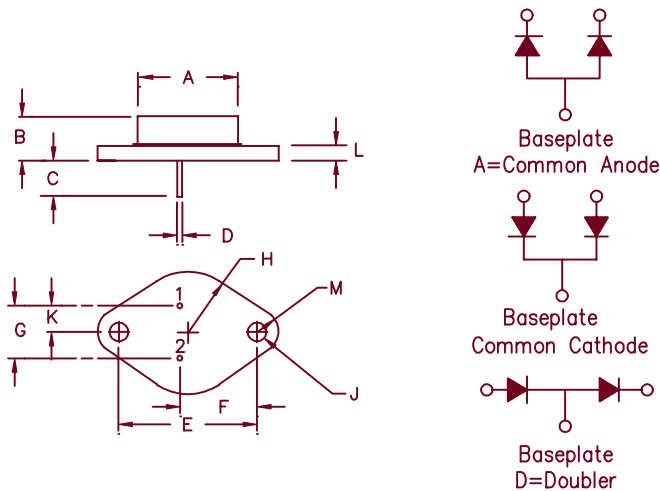


Silicon Dual Power Rectifier

ST3020 — ST30100



Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
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

ST3020*
ST3040*
ST3060*
ST3080*
ST30100*

Peak
Reverse Voltage

200V
400V
600V
800V
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	$T_C = 125^\circ\text{C}$, half sine wave, $R_{\theta JC} = 1.4^\circ\text{C/W}$
Average forward current per leg (reverse)	$I_{F(AV)}$ 15 Amps	$T_C = 82^\circ\text{C}$, half sine wave, $R_{\theta JC} = 2.2^\circ\text{C/W}$
Maximum surge current	I_{FSM} 250 Amps	8.3ms, half sine, $T_J = 200^\circ\text{C}$
Max $I^2 t$ for fusing	$I^2 t$ 260 A^2s	
Max peak forward voltage	V_{FM} 1.2 Volts	$I_{FM} = 15\text{A}$; $T_J = 25^\circ\text{C}$
Max peak reverse current	I_{RM} 10 μA	V_{RRM} , $T_J = 25^\circ\text{C}$
Max peak reverse current	I_{RM} 1.0 mA	V_{RRM} , $T_J = 150^\circ\text{C}$
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 $^\circ\text{C/W}$ Junction to Case
Maximum thermal resistance (reverse polarity)	$R_{\theta JC}$	2.2 $^\circ\text{C/W}$ Junction to Case
Typical thermal resistance (greased)	$R_{\theta CS}$	0.5 $^\circ\text{C/W}$ Case to sink
Weight		1.0 ounces (28 grams) typical

