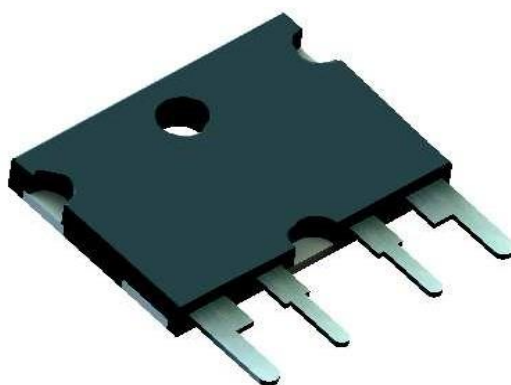




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Metal Type Current Sensing Resistor with Molding

SRM4T2321

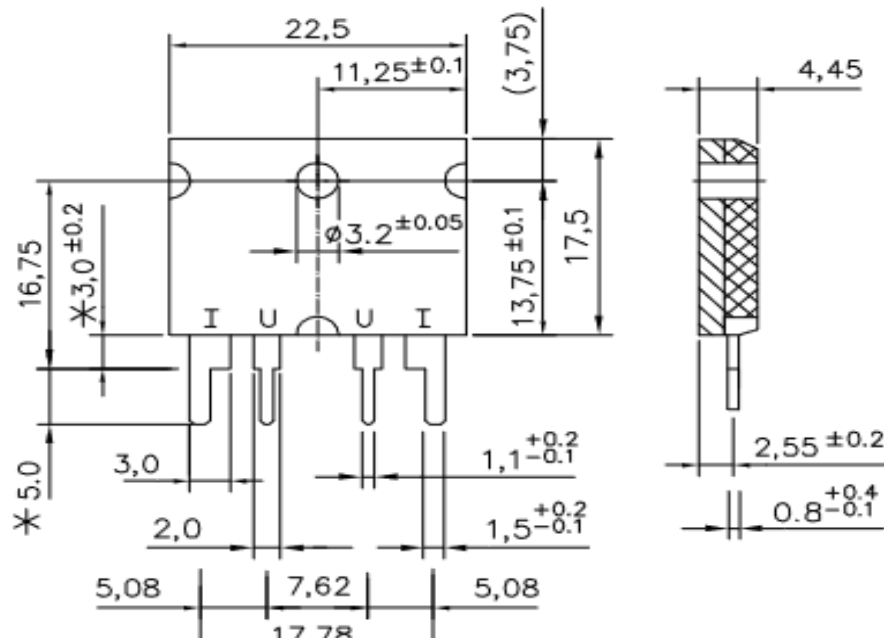




Scope

This specification of high power molding type current sensing resistor rectangular type.

Dimensions



Features

- ◆ Chip size 2321
- ◆ Resistance value: 0.5mΩ, 1mΩ, 2mΩ, 5mΩ, 10mΩ
- ◆ Power Rating to 40W with Heat Sink
- ◆ Package Style 2321 4 Terminals
- ◆ Excellent Long Term Stability
- ◆ Resistance Tolerance : ±1%, ±0.5%
- ◆ Lead free, RoHs compliant for global applications and halogen free

Application

- ◆ Power Module
- ◆ Frequency Converters
- ◆ Switch Mode Power Supplies



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Specification

TYPE		SMR4T2321
Resistance Range		0.0005, 0.001, 0.002, 0.005, 0.010 Ohms
Power Rating	Free air 70°C	3W
	With heatsink	40W
Tolerances R0005 R001,R002 R005,R010		±1% ±0.5%, ±1% ±0.5%, ±1%
Thermal Resistance		2.0 C/W
Stability (2000h)		0.1% / 0.2% / 0.5% (depends on stress)
Temperature Coefficient Standard Option 1 Option 2 upon request for selected values		±10ppm/K (20 to 60°C) ± 5ppm/K (20 to 60°C) ± 2ppm/K (20 to 60°C)
Voltage Proof		300 VDC
Maximum Current		150 A
Thermal EMF		< 1µV/K
Operating Temperature Range		-40 to 130 °C
Resistor Material		CuNiMn / FeCrAl / NiCrAlSi
Substrate		Aluminum / Anodized aluminum
Housing		Epoxy
Connector Material		Cu / tinned
Terminals		4 (standard contact S)
Max. Torque		0.8 Nm

Part Numbers

SRM 4T 2321 U F H R001

(1) (2) (3) (4)(5)(6)(7)

- (1) SRM: series number
- (2) 4T: contact / 4 terminals
- (3) 2321: dimension
- (4) U: TUBE
- (5) F: ±1% (B:±0.5%)
- (6) H: Power rateing 3W
- (7) R001: resistance value=1mΩ

