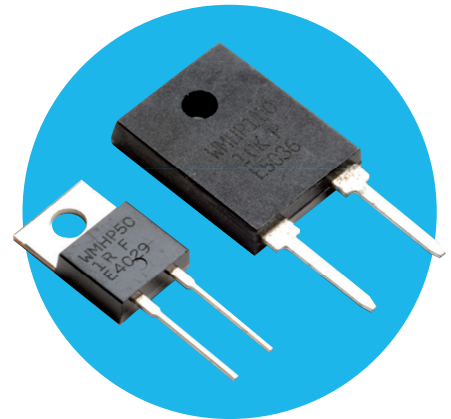


Heatsink Mount High Power Resistors

WMHP Series

- AEC-Q200 (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
- Tailored heatsink WMHP-HS available
- Suitable for high frequency / fast pulse use

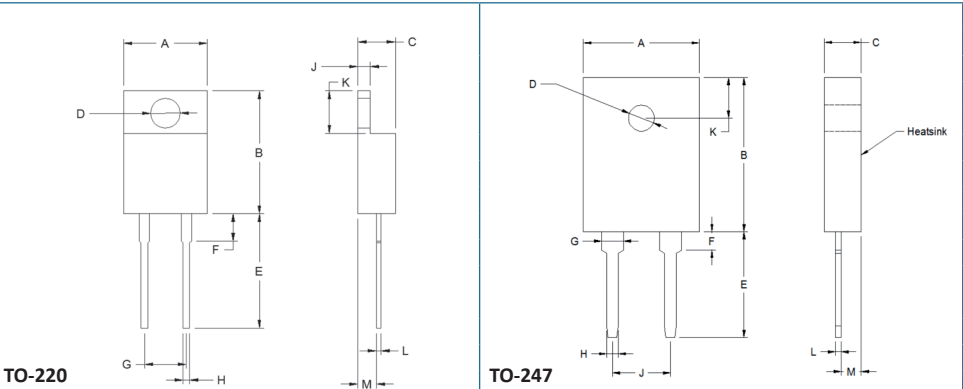


All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

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				
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

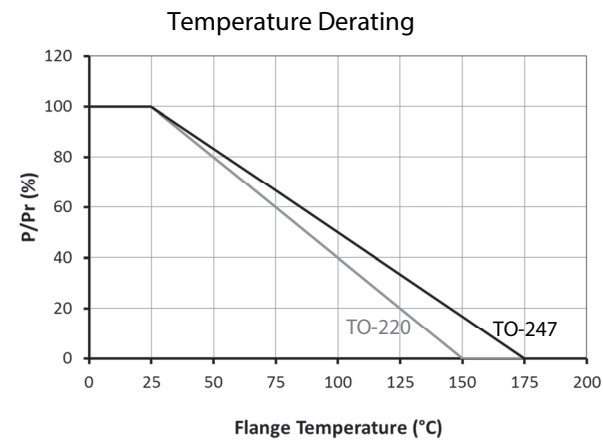
Dimensions (mm) & Weight (g)			
	TO-220	TO-247	
A	10.16 ±0.25	15.75 ±0.26	
B	15 ±0.3	20.7 ±0.26	
C	4.6 ±0.2	4.95 ±0.26	
D	3.85 ±0.15	3.63 ±0.1	
E	13.75 ±0.5	14.48 ±1.27	
F	4 max	2.79 ±0.76	
G	5.08 ±0.25	3.63 ±0.18	
H	0.78 ±0.08	1.52 ±0.1	
J	1.3 ±0.1	10.16 ±0.26	
K	6.4 ±0.25	5.33 ±0.26	
L	0.51 ±0.15	0.81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

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

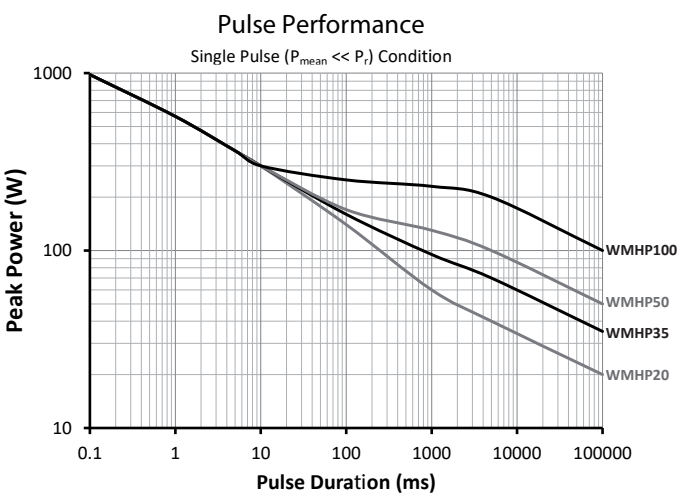
TT Electronics reserves the right to make changes in product specification without notice or liability.
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.



