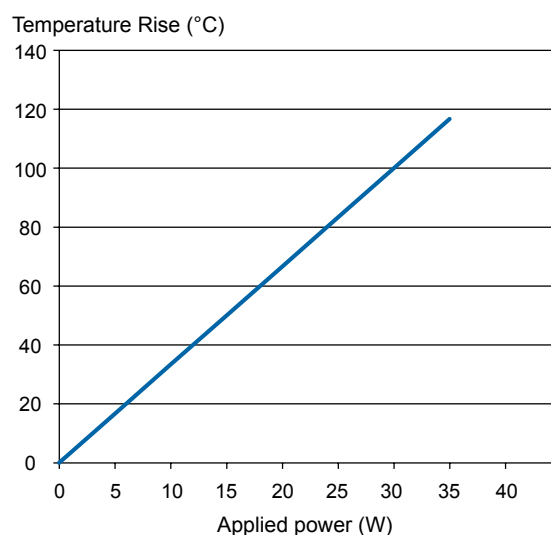
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All information is subject to TT electronics' own data and is considered accurate at time of going to print.

## Electrical Performance

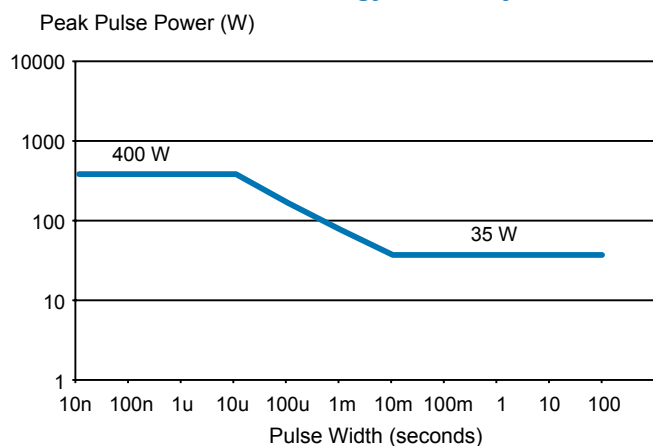
**Frequency Characteristics**



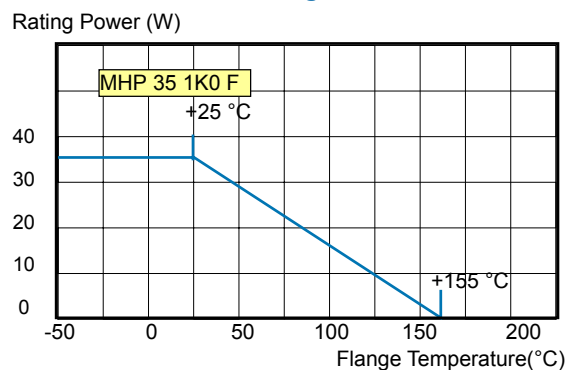
**Thermal characteristics**



**Pulse Energy Durability**



**Derating Curve**

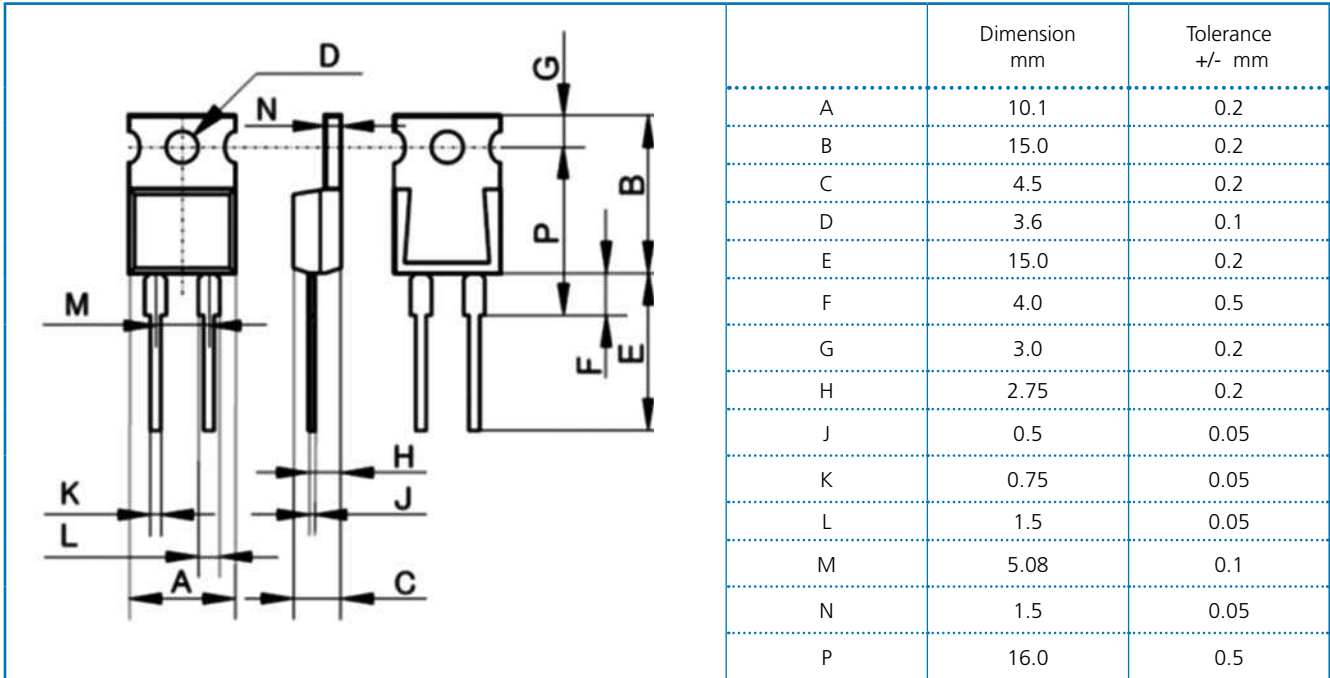


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Dimension



- Notes:
- (1) Electrically isolated metal tab.
  - (2) Recommend the use of thermal grease between metal tab and heat sink.
  - (3) Thermal design should account for a thermal resistance between resistor and tab of 3.3°C/W and a maximum resistor temperature of 155°C.
  - (4) Surface mount package also available, please call factory.
  - (5) Current rating: 25A maximum.

Ordering Procedure

MHP 35 - 500 - F

Model \_\_\_\_\_

Resistance Code \_\_\_\_\_

0.1Ω : 0R100

50 Ω : 500 First two digits significant,  
last digit number of trailing zeros

Tolerance \_\_\_\_\_

J = 5% Tol

F = 1% Tol