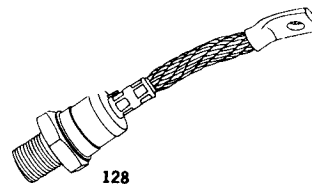


127

## RECTIFIERS 100 TO 150 AMPERES



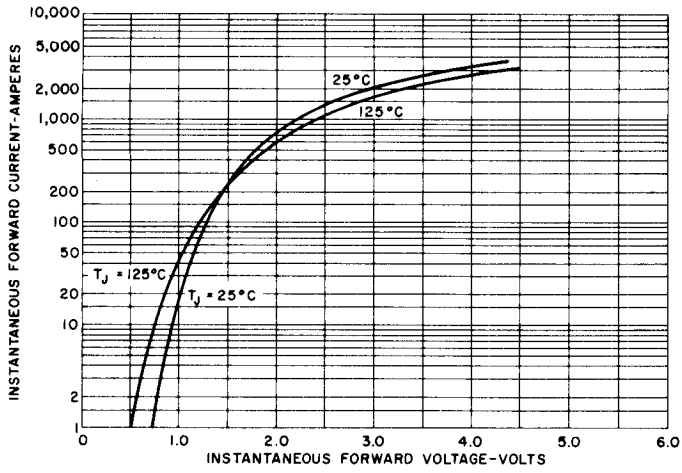
128

JEDEC TYPE		1N3289-96			1N3260-75		
GE TYPE		A70	A170	A177	—	A180	A187
<b>SPECIFICATIONS</b>							
$I_{FM(AV)}$	Max. average forward current (1 phase operation)	100	100	100	160	150	150
	$T_C = (^{\circ}C)$	130	130	130	125	143	110
$V_{RM}$ (surge)	Max. repetitive peak reverse voltage (V)	—	—	—	—	—	—
		50	—	—	—	1N3260	—
		100	A70A	A170A	A177A	1N3261	A180A A187A
		150	—	—	—	1N3262	—
		200	A70B 1N3289	A170B	A177B	1N3263	A180B A187B
		250	—	—	—	1N3264	—
		300	A70C 1N3290	A170C	A177C	1N3265	A180C A187C
		350	—	—	—	1N3266	—
		400	A70D 1N3291	A170D	A177D	1N3267	A180D A187D
		500	A70E 1N3292	A170E	A177E	1N3268	A180E A187E
		600	A70M 1N3293	A170M	A177M	1N3269	A180M A187M
		700	A70S	A170S	A177S	1N3270	A180S A187S
		800	A70N 1N3294	A170N	A177N	1N3271	A180N A187N
		900	A70T	A170T	A177T	1N3272	A180T A187T
		1000	A70P 1N3295	A170P	A177P	1N3273	A180P A187P
		1100	A70PA	A170PA	A177PA	—	A180PA A187PA
		1200	A70PB 1N3296	A170PB	A177PB	1N3274	A180PB A187PB
		1300	—	A170PC	A177PC	—	A180PC A187PC
		1400	—	A170PD	A177PD	1N3275	A180PD A187PD
		1500	—	A170PE	A177PE	—	A180PE A187PE
$I_{FM}$ (surge)	Max. peak one cycle, non-recurrent surge current (60 Hz sine wave, 1 phase operation) @ max. rated load conditions (A)	1600	2500	2500	2000	3400	2800
$I^2t$	Max. non-repetitive for 8.3 msec ( $A^2$ sec)	10,000	28,000	23,500	16,000	46,000	33,000
$T_J$	Operating junction temperature range ( $^{\circ}C$ )	-40 to +200	-40 to +200	-40 to +175	-55 to +190	-40 to +200	-40 to +175
$T_{stg}$	Storage temperature range ( $^{\circ}C$ )	-40 to +200	-40 to +200	-40 to +200	-55 to +190	-40 to +200	-40 to +200
$R_{\theta JC}$	Max. thermal resistance, junction-to-case ( $^{\circ}C/W$ )	.4	.4	.4	.3	.3	.3
$V_{FM}$	Max. Peak forward voltage drop @ rated $I_{F(AV)}$ (1 phase operation)	1.15	1.3	1.3	1.6	1.3	—
	@ $T_C = (^{\circ}C)$	25	130	25	125	143	—
$Q_{rr}$	Max. reverse recovered charge, $T_J = 25^{\circ}C$	—	—	25	—	—	30
<b>PACKAGE OUTLINE NO.</b>		127	127	127	128	127	127

