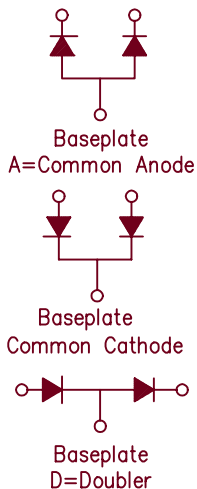
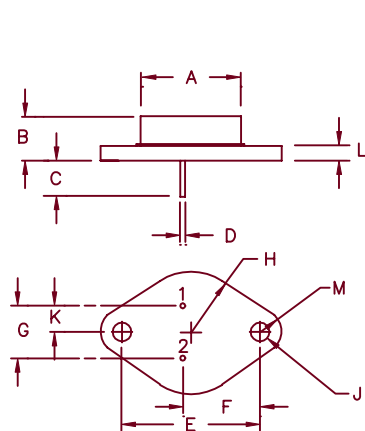


# Silicon Dual Power Rectifier ST3020 — ST30100



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

\*Pulse test: Pulse width 300  $\mu sec$ . Duty cycle 2%

## Thermal and Mechanical Characteristics

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

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# ST3020 — ST30100

Figure 1  
Typical Forward Characteristics — Per Leg

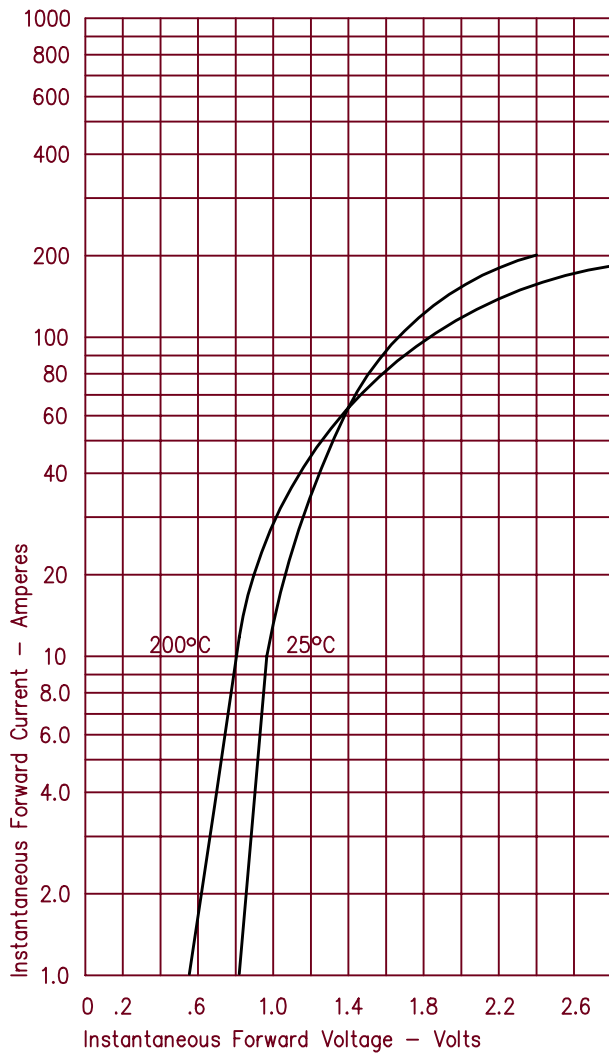


Figure 3  
Forward Current Derating — Per Leg — Standard Polarity

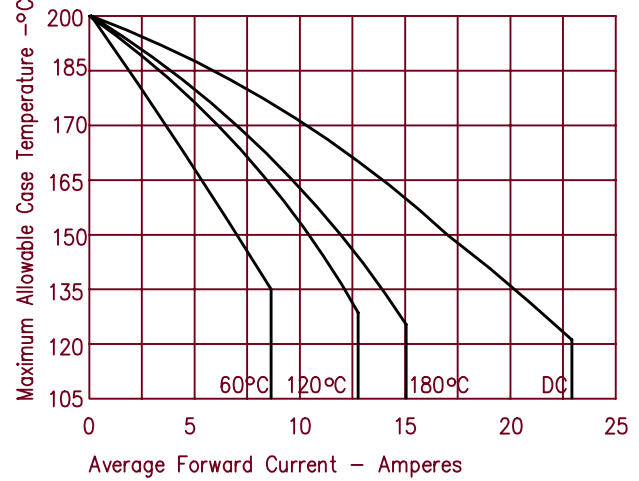


Figure 4  
