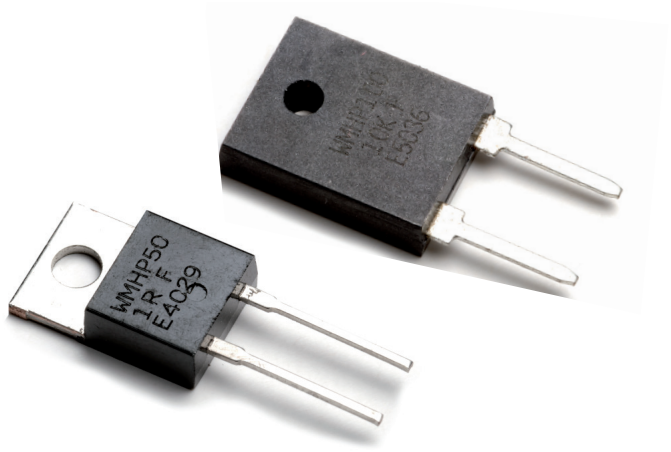
Heatsink Mount High Power Resistors

WMHP Series



Features

- AEC-Q200 (WMHP20 & WMHP35)
- TO-220 & TO-247 standard power packages
- Very low thermal resistance
- Non-inductive thick film technology
- 20 to 100 watt high power resistors
- Single screw mounting to heatsink
- Suitable for high frequency / fast pulse use

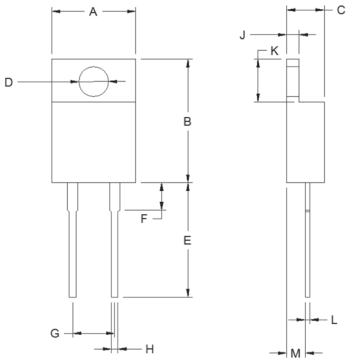
All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

Electrical Data

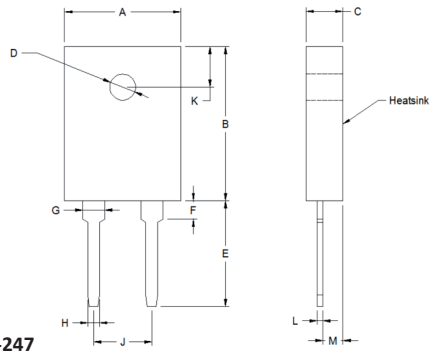
		WMHP20	WMHP35	WMHP50	WMHP100	Conditions
Package style		**TO-220**			**TO-247**	
Power rating	**watts**	20	35	50	100	Heatsink with 25°C flange temperature
Power rating	**watts**	1.5	2.5	3	3.5	Without heatsink, in free air 25°C
Limiting element voltage	**volts**	350			700	dc or ac rms
Resistance range	**ohms**	R05 – 10K		R05 to 100K		
Dielectric strength	**volts**	1800				ac rms for 60s
Working temperature range	**°C**	-65 to 150			-65 to 175	
Insulation resistance	**ohms**	>10G				Between terminals and tab
Tolerances	**%**	≤1R0: ±5 >1R0: ±1, ±5				
TCR	**ppm/°C**	≤R20: ±1000 >R20–3R0: ±300 >3R0-10R: ±100 >10R: ±50				25 to 105°C
Standard values		E24 preferred				

Physical Data

Dimensions (mm) & Weight (g)		
	TO-220	**TO-247**
A	10.16 ±0.25	15.75 ±0.26
B	15 ±0.3	20.7 ±0.26
C	4.6 ±0.2	4.95 ±0.26
D	3.85 ±0.15	3.63 ±0.1
E	13.75 ±0.5	14.48 ±1.27
F	4 max	2.79 ±0.76
G	5.08 ±0.25	3.63 ±0.18
H	0.78 ±0.08	1.52 ±0.1
J	1.3 ±0.1	10.16 ±0.26
K	6.4 ±0.25	5.33 ±0.26
L	0.51 ±0.15	0.81 ±0.26
M	2.27 ±0.25	2.41 ±0.26
Wt	2.0 nom	3.7 nom



