Characteristics

Static Electrical Characteristics

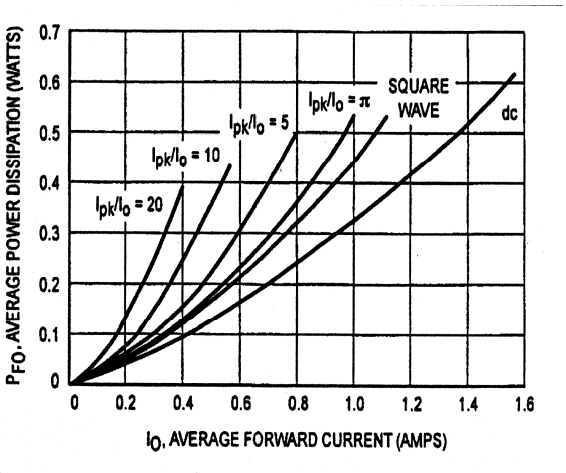
Symbol	Parameter	Test Conditions		Typ	max	Units
V_F[2]	Maximum forward voltage	T_J = 25ºC	I_F = 0.1 A		0.34	V
			I_F = 1.0 A		0.45	
			I_F = 3.0 A		0.65	
		T_J = 85ºC	I_F = 0.1 A		0.25	
			I_F = 1.0 A		0.415	
			I_F = 3.0 A		0.67	
I_R[2]	Maximum instantaneous reverse current	T_J = 25ºC	V_R = 20V		0.40	mA
			V_R = 10V		0.10	
		T_J = 85ºC	V_R = 20V		25	
			V_R = 10V		18	
C_T	Junction capacitance	V_R = 5V, f = 1MHz		80		pF

[2] Measured with a test pulse of 380µs to minimize self-heating effect

Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\Theta JC}$	Junction to case (bottom)	15	ºC/W
$R_{\Theta JA}$	Junction to ambient[3]	240	ºC/W

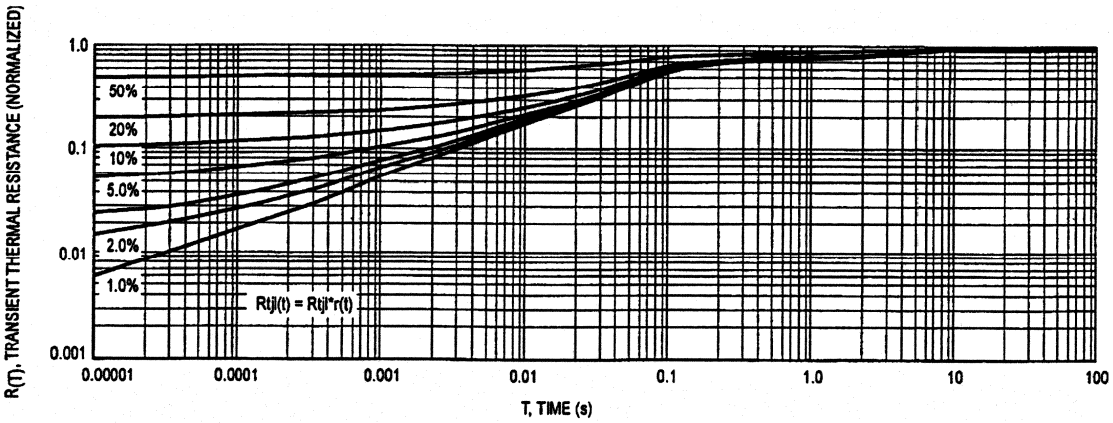
[3] Mounted on FR-4 PC board using 1oz copper with recommended minimum foot print