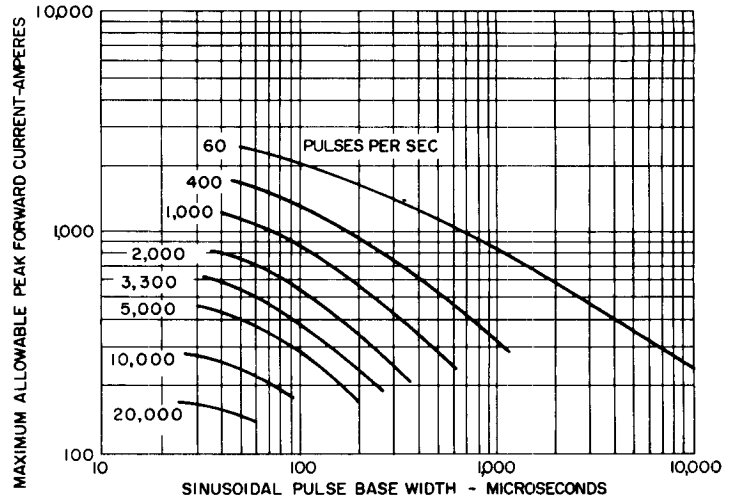


# DEVICE SPECIFICATIONS

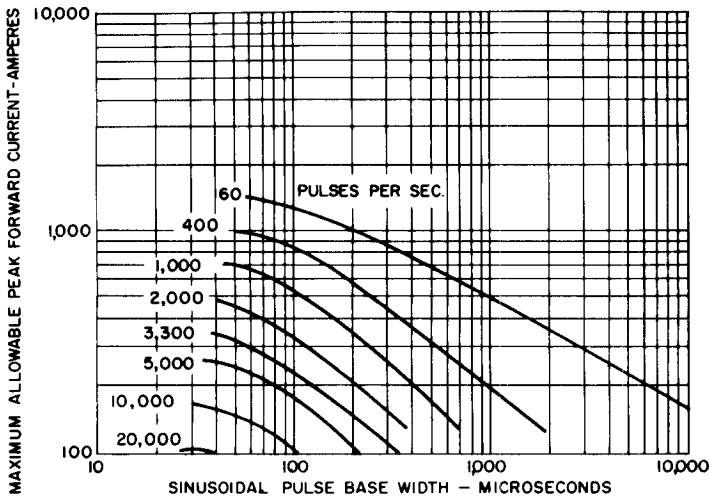
**A177**



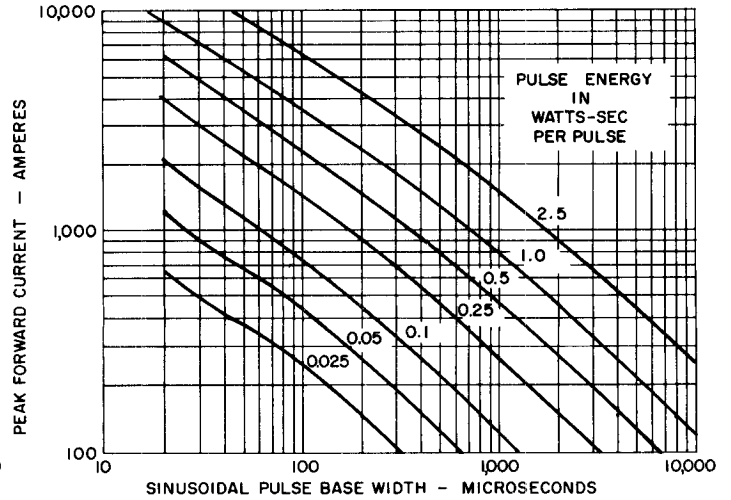
**1. MAXIMUM FORWARD CHARACTERISTICS**



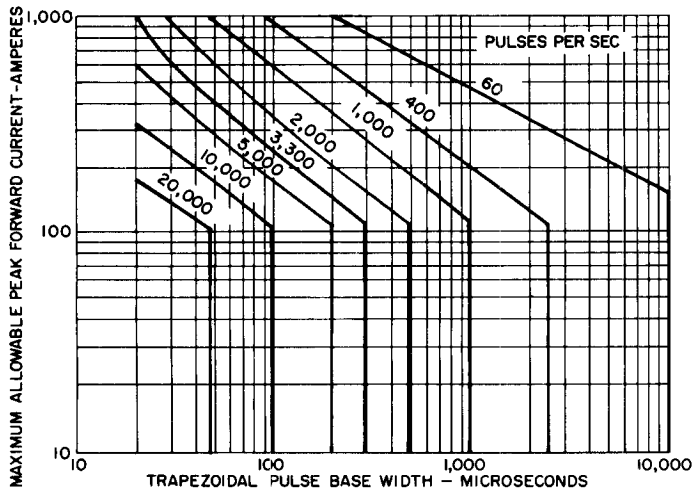
**2. MAXIMUM ALLOWABLE PEAK FORWARD CURRENT