HALOGEN

FREE

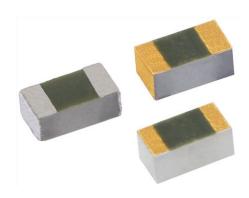
GREEN

(5-2008)





High Frequency 60 GHz High Power 1 W Thin Film Surface Mount Chip Resistor



LINKS TO ADDITIONAL RESOURCES





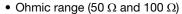
FCHP series chip resistors are designed with low internal reactance. They function as almost pure resistors on a very high range of frequencies. The specialized laser edge trimming allows for precision tolerances to 0.1 %.

Aluminum nitride substrate allows for higher power capability versus standard frequency chip resistor.

Modelithics and Vishay have partnered to offer free access of highly accurate, scalable advanced simulation models. Request the Modelithics Vishay model library: www.modelithics.com/mvp/vishay

FEATURES

- Thin film microwave resistors
- · Operating frequency to 60 GHz
- Small standard case size (0402)
- High power (1 W)
- Small internal reactance (< 10 mΩ)
- Edge sense trimmed block resistors
- High thermal conductivity aluminum nitride substrate



- Low TCR (down to ± 25 ppm/°C)
- Epoxy bondable, wire bondable, and solderable termination styles
- Modelithics® library available
- Flame retardant per AEC-Q200-001
- Material categorization: for definitions of compliance please see www.vishav.com/doc?99912

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

APPLICATIONS

- · 5G base stations and small cells
- RF and microwave test systems
- Connected car
- Internet of things (IoT)

STANDARD ELECTRICAL SPECIFICATIONS			
TEST	SPECIFICATIONS	TEST CONDITIONS	
Material	Passivated nichrome	-	
Resistance Range	50 Ω / 100 Ω	-	
TCR: Absolute	± 25 ppm/°C to ± 100 ppm/°C	-55 °C to +125 °C	
Tolerance: Absolute	± 0.1 % to ± 5.0 %	+25 °C	
Stability: Absolute	ΔR ± 0.50 %	1000 h at 100 °C	
Stability: Ratio	-	-	
Voltage Coefficient	0.1 ppm/V	-	
Working Voltage	30 V	-	
Operating Temperature Range	-55 °C to +155 °C	-	
Storage Temperature Range	-55 °C to +155 °C	-	
Noise	< -35 dB	-	
Shelf Life Stability: Absolute	ΔR ± 0.01 %	1 year at +25 °C	

