TA1K & TA2K

High Wattage Heat Sinkable Planar Resistor

The TAP series delivers 1000W or 2000W of continuous power when properly mounted to a liquid cooled heat sink (based on 85°C mounting plate temperature)

Applications include power conditioning, power distribution, power conversion, and power control.



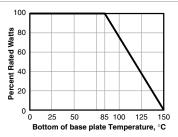
FEATURES

- High Energy Rating
- Low Inductance
- Resistor Element Electrically Isolated
- High Dielectric Strength
- Small Footprint

CHARACTERISTICS

Resistor Element	Thick Film on Alumina Substrate	
Power Rating	1000W or 2000W at 85°C mounting plate	
Resistance Values	0.5Ω to 1000Ω	
Resistance Tolerance	+10% std.	
Max Operating Voltage	2000VDC	
Temperature Coefficient	± 250 PPM/°C	
Dielectric Strength	6KV standard	
Operating Temperature Range	-55°C to 85°C	
Terminal Screws	#10-32	
Max Contacts Torque	10 in-lb	
Mounting Screws	#8-32	
Max Mounting Torque	15 in-lb	
Creepage Distance	50mm ± 1mm (min)	

Derating



Test		Rating Continuous) Pulse
Rated Power, m	ax. current and heat sink plate temperature limited	(TA1K0) 1000W (TA2K0) 2000W	
	Operating Voltage	√P*R	N/A
Max. Ap	plied Voltage, ohms law limited	223V	2000VDC
	Max. Current	10A	53.33A
	nce; below this resistance max le-rated due to exceeding max current	(TA1K0) 10Ω (TA2K0) 20Ω	
Test	Method	Maxir	num ΔR
Short Time Overload	1.14 x √P*R / 10 sec @ 70°C		% ΔRsto = + 0.05Ω)
Moisture Resistance	(TA1K0) 1000 hrs @ 40°C, 90-95 (TA2K0) 1750 hrs @ 40°C, 90-95		
Thermal Shock	MIL-STD-202, Method 107		TD-202, od 107

Resistance	(TA2K0) 1750 hrs @ 40°C, 90-95% RH	≤1%
Thermal Shock	MIL-STD-202, Method 107	MIL-STD-202, Method 107
Vibration, elec.	MIL-STD-202, Method 201	±2% Resistance
Vibration, mech.	MIL-STD-202, Method 201	No Loose Terminal Screws
Load Life	(TA1K0) 1000 Hrs 90 min ON / 30 min OFF (TA2K0) 1750 Hrs 90 min ON / 30 min OFF	≤1% ≤1%
Pulse Tolerance	52µF @ 2KV / 60 sec intervals, 104J, 20,000 Pulses	≤1%
Dielectric Strength	6KVDC for 1 minute	≤1%

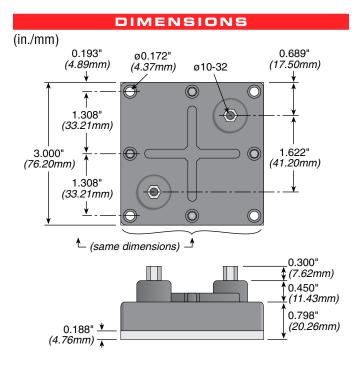
CHANTE TAXONF2850K 1021

APPLICATIONS

- · Power semiconductor balancing
- Motor control
- Inrush Current Limiting

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High Wattage Heat Sinkable Planar Resistor



APPLICATION NOTES

Proper heat sinking techniques are essential to performance of a TAP resistor. Pleased follow these guidelines when designing TAP system:

- Heats sink plate (base plate of the resistor) temperature must be monitored to establish proper de-rating. Best technique is to attach a thermocouple to the side of the base plate of the resistor. Temperature of plastic housing or heat sink cannot be used to establish rating of the resistor. Usage of laser thermometers should be avoided.
- To obtain a power rating of 1000W or 2000W, the bottom case temp must not exceed 85°C. This can only be achieved if the thermal conduction to the heatsink Rth-cs<0.025°K/W. This value can be reached by using thermal transfer compound with a heat conductivity of 1W/mK. The flatness of the cooling plate must be better than 0.05mm overall. The roughness of the surface should not exceed 6.4µm.
- Due to very high power density, only liquid cooled heat sinks are recommended for applications when >300W power rating is desired.
- Properly designed heat sink should have more than 2 cooling pipes under the surface of the TAP resistor. The Ohmite CP4 heat sink (http://www.ohmite.com/cat/sink_cp4.pdf) is an example of properly designed heat sink.

ORDERING INFORMATION

			Ro	HS Compliant	Star	
TA	<u>1 K</u>	<u>0 P F</u>	<u>I 2 R 5</u>	<u>0 K Ė</u>	Ohm	
I Style	Wattage	Package	Resistance			
		Туре	$2.5\Omega = 2R50$ $50\Omega = 50R0$	K = 10% (standard) L = 20%	:	
					-	

Standard Part Numbers				
Ohms	1000 Watt 10% Tolerance		Ohms	2000 Watt 10% Tolerance
0.5	TA1K0PHR500KE		0.5	TA2K0PHR500KE
1	TA1K0PH1R00KE		1	TA2K0PH1R00KE
2.5	TA1K0PH2R50KE		2.5	TA2K0PH2R50KE
5	TA1K0PH5R00KE		5	TA2K0PH5R00KE
7.5	TA1K0PH7R50KE		7.5	TA2K0PH7R50KE
10	TA1K0PH10R0KE		10	TA2K0PH10R0KE
15	TA1K0PH15R0KE		15	TA2K0PH15R0KE
25	TA1K0PH25R0KE		25	TA2K0PH25R0KE
50	TA1K0PH50R0KE		50	TA2K0PH50R0KE
100	TA1K0PH100RKE		100	TA2K0PH100RKE
250	TA1K0PH250RKE		250	TA2K0PH250RKE
500	TA1K0PH500RKE		500	TA2K0PH500RKE
750	TA1K0PH750RKE		750	TA2K0PH750RKE
1000	TA1K0PH1K00KE		1000	TA2K0PH1K00KE



rev 11/18-1

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