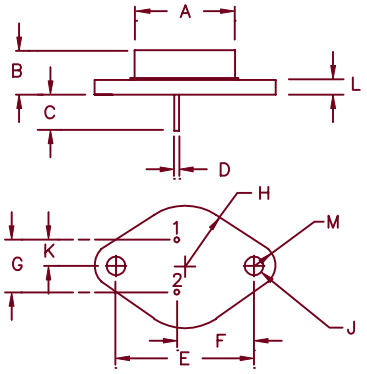
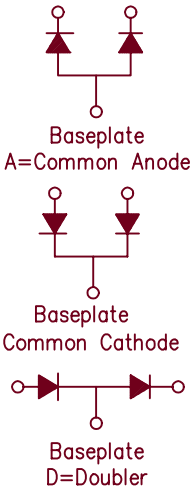
Silicon Dual Power Rectifier

ST3020 – ST30100





Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
A	—	.875	—	22.23	Dia.
B	.250	.450	6.35	11.43	
C	.312	—	7.92	—	
D	.038	.043	.97	1.09	Dia.
E	1.177	1.197	29.90	30.40	
F	.655	.675	16.64	17.15	
G	.420	.440	10.67	11.18	
H	—	.525	—	13.34	Rad.
J	.151	.161	3.84	4.09	Dia.
K	.205	.225	5.21	5.72	
L	—	.135	—	3.43	
M	—	.188	—	4.78	Rad.

TO–204AA (TO–3)

Microsemi Catalog Number	Peak Reverse Voltage
ST3020*	200V
ST3040*	400V
ST3060*	600V
ST3080*	800V
ST30100*	1000V

*Add D, C, or A

- Glass Passivated Die
- Glass to metal seal construction
- V_{RRM} 200 to 1000V
- 250A Surge Rating
- Available as Common Anode, Common Cathode, or Doubler

Electrical Characteristics

Average forward current per leg (standard)	$I_{F(AV)}$ 15 Amps	T_C = 125°C, half sine wave, $R_{\theta JC}$ = 1.4°C/W
Average forward current per leg (reverse)	$I_{F(AV)}$ 15 Amps	T_C = 82°C, half sine wave, $R_{\theta JC}$ = 2.2°C/W
Maximum surge current	I_{FSM} 250 Amps	8.3ms, half sine, T_J = 200°C
Max I^2t for fusing	I^2t 260 A^2s	
Max peak forward voltage	V_{FM} 1.2 Volts	I_{FM} = 15A; T_J = 25°C*
Max peak reverse current	I_{RM} 10 μA	V_{RRM}, T_J = 25°C
Max peak reverse current	I_{RM} 1.0 mA	V_{RRM}, T_J = 150°C
Max Recommended Operating Frequency	10kHz	

*Pulse test: Pulse width 300 μsec. Duty cycle 2%

Thermal and Mechanical Characteristics

Storage temperature range	T_{STG}	−65°C to 200°C
Operating junction temp range	T_J	−65°C to 200°C
Maximum thermal resistance (standard polarity)	$R_{\theta JC}$	1.4°C/W Junction to Case
Maximum thermal resistance (reverse polarity)	$R_{\theta JC}$	2.2°C/W Junction to Case
Typical thermal resistance (greased)	$R_{\theta CS}$	0.5°C/W Case to sink
Weight		1.0 ounces (28 grams) typical

12–6–00 Rev. 1

COLORADO
Microsemi
800 Hoyt Street
Broomfield, CO. 80020
PH: (303) 469–2161
FAX: (303) 466–3775
www.microsemi.com

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Figure 1
Typical Forward Charateristics – Per Leg