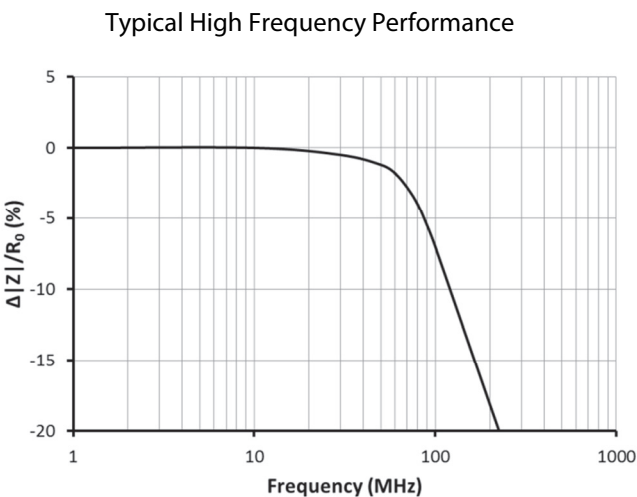
Mounting

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.

A tailored heatsink is available which accommodates both TO-220 and TO-247 package styles. This is WMHP-HS and product data is available at <https://www.TTElectronics.com/TTElectronics/media/ProductFiles/Resistors/Datasheets/WMHP-HS.pdf>



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



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

Ordering Procedure

Example: WMHP35-10KJ (WMHP35 at 10 kilohms $\pm 5\%$, Pb-free)

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

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

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[WMHP100-49RJ](#) [WMHP100-10KF](#) [WMHP100-R33J](#) [WMHP50-22RJ](#) [WMHP100-51RJ](#) [WMHP100-2K2J](#)
[WMHP100-5K0F](#) [WMHP35-2R0F](#) [WMHP100-R20J](#) [WMHP100-22RJ](#) [WMHP100-4R7J](#) [WMHP20-R10F](#) [WMHP100-2R7F](#) [WMHP20-R10J](#) [WMHP20-4K7F](#) [WMHP100-20RJ](#) [WMHP20-1R0J](#) [WMHP100-R56J](#) [WMHP100-20RF](#)
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[WMHP35-1R0F](#) [WMHP20-5R0J](#) [WMHP100-R15J](#) [WMHP20-330RJ](#) [WMHP100-10RJ](#) [WMHP100-3R3F](#) [WMHP35-27RJ](#) [WMHP50-05RF](#) [WMHP100-50RF](#) [WMHP100-03RJ](#) [WMHP20-25RF](#) [WMHP50-1K0F](#) [WMHP20-12RF](#)
[WMHP100-4R0F](#) [WMHP100-01RF](#) [WMHP100-15RF](#) [WMHP20-56RF](#) [WMHP35-24RJ](#) [WMHP20-75RF](#) [WMHP35-0R1J](#) [WMHP35-15RJ](#) [WMHP50-200RF](#) [WMHP100-1K0J](#) [WMHP20-1K0F](#) [WMHP20-50RF](#) [WMHP35-330RJ](#)
[WMHP50-10RJ](#) [WMHP100-05RJ](#) [WMHP35-10RJ](#) [WMHP50-05RJ](#) [WMHP100-5R0F](#) [WMHP20-02RF](#) [WMHP20-5R6F](#) [WMHP100-7R5F](#) [WMHP100-R05J](#) [WMHP20-22RF](#) [WMHP20-100RF](#) [WMHP20-5K0F](#) [WMHP100-3R0J](#)
[WMHP100-02RF](#) [WMHP50-15RF](#) [WMHP50-5R0J](#) [WMHP35-2R4J](#) [WMHP20-5R0F](#) [WMHP50-5R0F](#) [WMHP35-01RF](#) [WMHP50-3R9J](#) [WMHP20-1R0F](#) [WMHP35-1R0J](#) [WMHP100-04RF](#) [WMHP100-75RF](#) [WMHP50-01KF](#) [WMHP100-2R0F](#) [WMHP50-12RJ](#) [WMHP20-2R2F](#) [WMHP20-05KF](#) [WMHP50-100RJ](#) [WMHP50-20RF](#) [WMHP100-12RF](#)
[WMHP100-2R5F](#) [WMHP50-47RJ](#) [WMHP100-10RF](#) [WMHP100-1R5F](#) [WMHP100-470RJ](#) [WMHP20-01RF](#) [WMHP100-01RJ](#) [WMHP20-100RJ](#) [WMHP20-330RF](#)