



Microsemi Corp.

The diode experts

SCOTTSDALE, AZ

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(602) 941-6300

**30S
SERIES**

DESCRIPTION/FEATURES

- ECONOMICAL SERIES
- HIGH SURGE, 150 AMP MAXIMUM
- UNIVERSAL REPLACEMENT FOR MANY GLASS, EPOXY, ENCAPSULATED, AND METALLIC RECTIFIERS
- PEAK REVERSE VOLTAGES THROUGH 1000 VOLTS

VOLTAGE RATINGS

Part Number	V _{RRM} - Working Peak Reverse Voltage (V) T _J = -65°C to 175°C	V _R - Max. Direct Reverse Voltage (V) T _J = -65°C to 175°C
30S1	100	100
30S2	200	200
30S3	300	300
30S4	400	400
30S5	500	500
30S6	600	600
30S8	800	800
30S10	1000	1000

ELECTRICAL SPECIFICATIONS

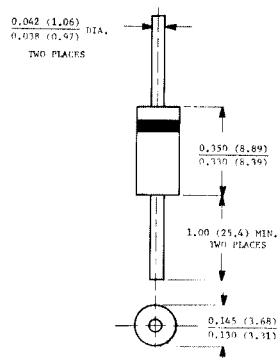
		Units	Conditions
I _{F(AV)} Max. average forward current	3.0	A	1 phase operation, 180° conduction, T _L = 125°C, lead length 9.5 mm (0.375 in.)
I _{FSM} Max. peak one cycle non-repetitive surge current	143	A	Half cycle 50 Hz sine wave or 6 ms rectangular pulse
	150		Half cycle 60 Hz sine wave or 5 ms rectangular pulse
	170		Following any rated load condition and with rated V _{RRM} applied.
	178		Half cycle 50 Hz sine wave or 6 ms rectangular pulse
I _{2t} Max. I _{2t} for fusing	103	A ² s	Half cycle 60 Hz sine wave or 5 ms rectangular pulse
	94		Following any rated load condition and with V _{RRM} applied following surge = 0.
	146		t = 10 ms With rated V _{RRM} applied following surge, initial T _J = 175°C.
	133		t = 8.3 ms
I ₂ √t Max. I ₂ √t for individual device fusing	1450	A ² √s	t = 10 ms With V _{RRM} = 0 following surge, initial T _J = 175°C.
			t = 8.3 ms
V _{FM} Max. peak forward voltage	1.0	V	t = 0.1 to 10 ms, V _{RRM} = 0 following surge.
I _{R(AV)} Max. average reverse current	0.3	mA	I _{F(AV)} = 3A (9.4A peak); T _J = 25°C.
			Max. rated I _{F(AV)} , V _{RRM} and T _L = 100°C. (ℓ = 9.5 mm (0.375 in.))

① I_{2t} for time t_x = I₂√t₁ · √t_x.

THERMAL-MECHANICAL SPECIFICATIONS

T _J Max. operating junction temperature range	-65 to 175	°C	
T _{stg} Max. storage temperature range	-65 to 175	°C	
R _{thJC} Max. internal thermal resistance, junction-to-lead	16.5	deg. C/W	DC operation, double-side cooled, measured 9.5 mm (0.375 in.) from body.
wt Approximate weight	0.65 (0.023)	g (oz.)	

3 AMP MEDIUM POWER SILICON RECTIFIER DIODES



Cathode Indicated by Color Band
All Dimensions in Inches (Millimeters).

MECHANICAL CHARACTERISTICS

CASE: Molded plastic use Flame Retardant Epoxy.

TERMINALS: Axial leads, solderable per MIL-STD-202, Method 208.

POLARITY: Color band denotes cathode.

MOUNTING POSITION: Any.

30S Series

RATING AND CHARACTERISTIC CURVES

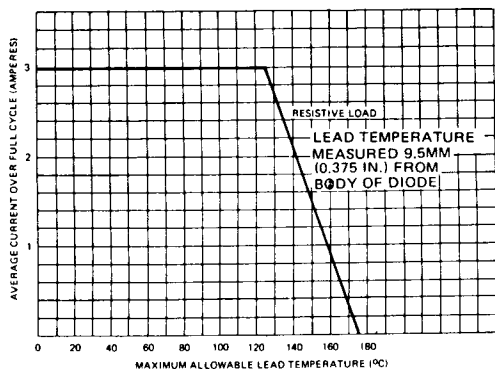


Fig. 1 - Average Forward Current Vs. Lead Temperature at Heat Sinks, $l = 9.5$ mm (3/8 Inch) (Single Phase Operation)

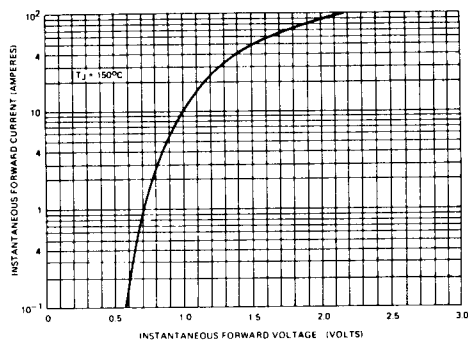


Fig. 2 - Maximum Forward Voltage Vs. Forward Current

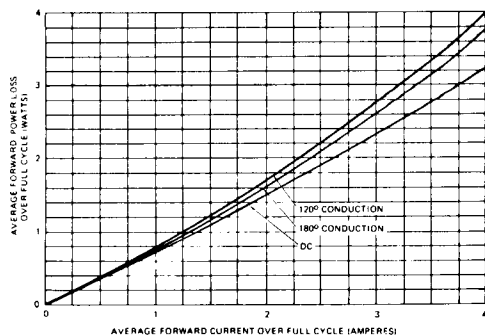


Fig. 3 - Maximum Forward Power Loss Vs. Forward Current (Sinusoidal Current Waveform)

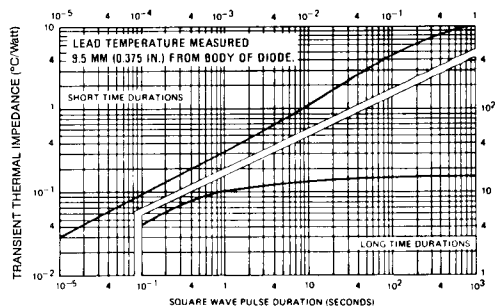


Fig. 4 - Maximum Transient Thermal Impedance, Junction-to-Lead, Vs. Pulse Duration

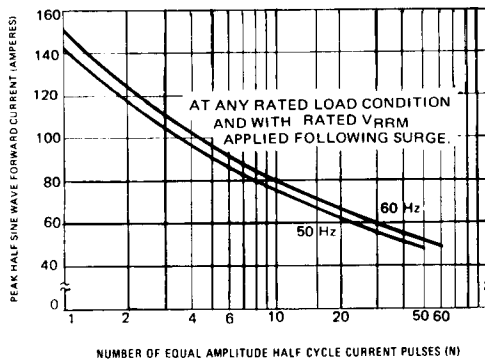


Fig. 5 - Maximum Non-Repetitive Surge Current Vs. Number of Current Pulses