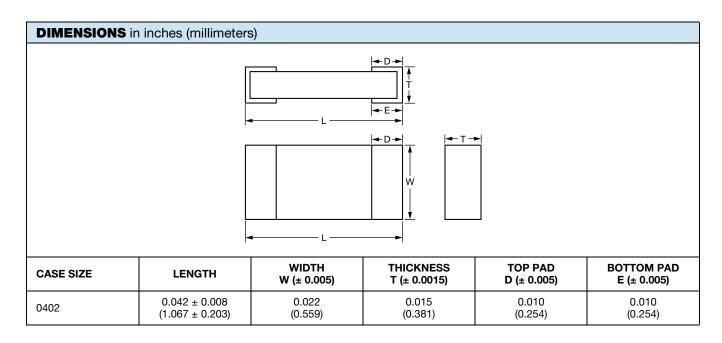


Vishay Dale Thin Film

COMPONENT RATINGS				
CASE SIZE	POWER RATING (mW)	WORKING VOLTAGE (V)	RESISTANCE RANGE (Ω)	
0402	1000 (1)	30	50 / 100	

Note

⁽¹⁾ Dependent on component mounting by user

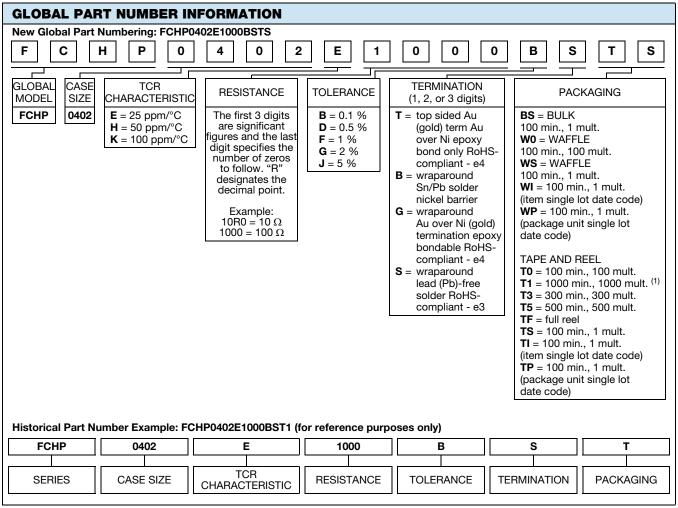


MECHANICAL SPECIFICATIONS		
Resistive Element	Passivated nichrome	
Substrate Material	Aluminum nitride	
Terminations	Pre-soldered or gold	
Lead (Pb)-free Option	100 % matte tin	
Tin/Lead Option	Tin lead solder	
Lead (Pb)-free Finish and Tin / Lead	Electroplated	



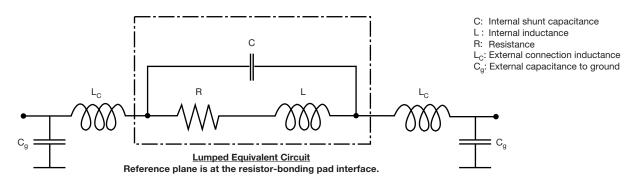


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Note

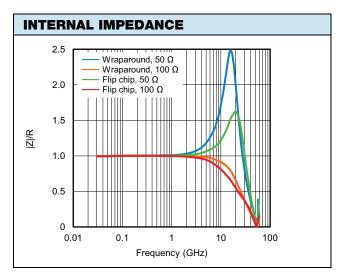
TYPICAL HIGH FREQUENCY PERFORMANCE ELECTRICAL MODEL AND TESTING

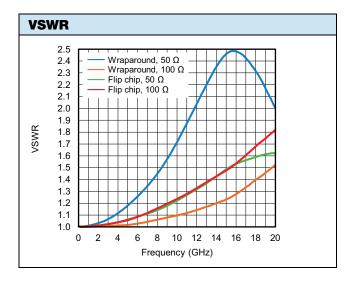


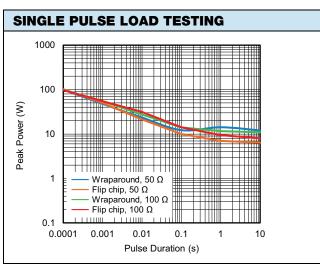
The lumped circuit above was used to model the data at the bonding pad-resistor reference plane. High frequency testing was performed by Modelithics, Inc. on parts mounted to quartz test boards. Quartz test boards were chosen to minimize the contribution of the board effects at high frequencies.

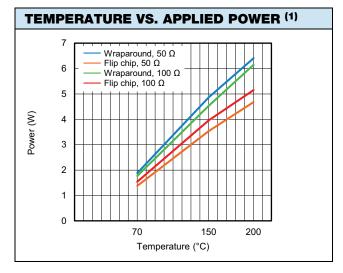
⁽¹⁾ Preferred packaging code

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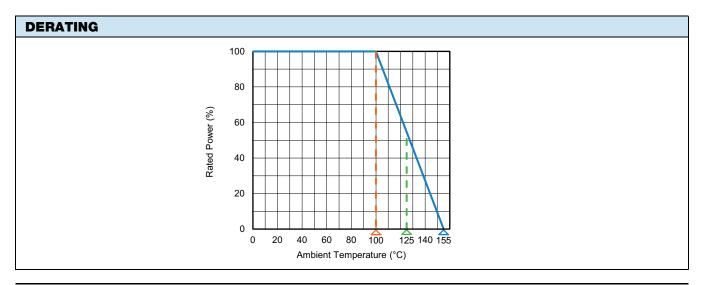






Note

(1) Chip surface temperature measured using FLIR SC645 thermal imaging system. Thermal imaging and load life testing conducted by mounting device to a 1.6" x 3.7" test card with 3.5 mil copper plating on both sides. Thermal vias on 50 mil centers were utilized for heat transfer between surfaces





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