SINUSOIDAL WAVEFORM ( $T_C = 65^\circ\text{C}$ )**



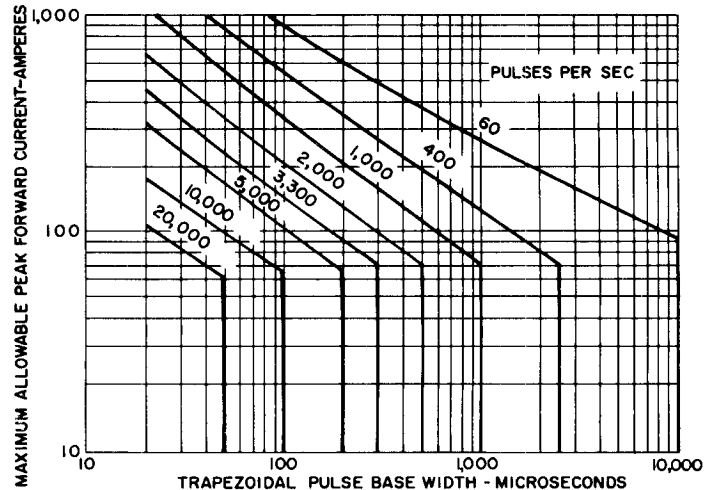
**3. MAXIMUM ALLOWABLE PEAK FORWARD CURRENT SINUSOIDAL WAVEFORM ( $T_C = 90^\circ\text{C}$ )**



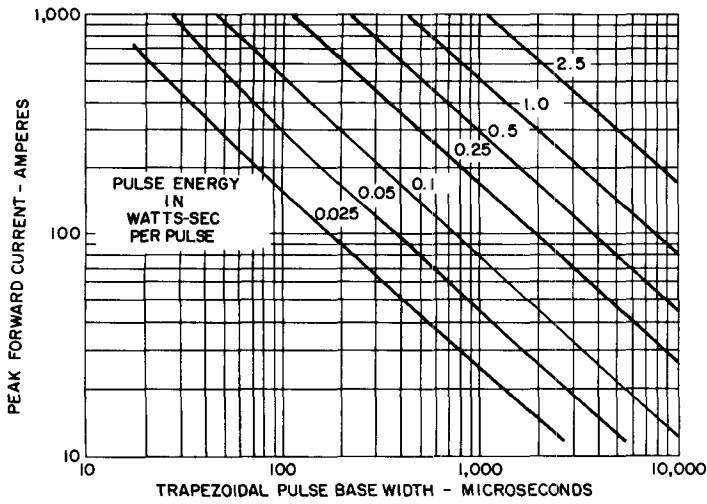
**4. SINUSOIDAL PULSE ENERGY ( $T_C = 125^\circ\text{C}$ )**