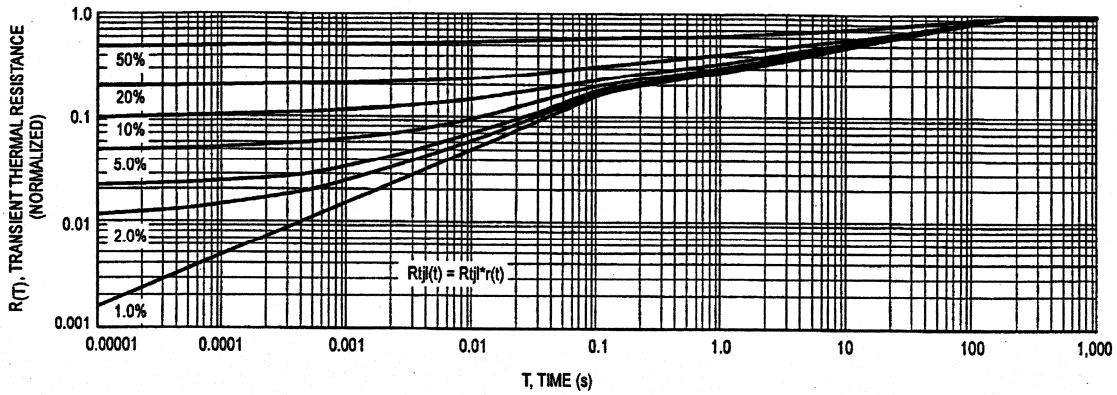
Reverse power dissipation and the possibility of thermal runaway must be considered when operating this device under any reverse voltage conditions. Calculations of T_J therefore must include forward and reverse power effects. The allowable operating T_J may be calculated from the equation:

$T_J = T_{J\,max} = r(t)(Pf+Pr)$ where
r(t) = thermal impedance under given conditions.
Pf = forward power dissipation, and
Pr = reverse power dissipation

This graph displays the de-rated allowable T_J due to reverse bias under DC conditions only and is calculated as $T_J = T_{J\,max}$-r(t) Pr, Where r(t)=Rthja. For other power applications further calculations must be performed.



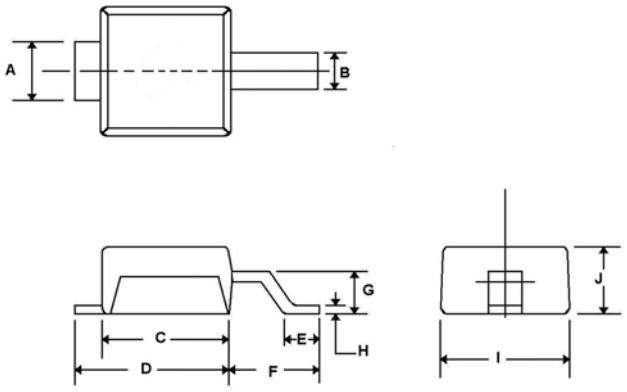
Thermal Impedance Junction to Case (bottom)



Thermal Impedance Junction to Ambient

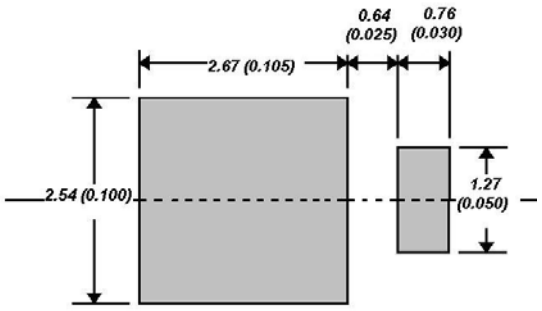
Mechanical Characteristics

Physical dimensions



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.73	0.99	0.029	0.039
B	0.40	0.66	0.016	0.026
C	1.77	2.03	0.070	0.080
D	2.21	2.46	0.087	0.097
E	0.50	0.76	0.020	0.030
F	1.29	1.54	0.051	0.061
G	0.53	0.78	0.021	0.031
H	0.10	0.20	0.004	0.008
I	1.77	2.03	0.070	0.080
J	0.89	1.14	0.035	0.045

Footprint dimensions



Powermite 1® footprint dimensions in *mm (inches)*

Package materials & information

Case : Epoxy meets UL94V-0

Electrode finish : Matte Sn plating - fully RoHS compliant

Marking code :

S20

Ordering information

Product order code	Marking	Package	Weight	Base qty	Delivery mode
UPS120e3 / TR7	S20	Powermite 1 (DO-216AA)	0.016 g	3000	Tape and reel (7 inch)
UPS120e3 / TR13	S20	Powermite 1 (DO-216AA)	0.016 g	12000	Tape and reel (13 inch)

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Please refer to www.microsemi.com for the terms and conditions of purchase