12-6-00 Rev. 1

ST3020 – ST30100

Figure 1
Typical Forward Characteristics – Per Leg

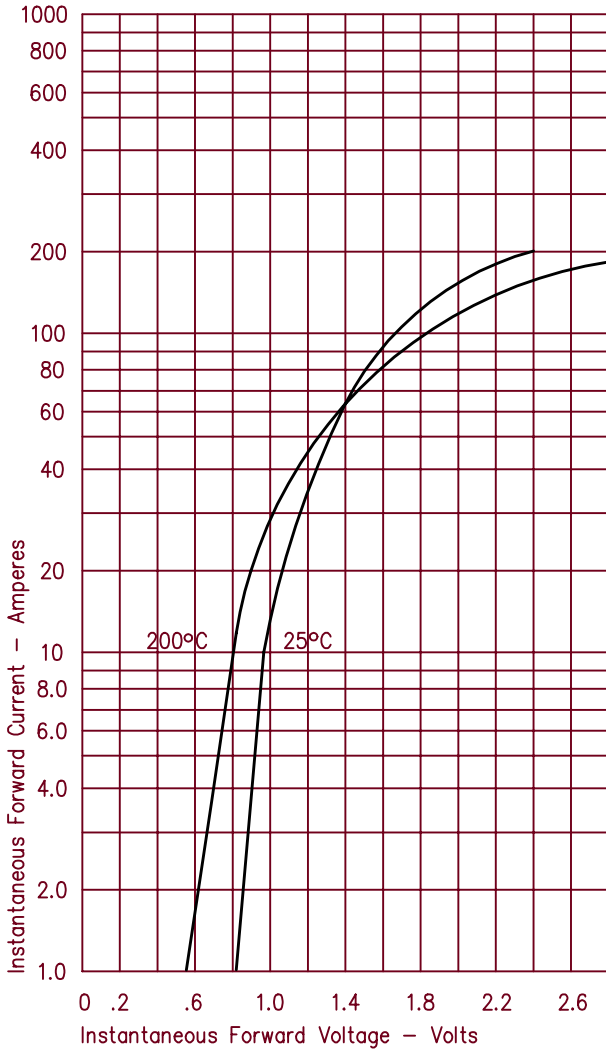


Figure 2
Typical Reverse Characteristics – Per Leg

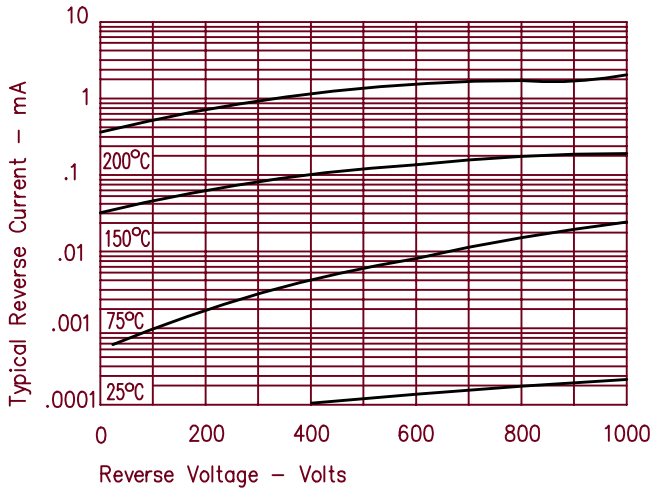


Figure 3
Forward Current Derating – Per Leg – Standard Polarity

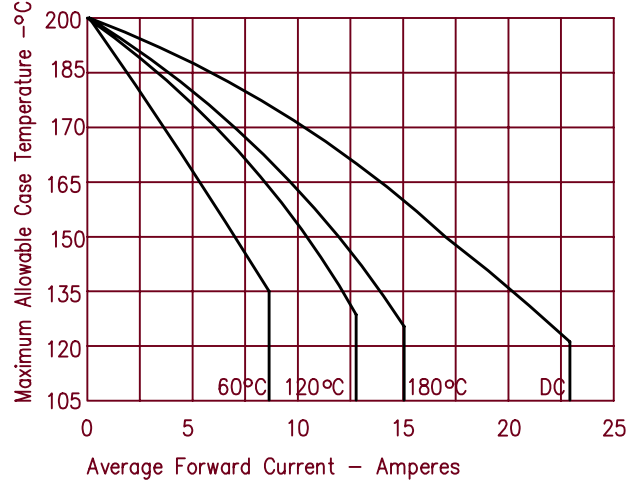


Figure 4
Maximum Forward Power Dissipation – Per Leg – Standard Polarity

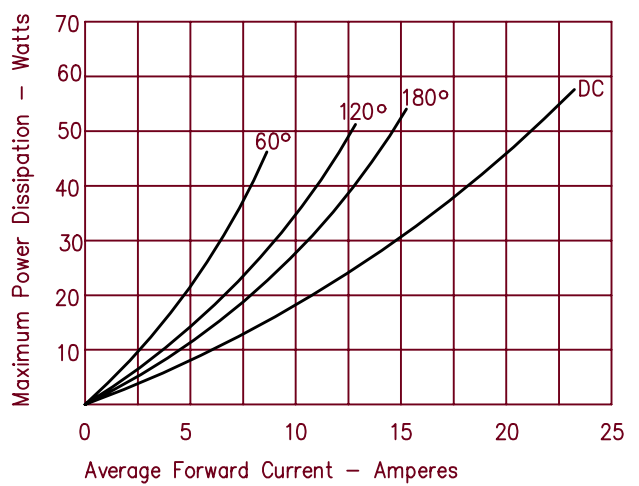
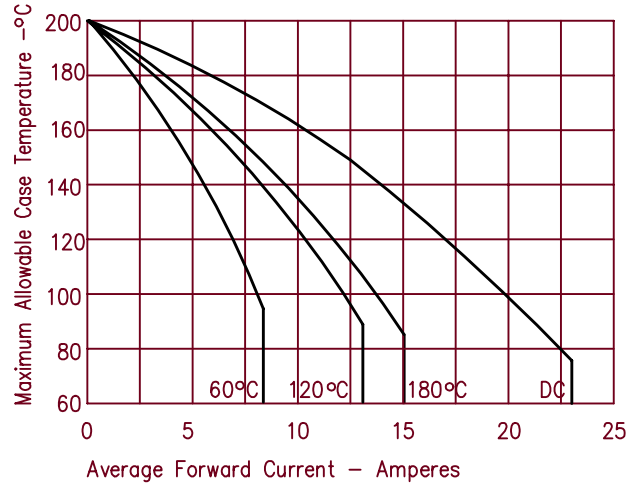