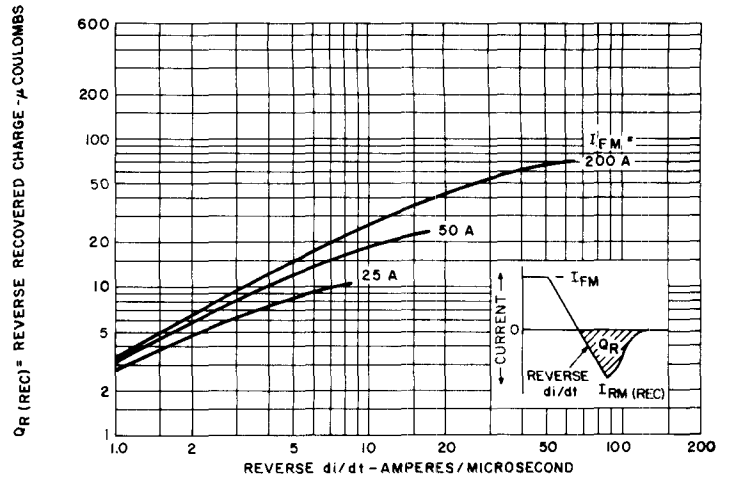
**5. MAXIMUM ALLOWABLE PEAK FORWARD CURRENT, TRAPEZOIDAL WAVEFORM ( $T_C = 65^\circ\text{C}$ ), DI/DT (RISING & FALLING) = 100 A/ $\mu\text{S}$**



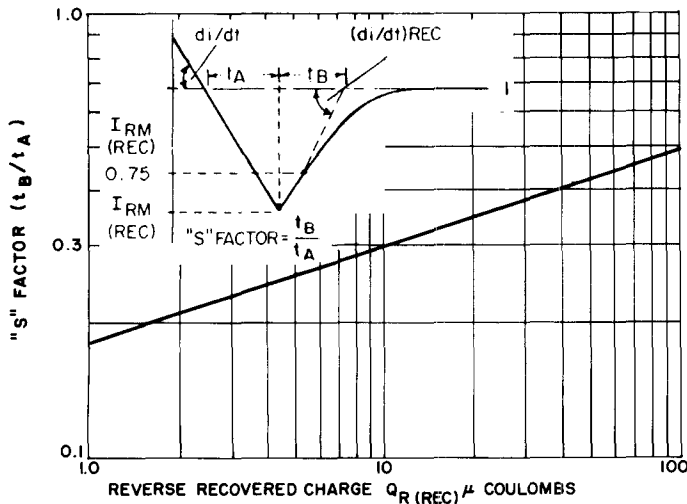
**6. MAXIMUM ALLOWABLE PEAK FORWARD CURRENT, TRAPEZOIDAL WAVEFORM ( $T_C = 90^\circ\text{C}$ ), DI/DT (RISING & FALLING) = 100 A/ $\mu\text{S}$**



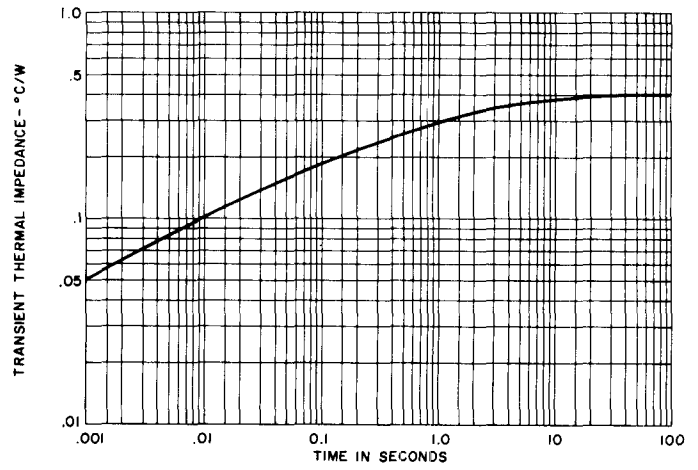
7. TRAPEZOIDAL PULSE ENERGY  
DI/DT (RISING & FALLING) = 100 A/ $\mu$ S