Maximum Forward Power Dissipation — Per Leg — Standard Polarity

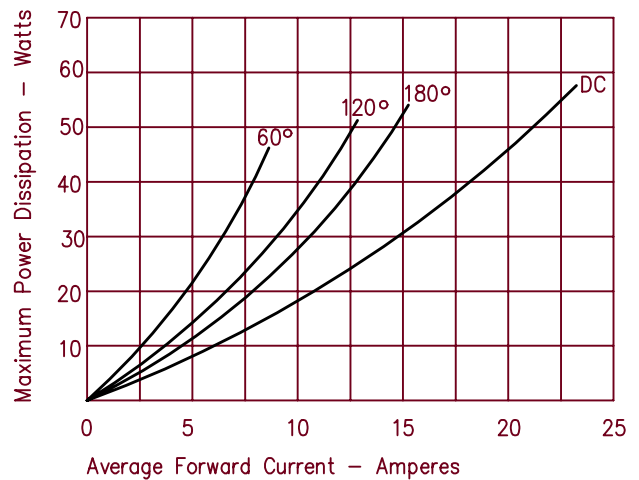


Figure 2  
Typical Reverse Characteristics — Per Leg

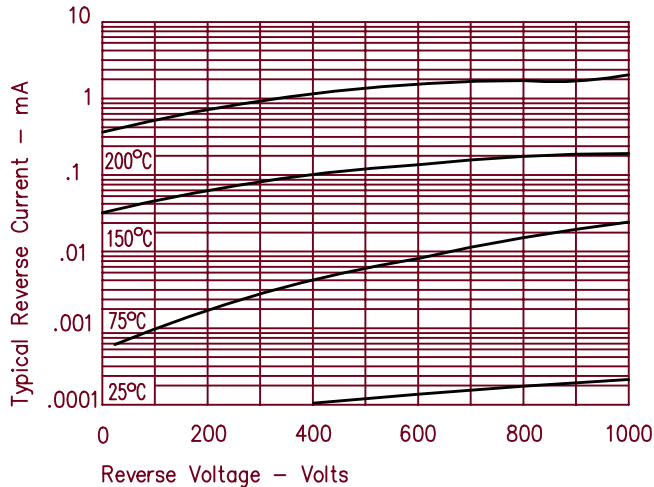
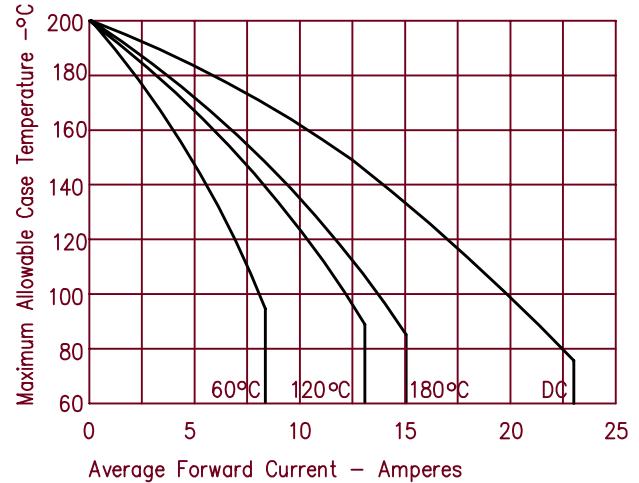


Figure 5  
Forward Current Derating — Per Leg — Reverse Polarity



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

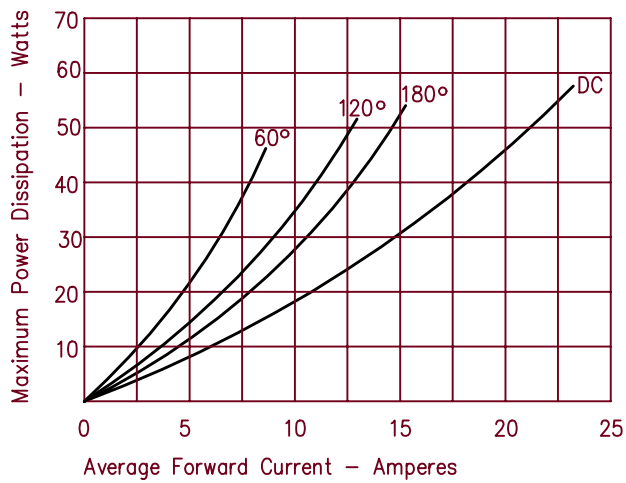


Figure 8  
Transient Thermal Impedance – Per Leg – Reverse Polarity

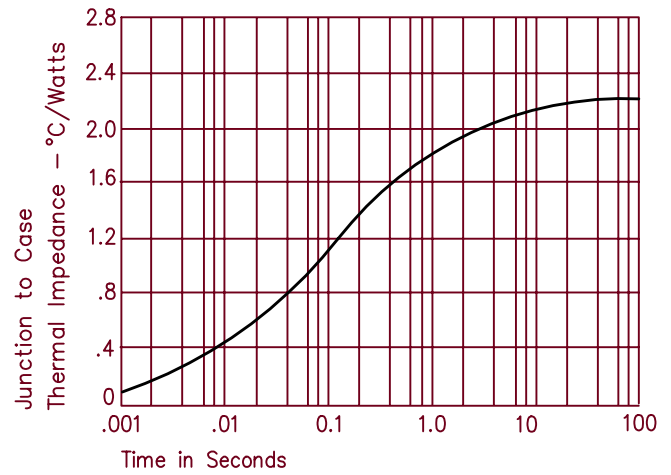


Figure 7  
Transient Thermal Impedance – Per Leg – Standard Polarity

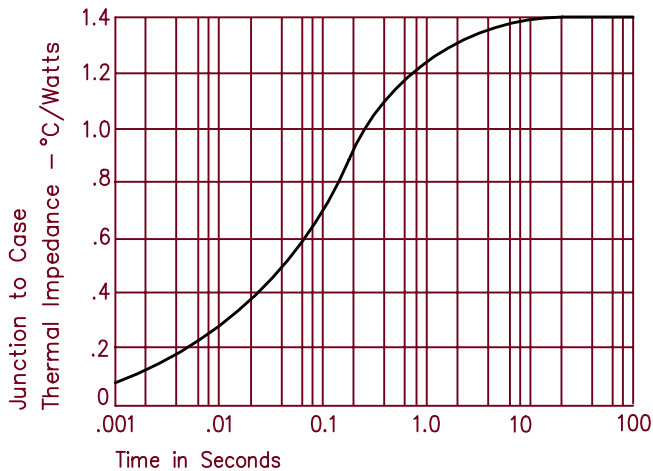


Figure 9  
Maximum Nonrepetitive Surge Current – Per Leg

