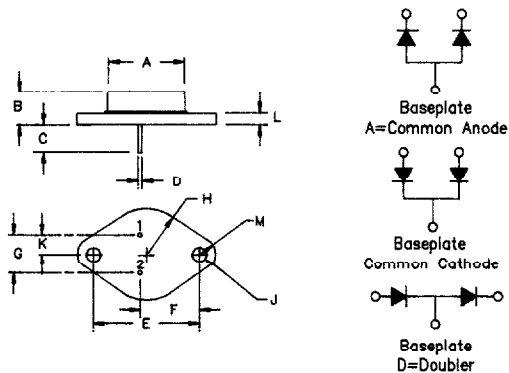


# Silicon Dual Power Rectifier

## 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	Working Peak Reverse Voltage	Repetitive Peak Reverse Voltage
ST3020*	200V	200V
ST3040*	400V	400V
ST3060*	600V	600V
ST3080*	800V	800V
ST30100*	1000V	1000V

\*Add D, C, or A

- Glass Passivated Die
- Excellent Reliability
- Glass to Metal Construction
- VRRM 200 to 1000V
- 250A Surge Rating
- Available as Common Anode, Common Cathode, or Doubler

#### Electrical Characteristics

Average forward current (standard)	IF(AV) 30 Amps	TC = 125°C, half sine wave, R <sub>θJC</sub> = 1.4°C/W TC = 82°C, half sine wave, R <sub>θJC</sub> = 2.2°C/W 8.3ms, half sine, T <sub>J</sub> = 200°C
Average forward current (reverse)	IF(AV) 30 Amps	
Maximum surge current	IFSM 250 Amps	
Max I <sup>2</sup> t for fusing	I <sup>2</sup> t 260 A <sup>2</sup> s	
Max peak forward voltage	V <sub>FM</sub> 1.2 Volts	I <sub>FM</sub> = 15A; T <sub>J</sub> = 25°C*
Max peak reverse current	I <sub>RM</sub> 25 μA	V <sub>RRM, T<sub>J</sub></sub> = 25°C
Max peak reverse current	I <sub>RM</sub> 1.0 mA	V <sub>RRM, T<sub>J</sub></sub> = 150°C
Typical reverse current	I <sub>RM</sub> .2 μA	V <sub>RRM, T<sub>J</sub></sub> = 25°C
Max Recommended Operating Frequency	10kHz	

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

#### Thermal and Mechanical Characteristics

Storage temperature range	T <sub>STG</sub>	-65°C to 200°C
Operating junction temp range	T <sub>J</sub>	-65°C to 200°C
Maximum thermal resistance (standard polarity)	R <sub>θJC</sub>	1.4°C/W Junction to Case
Typical thermal resistance (standard polarity)	R <sub>θJC</sub>	1.2°C/W Junction to Case
Maximum thermal resistance (reverse polarity)	R <sub>θJC</sub>	2.2°C/W Junction to Case
Typical thermal resistance (reverse polarity)	R <sub>θJC</sub>	2.0°C/W Junction to Case
Typical thermal resistance	R <sub>θCS</sub>	0.5°C/W Case to sink
Weight		1.0 ounces (28 grams) typical

**Microsemi Corp.**  
**Colorado**

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Figure 1  
Typical Forward Characteristics — Per Leg

