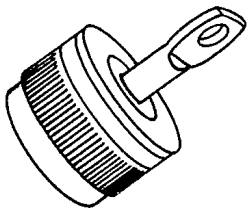
Silicon Rectifiers

A44F,M
A45F,M

A40 SERIES SEE PAGE 230
A70 SERIES SEE PAGE 234

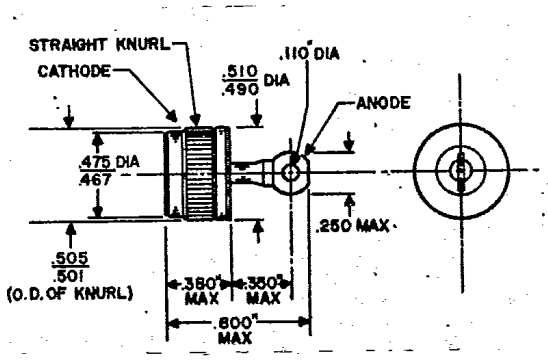
General Electric has designed this 20 Ampere rectifier specifically for the light industrial and consumer low ambient temperature applications. The design utilizes the smallest practical size for the rating with particular attention to rigidity and rugged construction. The solid one-piece terminal provides good mechanical strength, and minimizes breakage problems.



- High Surge Current Capabilities (Up to 300 Amperes)
- One-Piece Terminal
- Reverse Polarity Devices Available
- Small Size

OUTLINE DRAWING

DIRECTION OF EASY CONVENTIONAL CURRENT FLOW
(FORWARD POLARITY DEVICES)



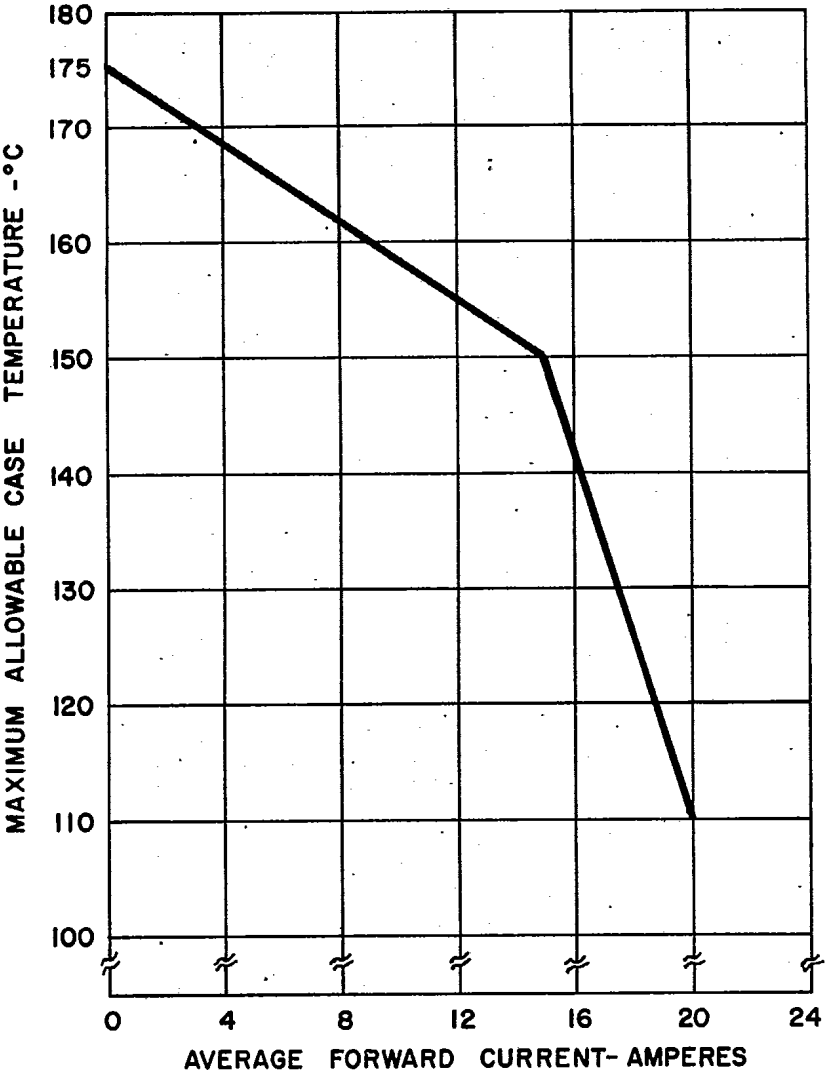
RATINGS AND CHARACTERISTICS (Single Phase Resistive Load)

