



**SOLID STATE INC.**

46 FARRAND STREET  
BLOOMFIELD, NEW JERSEY 07003

www.solidstateinc.com

**1N3491 thru 1N3495**  
**MR327 MR330**  
**MR328 MR331**

**SILICON RECTIFIERS**  
**25 AMPERE**

**50-1000 VOLTS**  
**DIFFUSED JUNCTION**

**MEDIUM-CURRENT SILICON RECTIFIERS**

... compact, highly efficient silicon rectifiers for medium-current applications.



**\*MAXIMUM RATINGS**

Rating	Symbol	1N3491	1N3492	1N3493	1N3494	1N3495	MR327	MR328	MR330	MR331	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$										
Working Peak Reverse Voltage	$V_{RWM}$	50	100	200	300	400	500	600	800	1000	Volts
DC Blocking Voltage	$V_R$										
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	210	280	350	420	560	700	Volts
Average Rectified Forward Current (single phase, resistive load, 60 Hz, see Figure 3) $T_C = 100^\circ\text{C}$	$I_O$	←----- 25 -----→									Amp
Nonrepetitive Peak Surge Current (surge applied at rated load conditions, see Figure 5)	$I_{FSM}$	←----- 300 (for 1/2 cycle) -----→									Amp
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	←----- -65 to +175 -----→									$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.2	$^\circ\text{C}/\text{Watt}$

**MECHANICAL CHARACTERISTICS**

**CASE:** Welded, hermetically sealed construction.

**FINISH:** All external surfaces corrosion-resistant and the terminal lead is readily solderable.

**POLARITY:** CATHODE TO CASE (reverse polarity units are available upon request and are designated by an "R" suffix i.e. MR327R or 1N3491R).

**MOUNTING POSITIONS:** Any.

# 1N3491 thru 1N3495, MR327, MR328, MR330, MR331

## \*ELECTRICAL CHARACTERISTICS

Characteristic and Conditions	Symbol	Max	Unit
Instantaneous Forward Voltage Drop ( $i_F = 57$ Amps, $T_J = 25^\circ\text{C}$ )	$v_F$	1.7	Volts
Full Cycle Average Reverse Current (18 Amp AV and $V_R$ , single phase, 60 Hz, $T_C = 150^\circ\text{C}$ )	$I_{R(AV)}$		mA
1N3491		10	
1N3492		10	
1N3493		8.0	
1N3494		6.0	
1N3495		4.0	
MR327		3.0	
MR328		2.5	
MR330		2.0	
MR331		1.5	
DC Reverse Current (Rated $V_R$ , $T_C = 25^\circ\text{C}$ )	$I_R$	1.0	mA

FIGURE 1 — MAXIMUM FORWARD VOLTAGE DROP

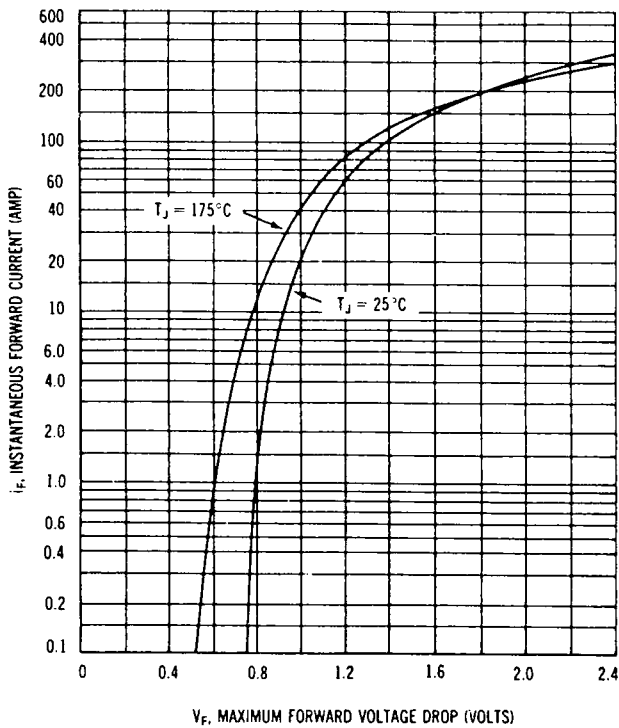
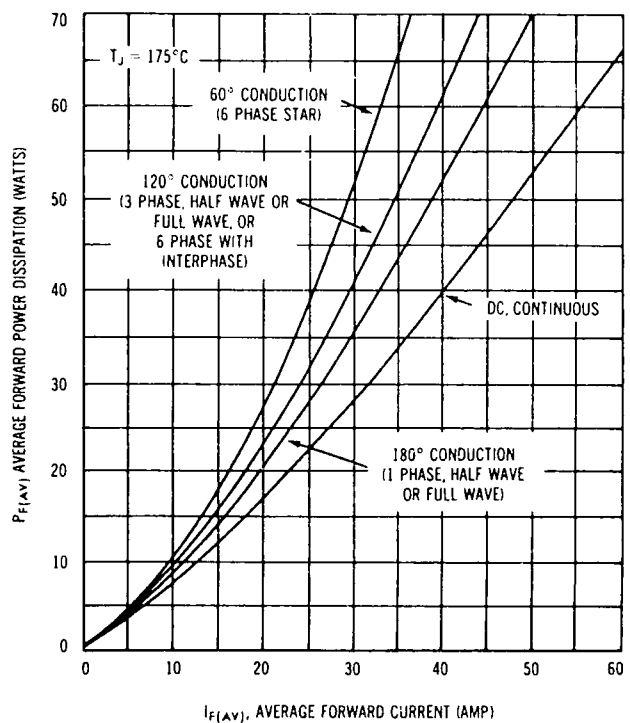