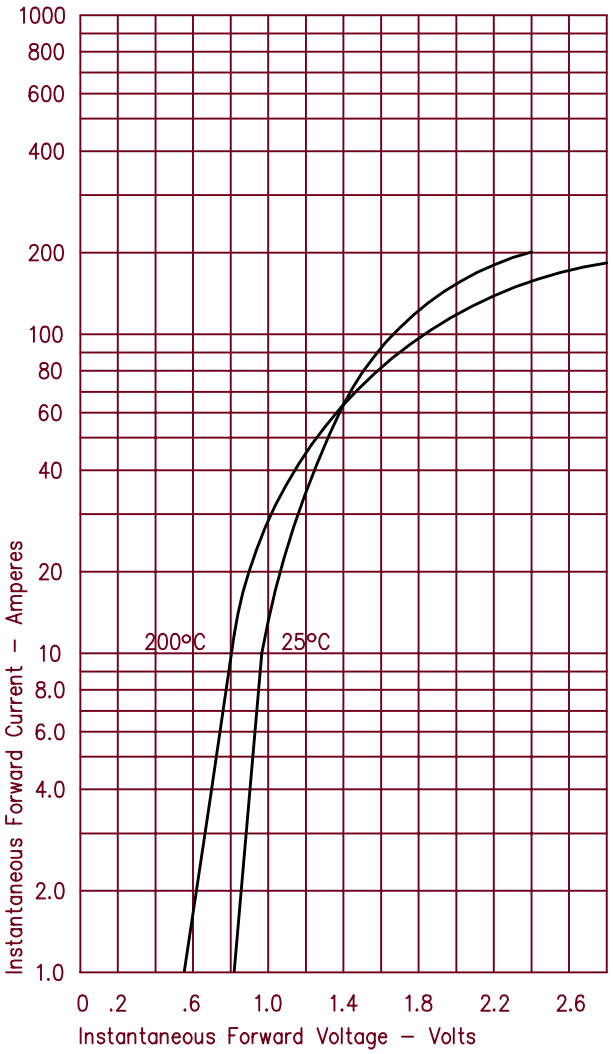

Figure 2
Typical Reverse Characteristics – Per Leg

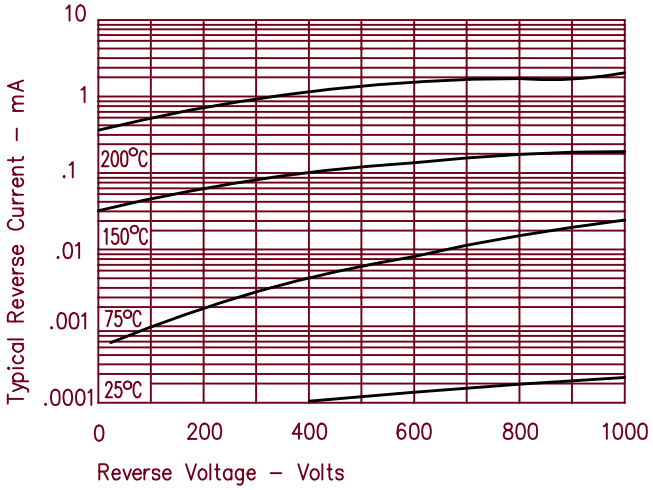

Figure 3
Forward Current Derating – Per Leg – Standard Polarity

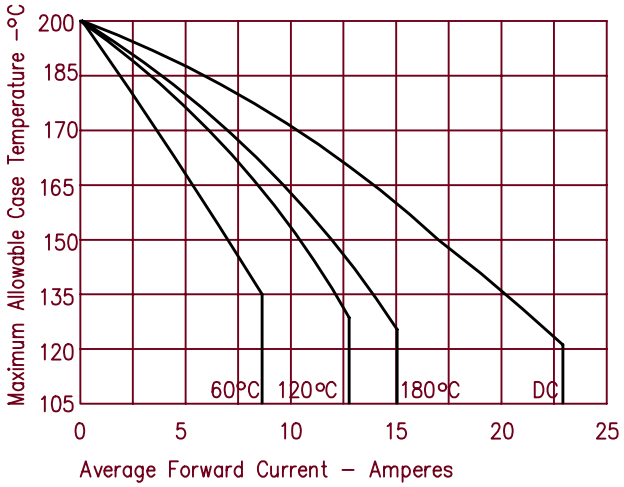

Figure 4
Maximum Forward Power Dissipation – Per Leg – Standard Polari

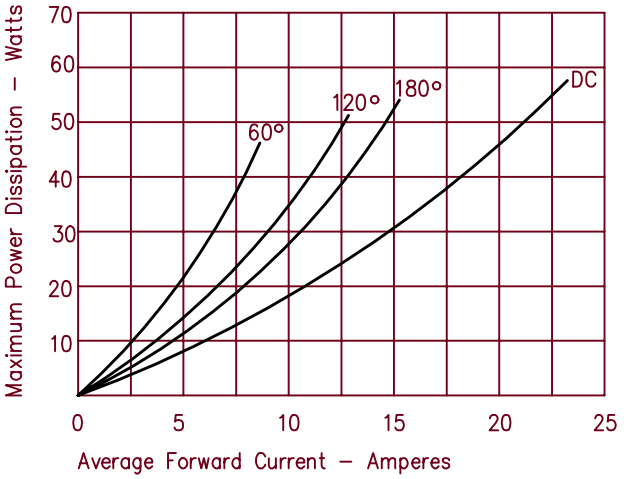

Figure 5
Forward Current Derating – Per Leg – Reverse Polarity

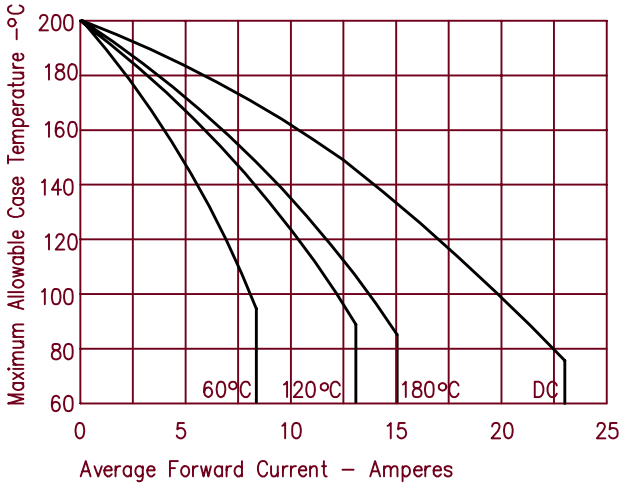

