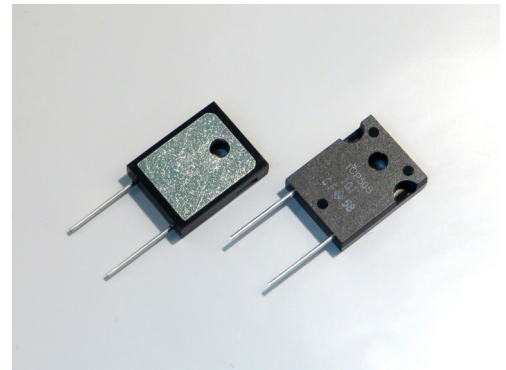


## TO247 100W HIGH POWER RESISTORS

### TCP50S



#### Features and Applications

100W high power resistor in TO247 molded package.

Non-inductive design suits high frequency applications and high-speed pulse circuits.

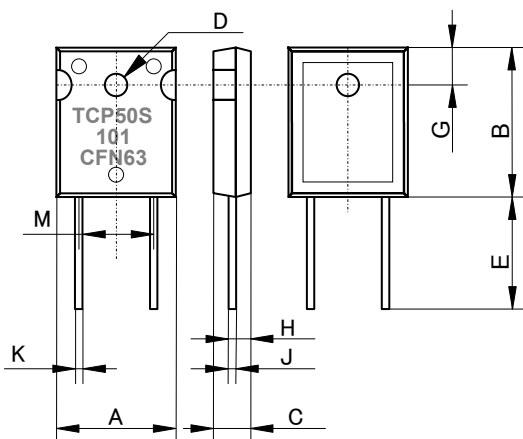
Low, 1.3 °C/W heat resistance from resistor to flange and long life performance are presented with thin film metallization technology and rejection of plastic adhesive joint.

Wide 20 milliohm to 510kOhm resistance range, non-inductive impedance characteristic and heat conduction through the insulated metal flange aids circuit designers.

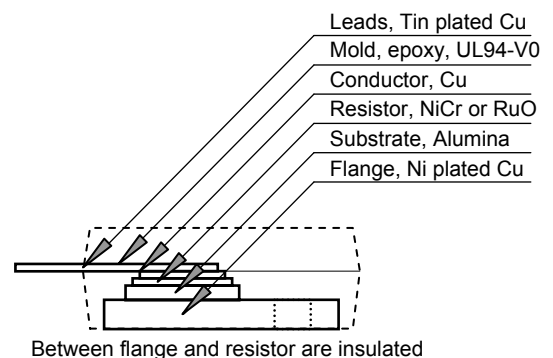
Small size and thin profile suit high-density compact installations.

Complete thermal conduction, heat dissipation design and vibration durable design also available.

Applications include snubber, gate control, bleeder, filter, rush current protection, braking resistors of automotive, rail traction, wind turbine, PV, UPS and motor control inverters.



TCP50S		
	mm	+/-mm
A	16.0	+/-0.2
B	20.0	+/-0.5
C	4.8	+/-0.2
D	3.55*	+/-0.1
E	14.5	+/-0.5
F	-	-
G	5.1	+/-0.5
H	3.63	+/-0.2
J	-	-
K	0.8	+/-0.05
L	-	-
M	10.9	+/-0.1
N		



#### Specifications and Performances

		TCP50S	Test Conditions	
Rating Power		100 Watts	-55 °C to +25 °C flange temperature.	
Rating Power		3.0 Watts	Free air.	
Heat Resistance		1.3 °C/W	Hot spot to flange.	
Resistance Range	0.02-0.09 Ohm	0.1-510k Ohm	10-51k Ohm	Note 2
Nominal Resistance	+E6	+E12	+E24	Include 2.5, 4.0, 5.0, 8.0 and 16
TCR (ppm/°C)	>250(H)	100(A)	50(C)	Note 3
Tolerance	+/-5%	+/-5%, +/-1%	+/-1%	1% tolerance at 0.01-0.091 ohm is available optionally.
Resistor Material	Thick Film		Thin Film	
Capacitance	2.35pF			Equivalent parallel capacitance.
Inductance	11.72nH			Equivalent series inductance
Operation Temp. Range	-55 °C to +175 °C			
Max. Applied Voltage	smaller value either 700V or $\sqrt{P \cdot R}$			P is rating power and R resistance
Withstanding Voltage	2500 VAC			Terminal and flange, 60 seconds, 1mA
Load Life	+/- 1.0 %			25 °C, 90 min. ON, 30min.OFF, 1000hours.
Humidity	+/-1.0 %			40 °C, 90 - 95%RH, DC0.1W, 1000hours.
Temperature Cycle	+/- 0.25 %			-55C, 30 min., +175 °C, 30min., 5cycles.
Soldering Heat	+/- 0.25 %			350+/-5 °C, 3 seconds,
Solder ability	Over 95% area of round			235+/-5 °C, 5 seconds.
Insulation Resistance	Over 1000 Meg ohm			Between terminals and flange
Vibration	+/- 0.25 %			IEC60068-2-6, see note 4
Weight	6.4 grams			