TO-220



TO-247

Performance Data

Test		Performance
Load at Rated Power: 2000hrs at rated power	±ΔR%	1
Short Term Overload: 2 x rated power with applied voltage not to exceed 1.5 x maximum continuous operating voltage for 5 seconds	±ΔR%	0.5
Damp Heat with Load: 40 ±2°C, 90 – 95% RH, maximum working voltage 1.5 hours on, 0.5 hours off, 1000 hours	±ΔR%	1
Thermal Shock: -65°C/150°C, 100cycles	±ΔR%	0.3
Terminal Strength: 2.4N pull test	±ΔR%	0.2

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability.
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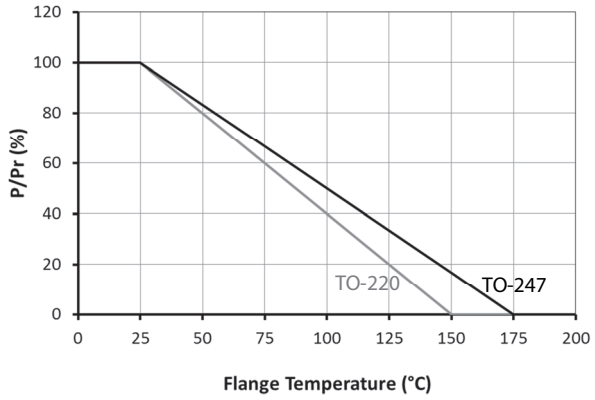
Temperature Derating

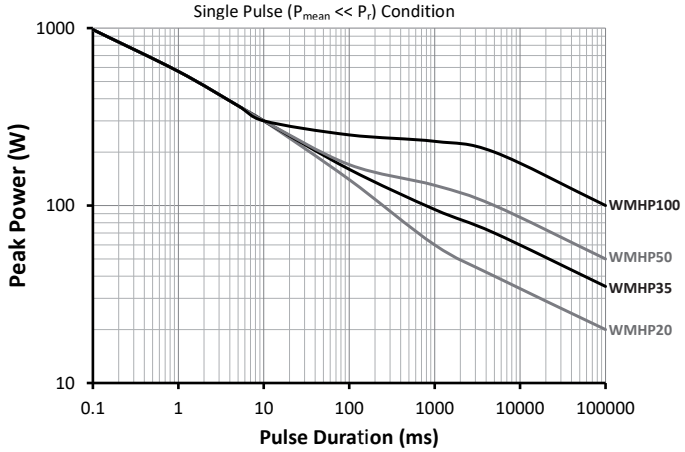


Mounting

The resistor should be mounted to a heatsink using a suitable thermal interface material. The maximum tightening torque for the M3 mounting screw is 0.9Nm.

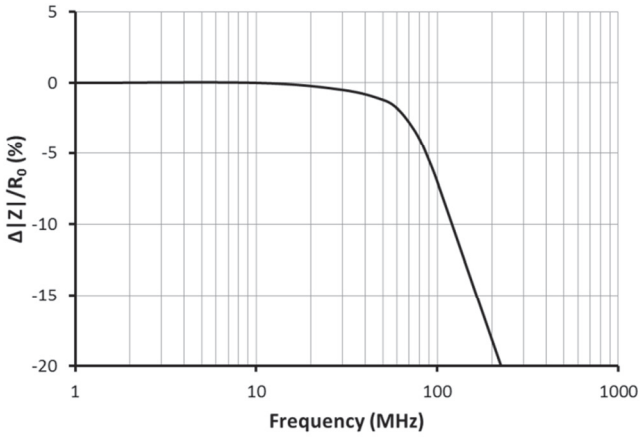
Pulse Performance

Single Pulse (P_{mean} << P_r) Condition



Pulse performance for durations ≥1s is dependent on mounting conditions. The short term overload power limit is 2 x power rating for 5s.

Typical High Frequency Performance



Typical high frequency characteristics for WMHP35-220R. Self resonant frequency is 1GHz.

Ordering Procedure

Example: WMHP35-10KJ (WMHP35 at 10 kilohms ±5%, Pb-free)

W	M	H	P	3	5		-	1	0	K	J
1				2				3			4

1 Type	2 Rating	3 Value	4 Tolerance	Packing
WMHP	20	3 / 4 characters R = ohms K = kilohms	F = ±1%	Plastic tubes TO-220: 50/tube TO-247: 30/tube
	35		J = ±5%	
	50			
	100			

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WMHP20-47RJ