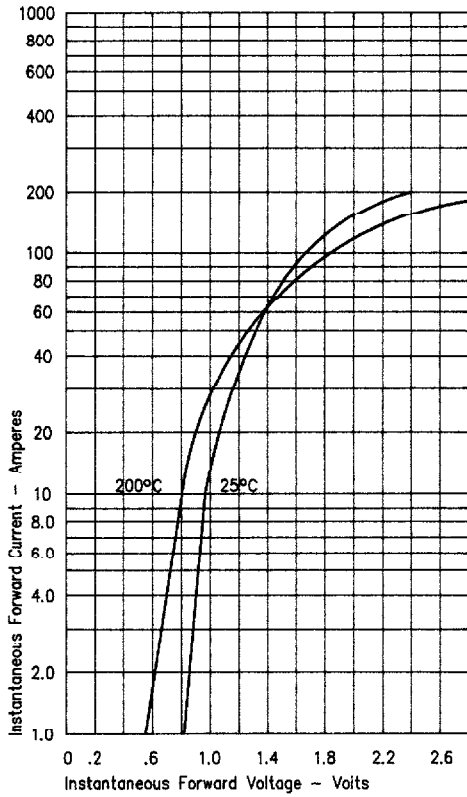


Figure 2  
Typical Reverse Characteristics — Per Leg

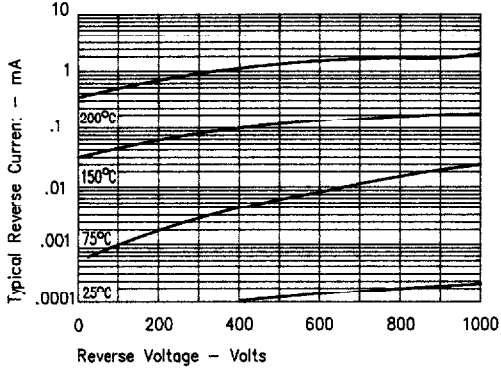


Figure 3  
Forward Current Derating — Per Leg — Standard Polarity

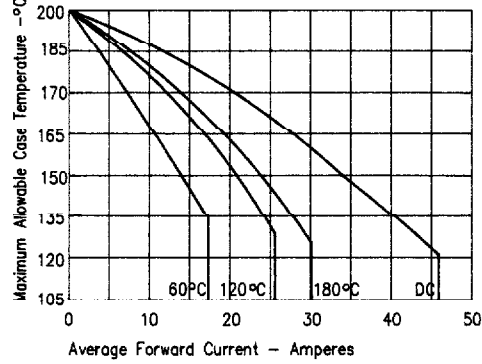


Figure 4  
Maximum Forward Power Dissipation — Per Leg — Standard Polarity

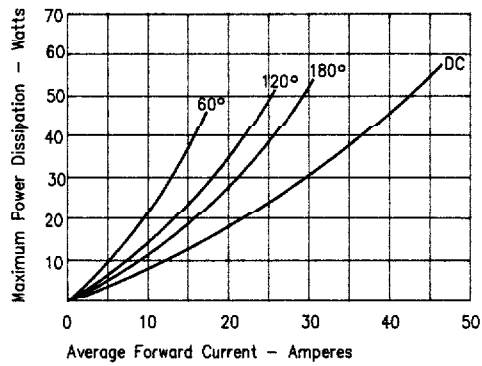
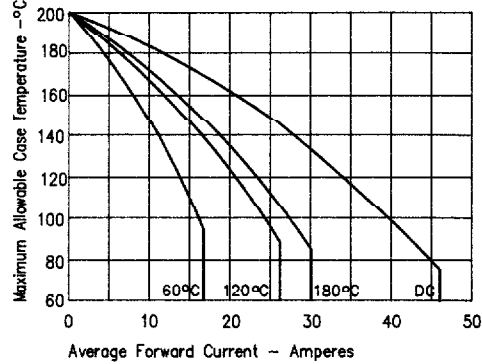


Figure 5  
Forward Current Derating — Per Leg — Reverse Polarity



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

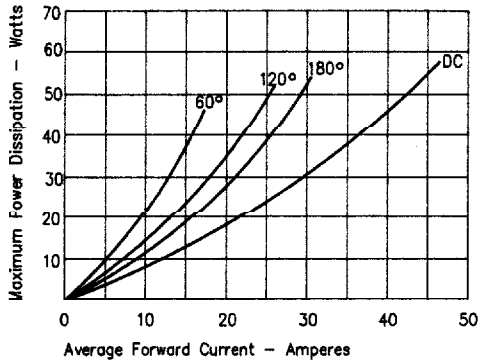


Figure 8  
Transient Thermal Impedance — Per Leg — Reverse Polarity

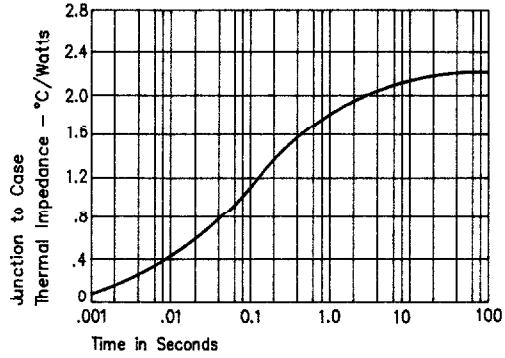


Figure 7  
Transient Thermal Impedance — Per Leg — Standard Polarity

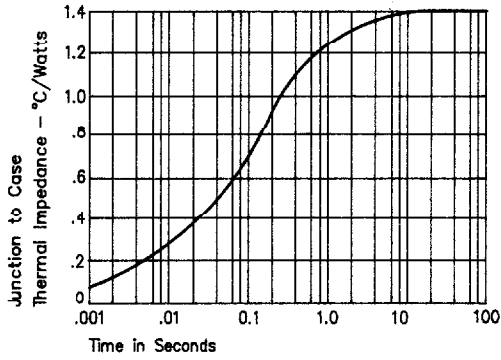


Figure 9  
Maximum Nonrepetitive Surge Current — Per Leg

