



Microsemi Corp.
The diode experts

SCOTTSDALE, AZ
For more information call:
(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 _{WM} - 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

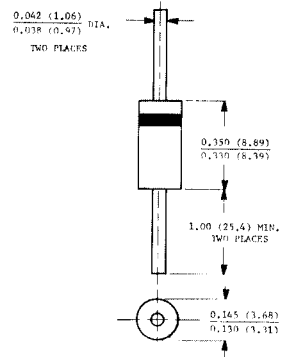
Symbol	Parameter	Value	Units	Conditions
I _{F(AV)}	Max. average forward current	3.0	A	1 phase operation, 180° conduction. T _L = 125°C, lead length 9.5 mm (0.375 in.)
I _{FSM}	Max. peak one cycle non-repetitive surge current	143	A	Half cycle 50 Hz sine wave or 6 ms rectangular pulse
		150		Half cycle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

① I²_t for time t_x = I²√t · √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

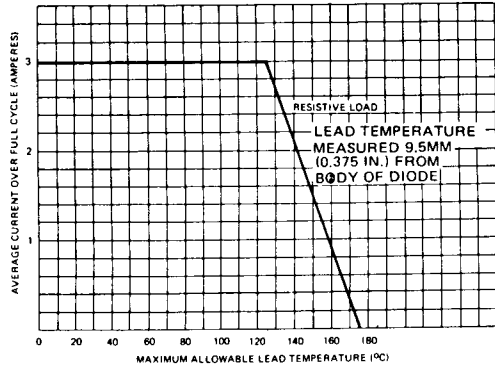


Fig. 1 - Average Forward Current Vs. Lead Temperature at Heat Sinks, $l = 9.5$ mm (3/8 Inch) (Single Phase Operation)

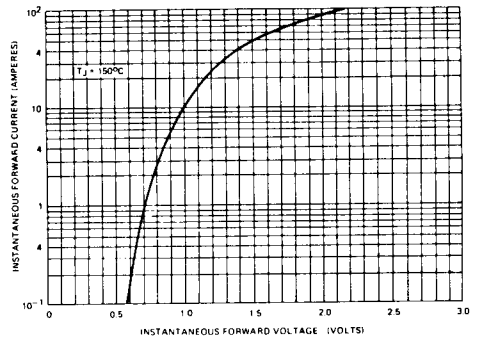


Fig. 2 - Maximum Forward Voltage Vs. Forward Current

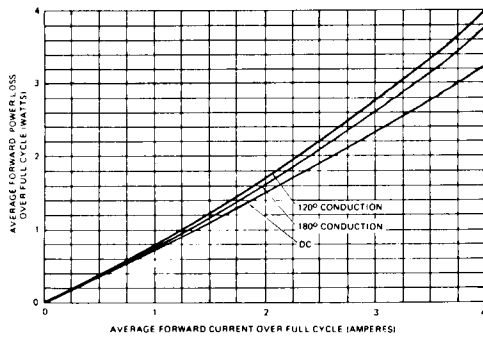


Fig. 3 - Maximum Forward Power Loss Vs. Forward Current (Sinusoidal Current Waveform)

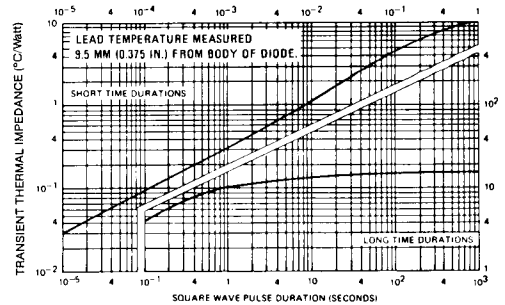


Fig. 4 - Maximum Transient Thermal Impedance, Junction-to-Lead, Vs. Pulse Duration

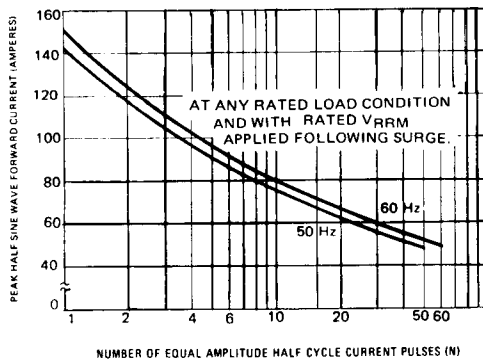


Fig. 5 - Maximum Non-Repetitive Surge Current Vs. Number of Current Pulses