Figure 5
Forward Current Derating – Per Leg – Reverse Polarity



ST3020 – ST30100

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

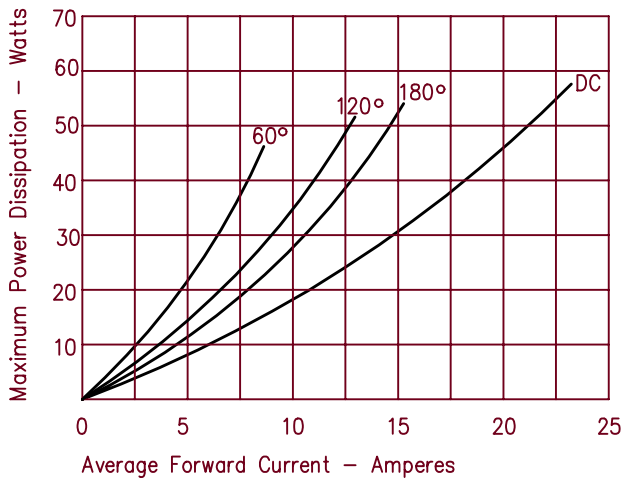


Figure 8
Transient Thermal Impedance – Per Leg – Reverse Polarity

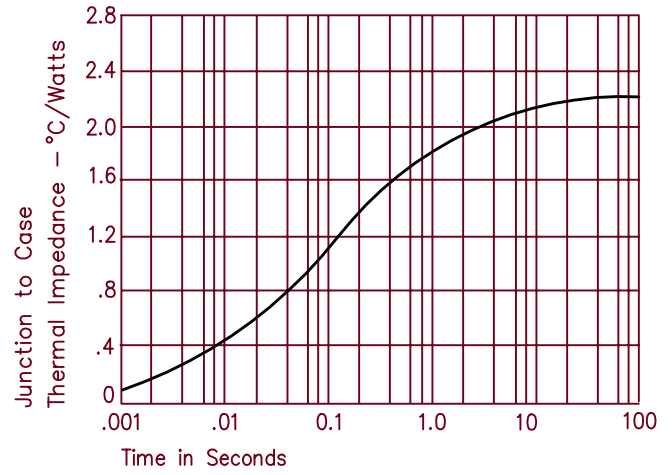


Figure 7
Transient Thermal Impedance – Per Leg – Standard Polarity

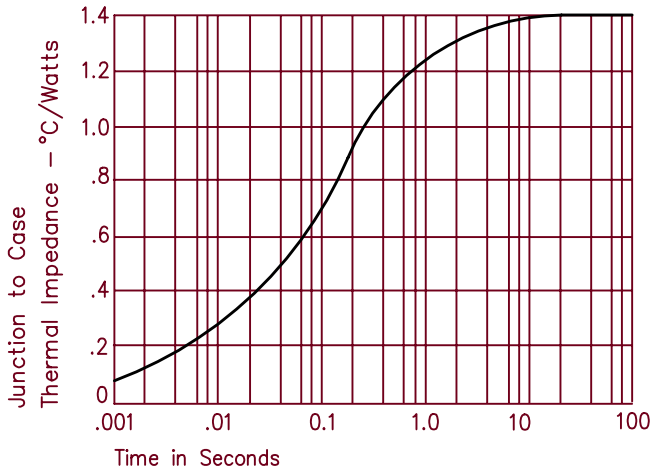


Figure 9
Maximum Nonrepetitive Surge Current – Per Leg