## TO247 100W HIGH POWER RESISTORS

## TCP50S

### Ordering Information

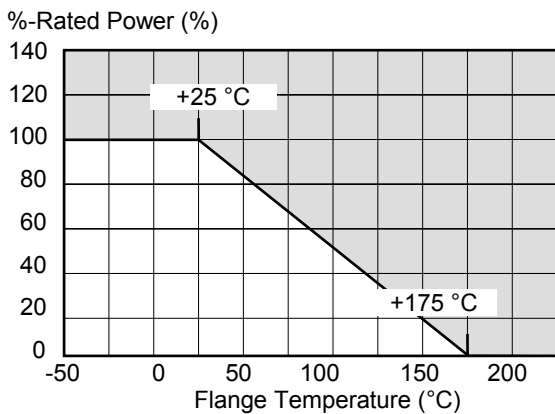
TCP50S -	C	10R0 (*)	F	TB	Note
TCP50S -	H (>250ppm)	R02-R09 (+E6)	J (5%)	TB	Tube / 25 pcs
	A(100ppm)	R10-510K (+E24)	F(1%), J(5%)		
	C(50ppm)	10R-51K (+E24)	F(1%)		

Resistance value (\*) is available following modified E24, +E24.

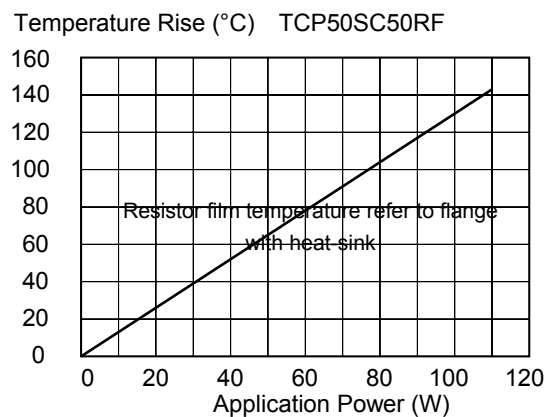
1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.5	2.7	3.0	3.3
3.6	3.9	4.0	4.3	4.7	5.0	5.1	5.6	6.2	6.8	7.5	8.0	8.2	9.1

Note\*: When ordering, additional ohm resistance notation is recommended.

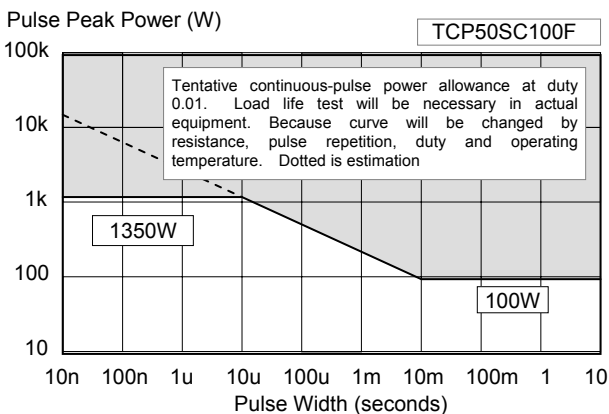
### Derating Curve



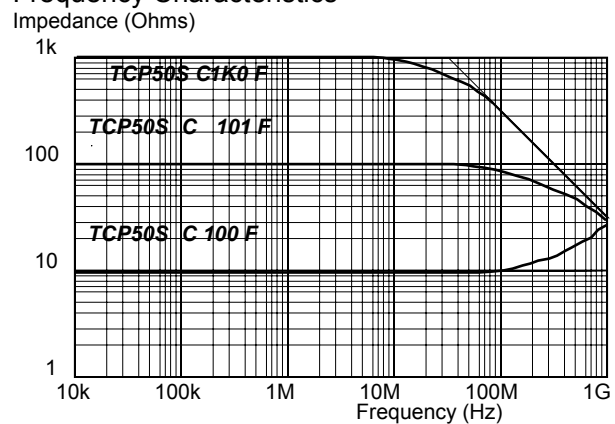
### Temperature Rise



### Pulse Energy Durability



### Frequency Characteristics



### Note:

- (1) Insulation material is unnecessary between flange and heat-sink, flange and resistor is separated by alumina substrate.
- (2) Resistance measurement shall be made at a point 2.54mm $\pm$ 1.0mm from the resistor body.
- (3) TCR of low resistance will be increased as 300ppm/0.02ohm, 200ppm/0.05ohm, 140ppm/0.1ohm and 80ppm/0.2ohm typically. Testing point is at 2.54mm from bottom of molding of terminals.
- (4) Test method is IEC60068-2-6, and specification is sine sweep wave form, 100Hz-2000Hz, 10 cycles, amplitude 0.75mm or 100m/s<sup>2</sup>, 90minutes. direction x-y z, Amplitude 0.75mm will be applied under break point Frequency (about 60Hz) and 100m/s<sup>2</sup> over break point
- (5) When mounting resistor on heat-sink by screw, clip and pressure strip with using heat conduction grease on back side of resistor are recommended. Recommended screw torque is 0.5-0.6Nm. In case of screw mount, ISO M3 screw is necessary, 1/8" screw cannot be acceptable.
- (6) Standard packaging is anti-static PE tube, which contains 25pcs / tube.