



Microsemi Corp.
The diode experts

60S SERIES

SCOTTSDALE, AZ

For more information call:
(602) 941-6300

DESCRIPTION/FEATURES

- ECONOMICAL 6 AMP I_O MOLDED DEVICE OFFERS CAPABILITY OF STUD-MOUNTED RECTIFIERS
- 400 AMPS SURGE PROVIDES HIGH IN-RUSH CURRENT CAPABILITY
- WIDE VOLTAGE RANGE AVAILABLE: 50 TO 1000 VOLTS V_{RRM}

Major Ratings and Characteristics

	60S	
$I_F(AV)$	6	A
@ Max. T_L	95	$^{\circ}C$
I_{FSM}		
@ 50 Hz	382	A
@ 60 Hz	400	
I^2t		A^2s
@ 50 Hz	712	
@ 60 Hz	650	
T_J	-40 to 175	$^{\circ}C$
V_{RRM} Range	50-1000	V

VOLTAGE RATINGS

Part Number	Working V_{RRM} (V)	V_p - Max. Direct Reverse Voltage (V)
	$T_J = -40^{\circ}C$ to $200^{\circ}C$	$T_J = -40^{\circ}C$ to $200^{\circ}C$
60S05	50	50
60S1	100	100
60S2	200	200
60S4	400	400
60S5	500	500
60S6	600	600
60S8	800	800
60S10	1000	1000

ELECTRICAL SPECIFICATIONS

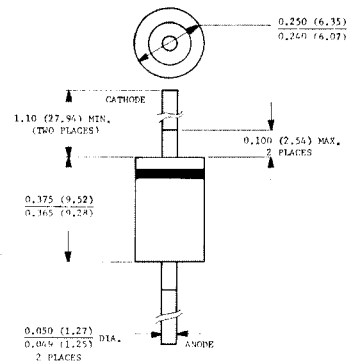
	60S	Units	Conditions
$I_F(AV)$ Max. average forward current	6	A	1 phase operation, 180 $^{\circ}$ conduction, $T_L = 95^{\circ}C$, $\ell = 9.5$ mm (0.375 in.)
I_{FSM} Max. peak one-cycle non-repetitive surge current	382	A	Half cycle 50 Hz sine wave or 6 ms rectangular pulse Following any rated load condition and with rated V_{RRM} applied
	400		Half cycle 60 Hz sine wave or 5 ms rectangular pulse
	454		Half cycle 50 Hz sine wave or 6 ms rectangular pulse Following any rated load condition and with V_{RRM} applied following surge = 0
	475		Half cycle 60 Hz sine wave or 5 ms rectangular pulse
I^2t Max. I^2t for fusing	712	A^2s	$t = 10$ ms With rated V_{RRM} applied following surge, initial $T_J = 175^{\circ}C$
	650		$t = 8.3$ ms
	1006		$t = 10$ ms With $V_{RRM} = 0$ following surge, initial $T_J = 175^{\circ}C$
	919		$t = 8.3$ ms
$I^2\sqrt{t}$ Max. $I^2\sqrt{t}$ for individual device fusing (1)	10 330	$A^2\sqrt{s}$	$t = 0.1$ to 10 ms, $V_{RRM} = 0$ following surge
V_{FM} Max. peak forward voltage	100	V	$I_F(AV) = 6A$ (18.8A peak), $T_J = 25^{\circ}C$
$I_{R(AV)}$ Max. average reverse current	50 - 100V	mA	Max. rated $I_F(AV)$ and V_{RRM} , $T_C = 95^{\circ}C$, length of leads to the temperature measurement points (heat sinks) = 9.5 mm (0.375 in.)
	200V		
	400-500V		
	600-1000V		

THERMAL-MECHANICAL SPECIFICATIONS

T_J Max. operating junction temperature range	-40 to 175	$^{\circ}C$	
T_{stg} Max. storage temperature range	-40 to 175	$^{\circ}C$	
R_{thJC} Max. internal thermal resistance, junction-to-leads		deg C/W	DC operation, double side cooled, measured 9.5 mm (0.375 in.) from body
	Length of leads (1) (1/8") 3.2 mm	11.0	
θ Length of leads (1) (3/8") 9.5 mm		14.7	
	Length of leads (1) (3/4") 19 mm	20.0	
wt. Approximate weight	1.5 (0.053)	g (oz)	$\pm 10\%$

Note (1): I^2t for time $t_x = I^2\sqrt{t} \cdot \sqrt{t_x}$

6 AMP AXIAL-LEAD SILICON RECTIFIER DIODES



All Dimensions in Inches and (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.