	Forward Polarity	A44F	A44A	A44B	A44C	A44D	A44E	A44M	
	Reverse Polarity	A45F	A45A	A45B	A45C	A45D	A45E	A45M	
Max. Peak Reverse Voltage		50	100	200	300	400	500	600	volts
Max. Continuous D-C Reverse Voltage		50	100	200	300	400	500	600	volts
Max. Sine Wave RMS Voltage		35	70	140	210	280	350	420	volts
Max. Avg. D-C Forward Current									
At 110°C Case		←			20 amps			→	
At 150°C Case		←			15 amps			→	
Peak One-cycle Forward Surge Current (60 cps, $T_J = 25°C$)		←			300 amps			→	
I^2t Rating for Fusing or Capacitor Inrush		←			100 amp² sec			→	
Max. Forward Voltage at 20 Amps D-C Forward Current ($T_J = 25°C$)		←			1.2 volts			→	
Max. Avg. Forward Voltage Drop (15 amps d-c single phase, $T_J = 150°C$)		←			0.75 volts			→	
Max. Reverse Current at Rated D-C Reverse Voltage ($T_J = 25°C$)		←			1.0 ma			→	
Max. Full Load Reverse Current (full cycle avg., single phase, $T_J = 150°C$)		10	9	8	6	5	4.5	4.0	ma
Typical Thermal Resistance (junction to case)		←			1.5°C/watt			→	
Operating Junction Temperature Range		←			−65°C to +175°C			→	
Storage Temperature Range		←			−65°C to +175°C			→	

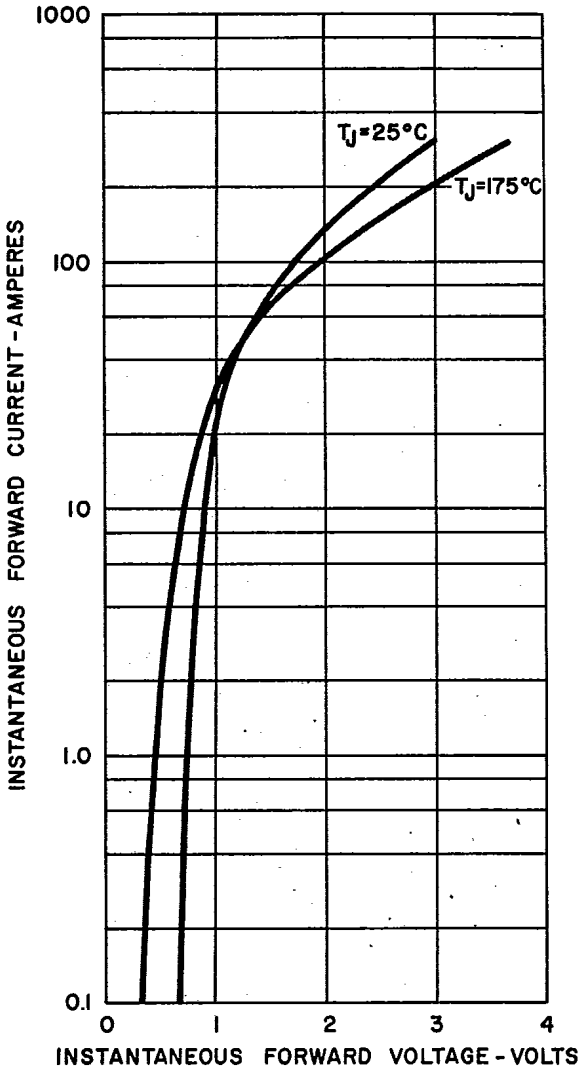
RECOMMENDED MOUNTING PROCEDURE FOR PRESS-FITTING IN A HEATSINK

When press-fitting these diodes into a heatsink, the following specifications and recommendations apply.