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Figure 6
Maximum Forward Power Dissipation – Per Leg – Reverse Polarity

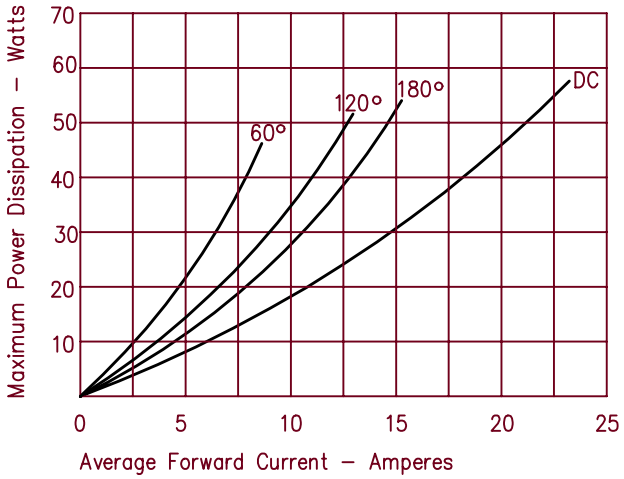

Figure 7
Transient Thermal Impedance – Per Leg – Standard Polarity

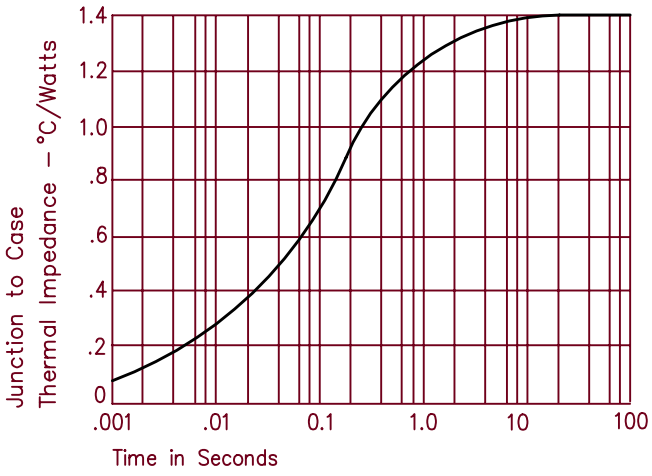

Figure 8
Transient Thermal Impedance – Per Leg – Reverse Polarity

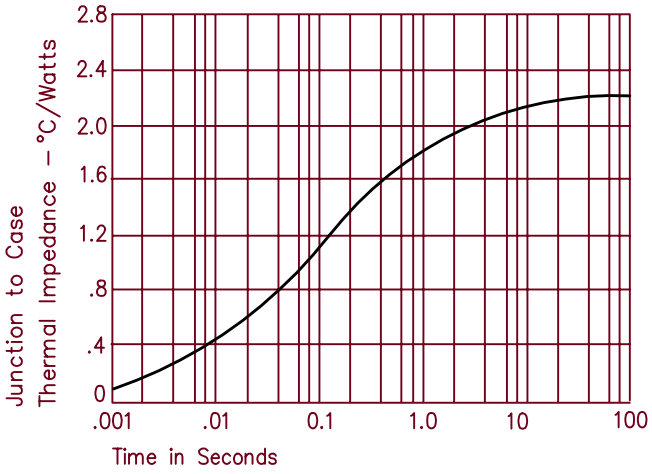

Figure 9
Maximum Nonrepetitive Surge Current – Per Leg