FIGURE 2 — MAXIMUM FORWARD POWER DISSIPATION



# 1N3491 thru 1N3495, MR327, MR328, MR330, MR331

FIGURE 3 — MAXIMUM CURRENT RATINGS

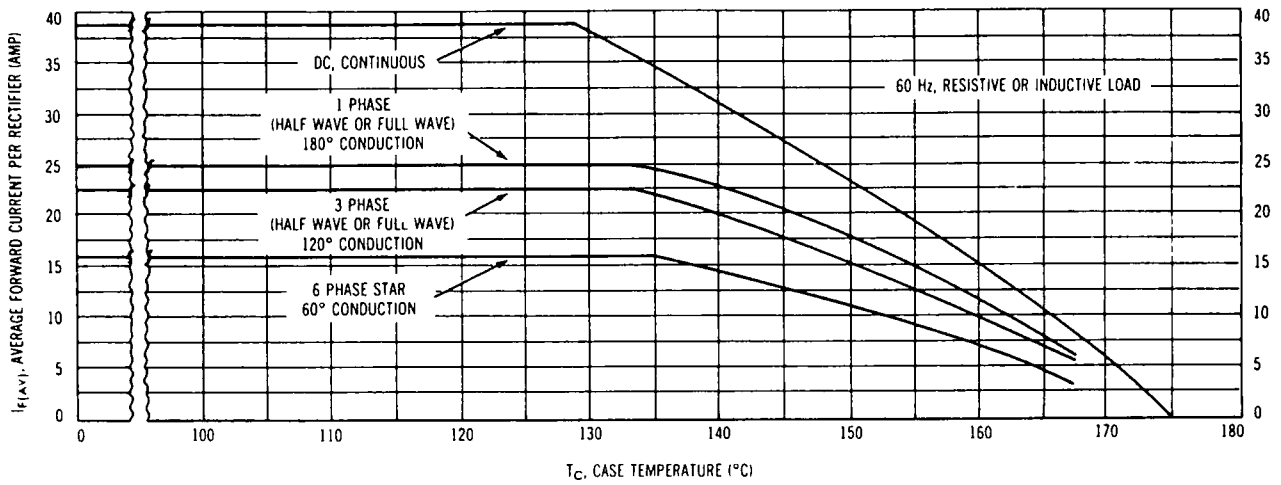