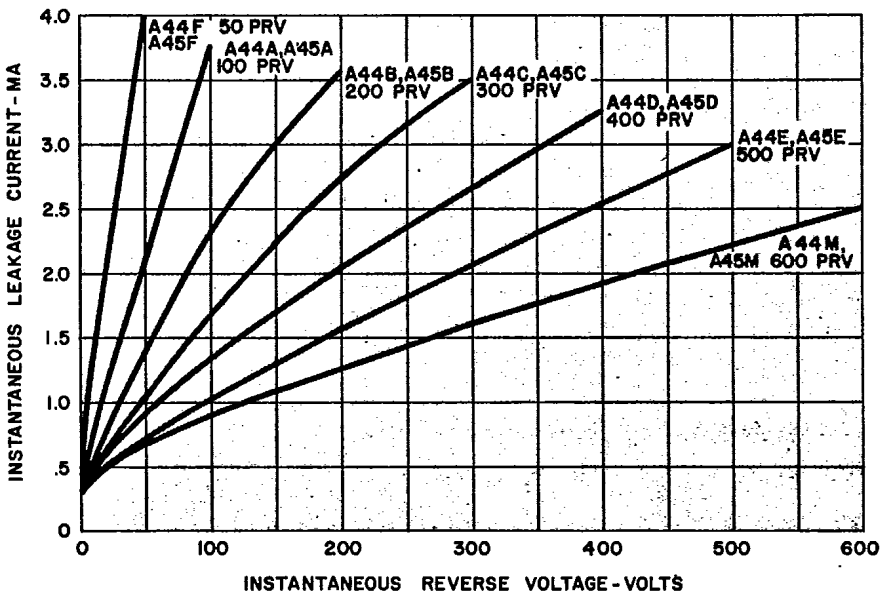
1. The heatsink thickness should be at least ⅛".
2. The hole diameter into which the diode is pressed should be 0.4975 ± .001 inches. A slight chamfer of the hole should be used.
3. The entire knurled section of the diode should be in contact with the heatsink to insure maximum heat removal.
4. The diode insertion force should not exceed 800 pounds. This force should be uniformly applied to the top face of the diode within an annular ring of diameter .44 ± .05 inches.
5. The thermal resistance between the diode case and the heatsink will not exceed 0.5°C/W if the diode is installed in the manner described above.



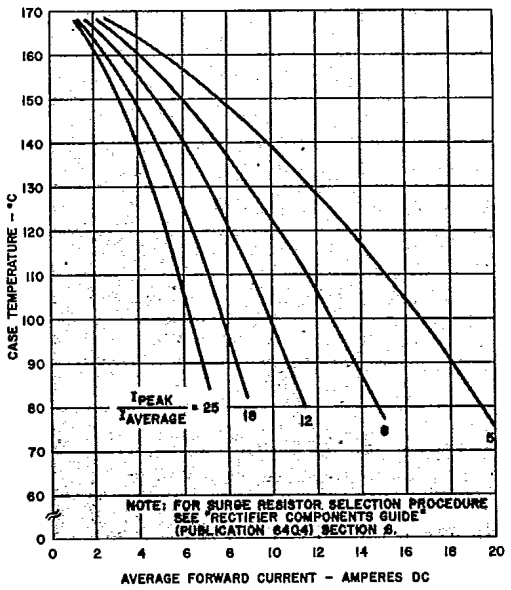
1. SINGLE PHASE AND THREE PHASE CURRENT RATING AS A FUNCTION OF STUD TEMPERATURE



2. TYPICAL FORWARD CHARACTERISTICS



3. TYPICAL REVERSE CHARACTERISTICS (T_J = 175°C)



4. HALFWAVE CAPACITIVE LOAD RATING

A----000 44F-2X