Performances

Figure 1—TCR (Temperature Coefficient of Resistance)

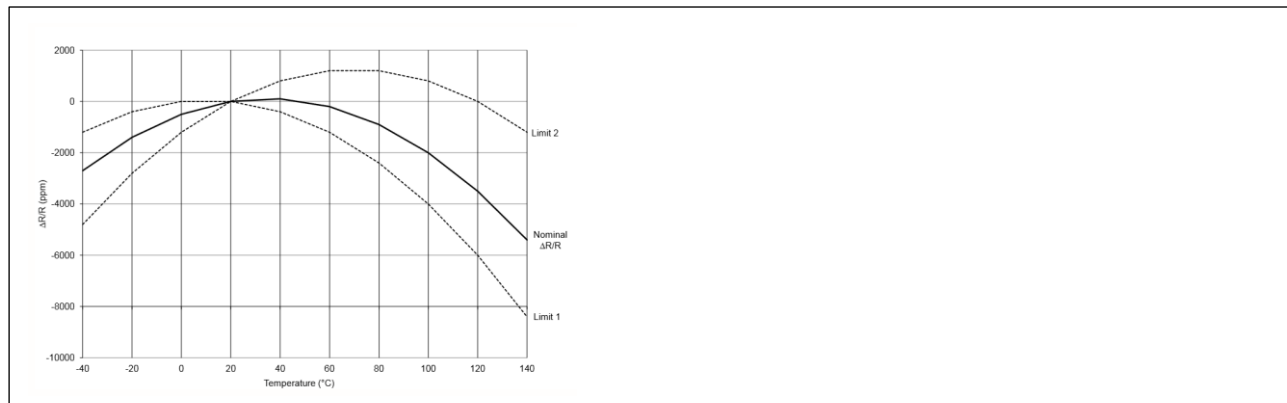
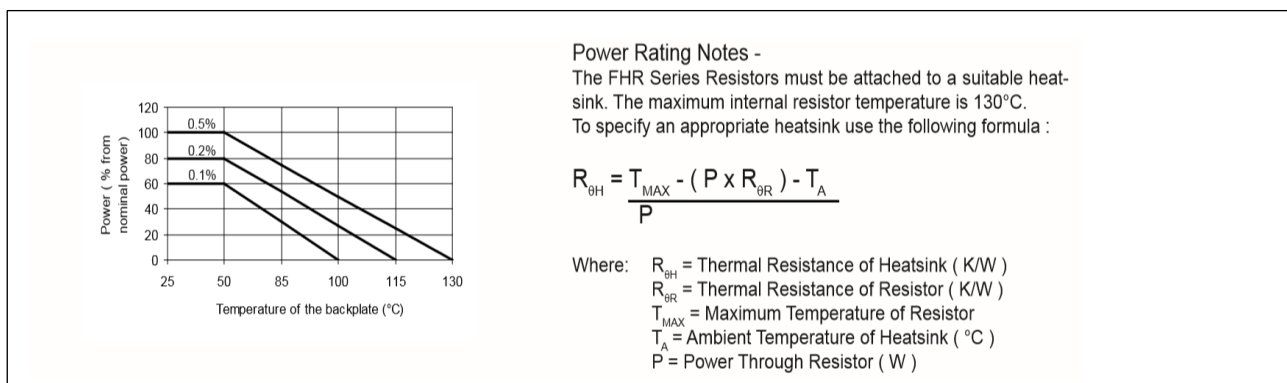
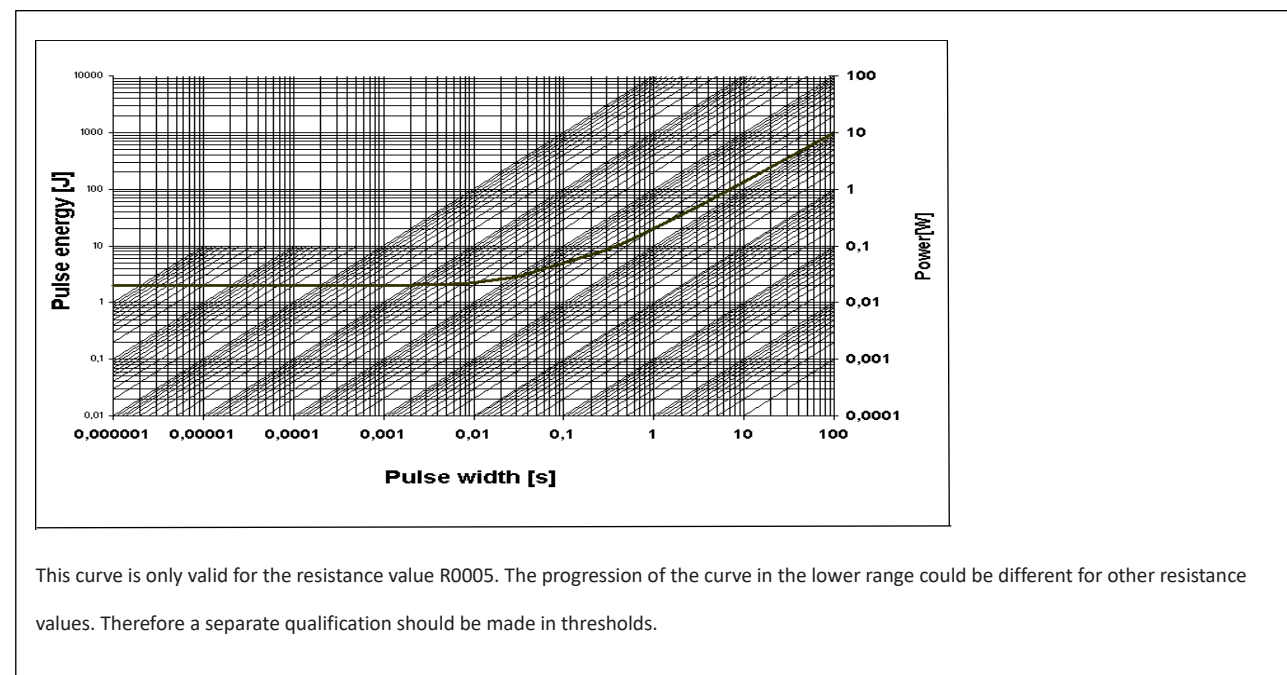