FIGURE 4 — MAXIMUM EFFECTIVE TRANSIENT THERMAL IMPEDANCE

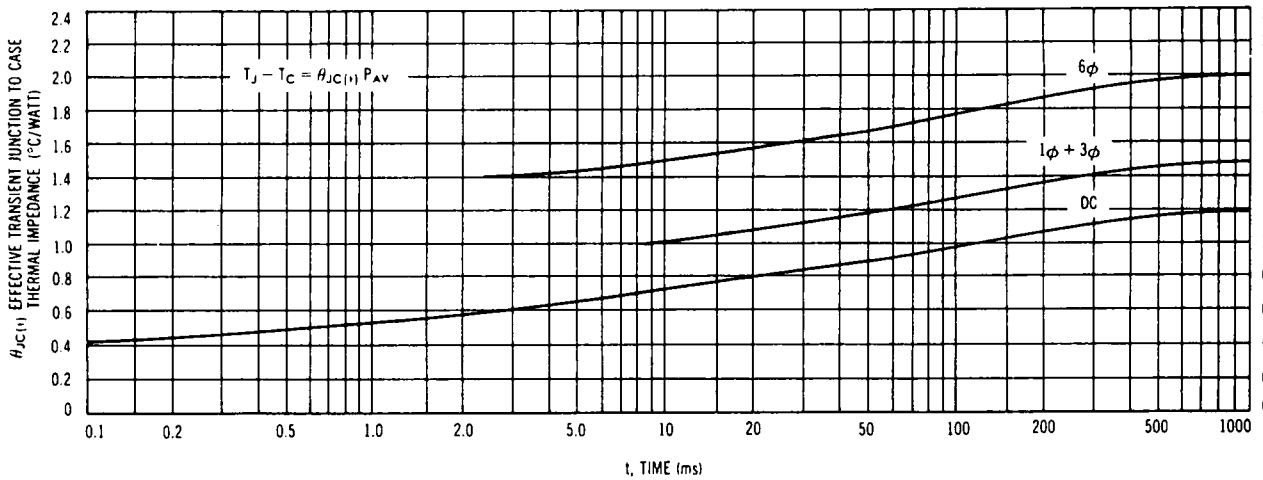
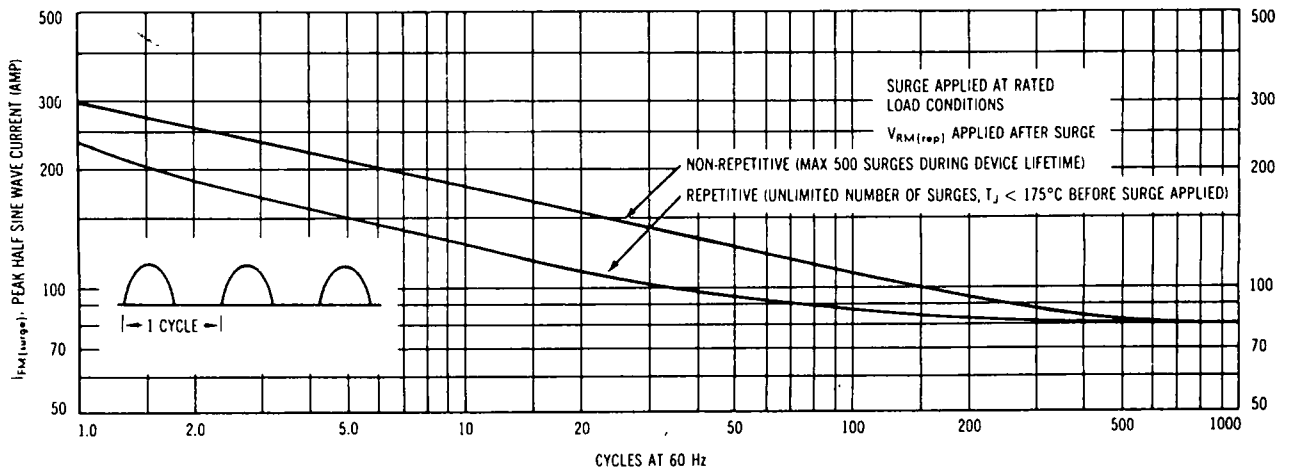