60S Series

RATING AND CHARACTERISTIC CURVES

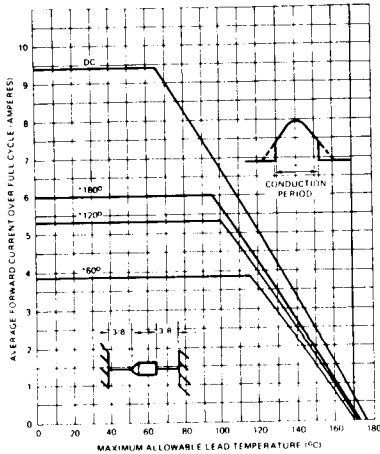


Fig. 1 — Average Forward Current Vs. Lead Temperature at Heat Sinks ($l = 3/8$ inch)

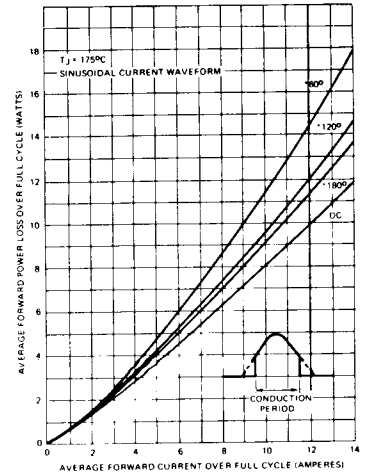


Fig. 2 — Maximum Average Forward Power Loss Vs. Low-Level Average Forward Current

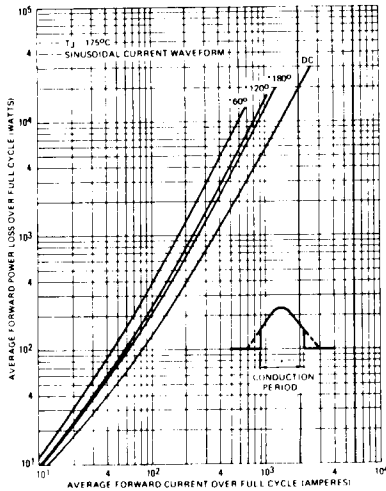


Fig. 3 — Maximum Average Forward Power Loss Vs. High-Level Forward Current

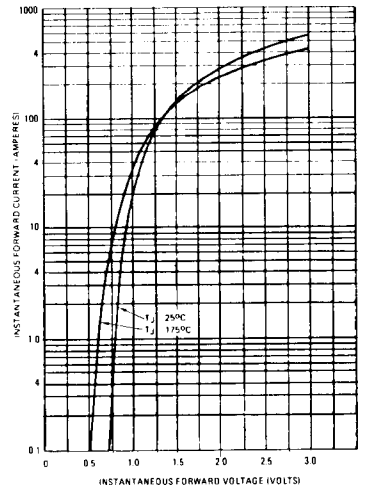


Fig. 4 — Maximum Instantaneous Forward Voltage Vs. Instantaneous Forward Current

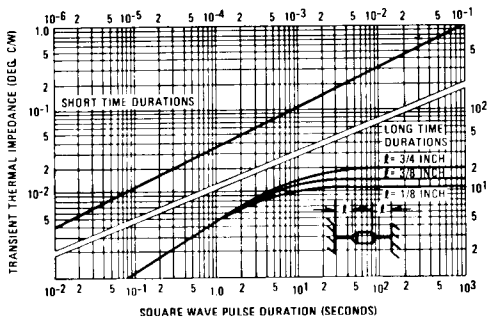


Fig. 5 — Maximum Transient Thermal Impedance, Vs. Square Wave Pulse Duration

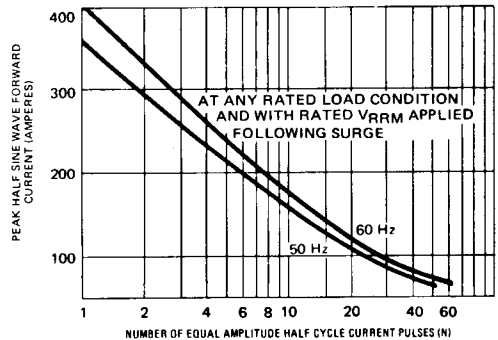


Fig. 6 — Maximum Non-Repetitive Surge Current Vs. Number of Current Pulses