Figure 2—Derating Curve



Maximum pulse energy respectively pulse power for continuous operation





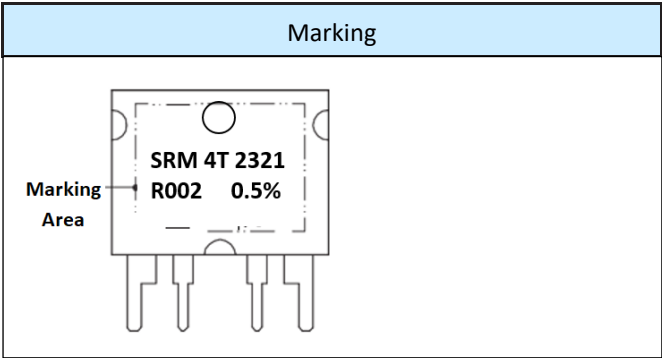
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Environmental Performance		
Parameters	Test Conditions	Specification
Maximum Temperature for full power operation (R > 2 mOhm)	70/90 °C	65/95 °C
Working Temperature	-55 to 125 °C	-55 to 125 °C
Thermal Shock	MIL-STD-202 method 107-B1	0.1 %
Overload	MIL-R-26E (5 times rated power, 5 sec)	0.2 %
Solderability	MIL-STD-202 method 208	> 95 % coverage
Resistance to Solvents	MIL-STD-202 method 215, 2.1a, 2.1d	no damage
Low Temperature Storage and Operation	MIL-STD-26E	0.1 %
Terminal Strength	MIL-STD-202 method 211	50N, 0.02 %
Resistance to Soldering Heat	MIL-STD-202 method 210	0.1 %
Moisture Resistance	MIL-STD-202 method 106	0.1 %
Shock	MIL-STD-202 method 213-A	0.2 %
Vibration, High Frequency	MIL-STD-202 method 204-B	0.2 %
Life	MIL-STD-26E	0.2 %
Storage Life at Elevated Temperature	MIL-STD-202 method 108-F	0.3 %
High Temperature Exposure	140 °C, 2000 h	0.2 %
Current Noise	MIL-STD-202 method 308	0.01 %
Voltage Coefficient (%/V)	MIL-STD-202 method 309	linearity error less than 120dB
Resistance Temperature Characteristic	MIL-STD-202 method 304 (20-60°C)	< 30 ppm/K
Thermal EMF	0 - 100 °C	2 µV/K max.
Frequency Characteristic	inductivity	< 10 nH

Assembly instruction
Max. allowed torque for screws M3
1 Nm

Recommended solder profile			
Reflow- IR / Reflow- IR-soldering			
Temperature [°C]	260	255	217
Time [s]	Peak	40	90



Packaging Information	
Tube	
Parts per tube	25

Storage Conditions
Temperature : 5~35℃, Humidity : 40~75%

ECN
Engineering Change Notice : The customer will be informed with ECN if there is significant modification on the characteristics and materials described in Approval Sheet.