FIGURE 5 — MAXIMUM ALLOWABLE SURGE CURRENT



# 1N3491 thru 1N3495, MR327, MR328, MR330, MR331

## TYPICAL DYNAMIC CHARACTERISTICS

FIGURE 6 — RECTIFICATION EFFICIENCY

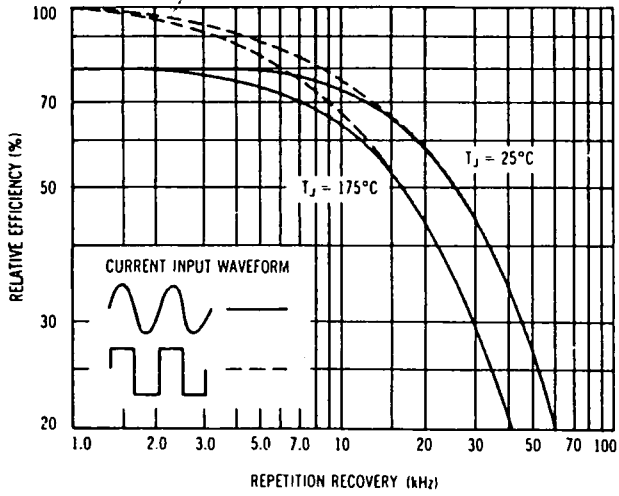


FIGURE 7 — REVERSE RECOVERY TIME

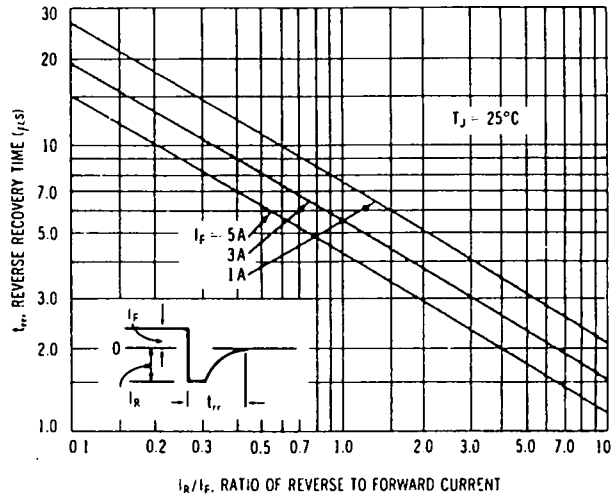


FIGURE 8 — JUNCTION CAPACITANCE

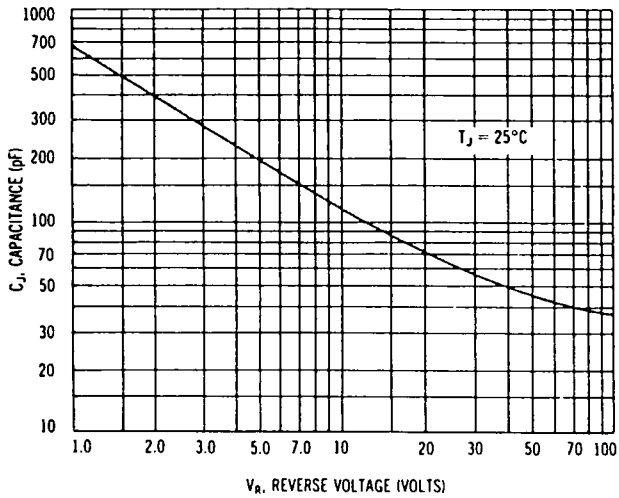
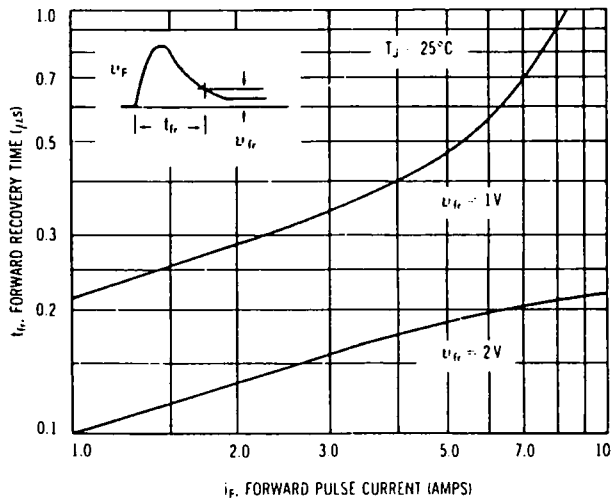
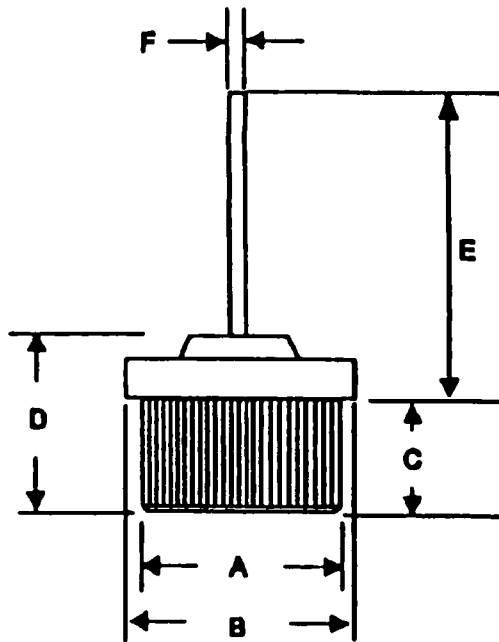


FIGURE 9 — FORWARD RECOVERY TIME



# PRESSFIT



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.502	0.505	12.75	12.82	
B	0.621	0.629	15.77	15.97	
C	0.224	0.232	5.70	5.90	
D	0.378	0.390	9.60	9.90	
E	0.600	0.700	15.24	17.78	
F	0.097	0.103	2.43	2.62	