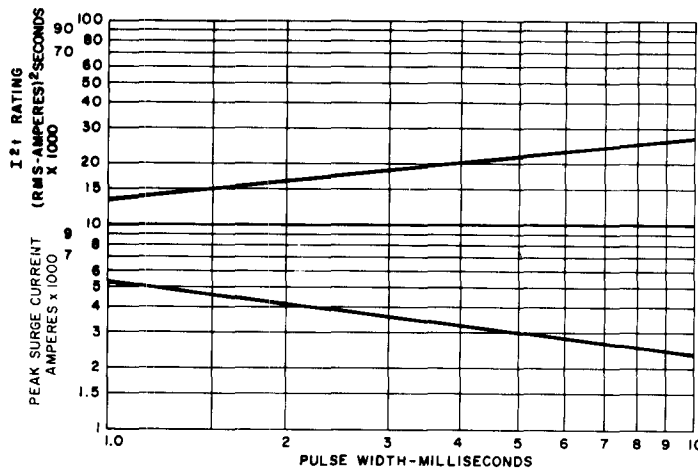
8. RECOVERED CHARGE ( $T_J = 125^\circ\text{C}$ )  
(Maximum Recovered Charge Group 12)  
If maximum recovered charge group 12 is required,  
request A177\_\_ X9, e.g. A177BX9, A177RBX9, etc.



9. TYPICAL "S" FACTOR VERSUS REVERSE RECOVERED CHARGE ( $T_J = 125^\circ\text{C}$ )

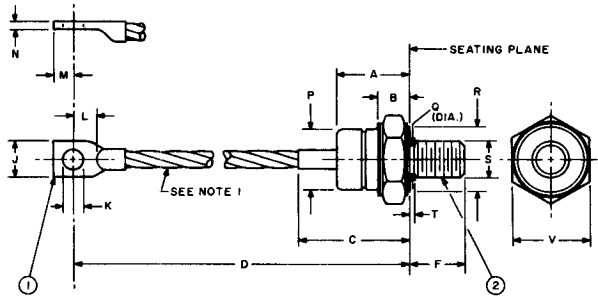


10. TRANSIENT THERMAL IMPEDANCE - JUNCTION-TO-CASE



11. SUB-CYCLE SURGE FORWARD CURRENT AND  $I^2t$  RATING VERSUS PULSE TIME FOLLOWING RATED LOAD CONDITIONS

### OUTLINE DRAWING



MODEL	TERMINAL 1	TERMINAL 2	S THREAD SIZE	F THREAD LENGTH	Q RELIEF DIAMETER
A177 FORWARD POLARITY	ANODE	CATHODE	3/8 - 24	.640	.373
				.610 IN.	.344
A177R REVERSE POLARITY	CATHODE	ANODE	UNF - 2A	16.26	9.47
				15.49	8.74

TABLE OF DIMENSIONS  
Conversion Table

SYM.	DECIMAL INCHES		METRIC MM		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	1.020	1.140	25.90	28.96	
B	.390	.500	9.90	12.70	
C	1.570	1.750	39.67	44.45	
D	4.345	4.745	110.36	120.52	
J	.500	.625	12.70	15.88	
K	.255	.261	6.57	6.68	
L	.320	-	8.12	-	
M	.280	.320	7.11	8.13	
N	.060	.090	1.52	2.29	
P	.840	.910	21.33	23.11	
R	.920	-	23.36	-	3
T	-	.060	-	1.52	4
V	1.052	1.063	26.72	27.00	

NOTES:

1. Flexible Copper Lead, 3/16 Inch Nominal Diameter.
2. One Nut and One Lockwasher Supplied With Each Unit. Material of Hardware is Steel-Cad Plated.
3. "R" Dimension is Diameter of Effective Seating Area.
4. "T" Dimension is Area of Unthreaded Portion. Complete Threads are Within 2.5 Threads of Seating Plane.
5. Angular Orientation of Terminals is Undefined.
6. Approximate Weight: 105 Grams.

### MOUNTING INSTRUCTIONS

Following these installation instructions will result in a rectifier diode-to- heatsink contact thermal resistance of 0.10°C/watt or less.

1. Be sure mounting surface is clean and flat within .001 inch/inch.
2. Mounting hole diameter should not exceed the outside diameter of the rectifier diode stud by more than 1/16 inch, and should be deburred.
3. Use Dow Corning's DC3, 4, 340 or 640 or GE G322L or equivalent, on mounting surfaces that come in contact with the heatsink.
4. Use only hardware furnished with each rectifier diode.
5. Tighten with a torque wrench, from nut side, to 100 lb-in max.