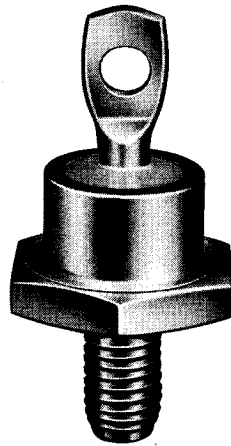


# Series 31



# Avalanche Silicon Power Rectifiers



### ELECTRICAL CHARACTERISTICS:

Maximum Average Forward Current, Single Phase Half  
 Wave DC Rating at 124° C. Case Temperature ..... 30 amperes  
 Maximum Surge Current  
 (one cycle of 60 CPS sine wave) ..... 300 amperes  
 Peak Forward Voltage  
 at 90 Amps (25° C. Case Temp.) ..... 1.3 Volts Maximum  
 Rated Peak Reverse Voltage Range ..... 50 to 1600 Volts  
 Maximum \*FCA Reverse Current  
 at 150° C. Case Temperature ..... 1.0 Milliamps  
 Maximum Operating Frequency ..... 100,000 CPS  
 Maximum I<sup>2</sup>t (less than 8 ms) ..... 350 Amps<sup>2</sup> - Second  
 Reverse Power Ratings ..... 0.60 Joules  
 \*FCA = Full Cycle Average (measured with a DC meter)

### MECHANICAL CHARACTERISTICS:

Base ..... Steel stud and base with a 1/4"-28 UNF-2A thread for through mounting on a heat sink. Nickel plating of base produces low contact resistance and prevents corrosion.  
 Header ..... Glass to metal construction. Hermetically sealed to base.  
 Weight ..... Approximately 0.5 ounces  
 Mounting Position ..... May be mounted in any position  
 Mounting Torque ..... 75 inch pounds maximum  
 Dimensions ..... In accordance with JEDEC DO-5 outline

### THERMAL CHARACTERISTICS:

Storage and Temperature Range ..... -65° C. to +200° C.  
 Operating Temperature Range  
 Junction ..... -65° C. to +190° C.  
 Impedance (°C/W): Junction to Case ..... 1.8 Maximum

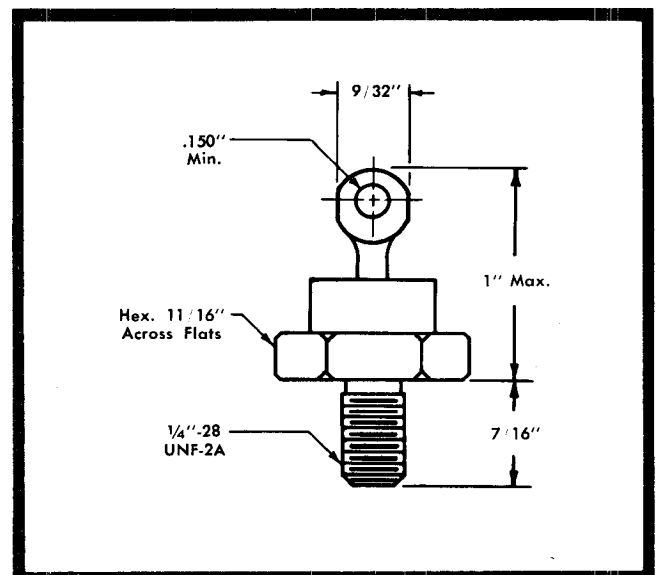
### ENVIRONMENTAL SPECIFICATIONS:

Tests in accordance with (MIL-E-1)

- Tests include:
1. Temperature cycling
  2. Salt spray
  3. Vibration
  4. Shock
  5. Moisture resistance
  6. Temperature soak

### Ratings

JEDEC Numbers	Catalog Number Polarity		Peak Reverse Voltage
	Standard	Reverse	
1N248, 1N1191, 1N2793	S3105	R3105	50
1N249, 1N1192, 1N2794	S3110	R3110	100
1N1193, 1N2021, 1N2795	S3115	R3115	150
1N250, 1N1194, 1N2796	S3120	R3120	200
1N2022, 1N2797	S3125	R3125	250
1N1195, 1N2023, 1N2798	S3130	R3130	300
1N2024, 1N2799	S3135	R3135	350
1N1196, 1N2025, 1N2800	S3140	R3140	400
	S3145	R3145	450
	S3150	R3150	500
1N1197	S3160	R3160	600
	S3170	R3170	700
	S3180	R3180	800
	S3190	R3190	900
	S31100	R31100	1000



Diodes are available with voltage ratings up to 1600 PRV.

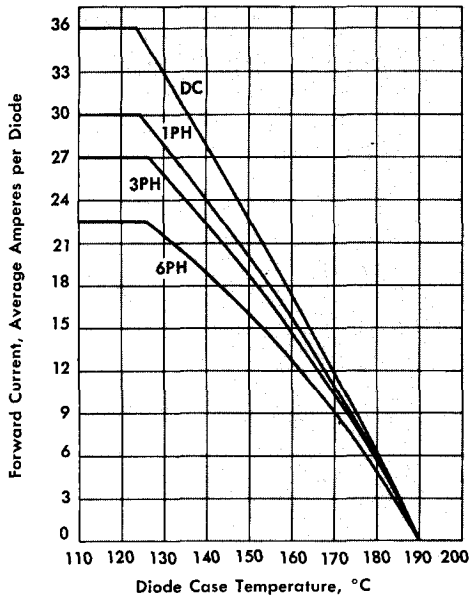


Fig. 1—Load current versus case temperature.

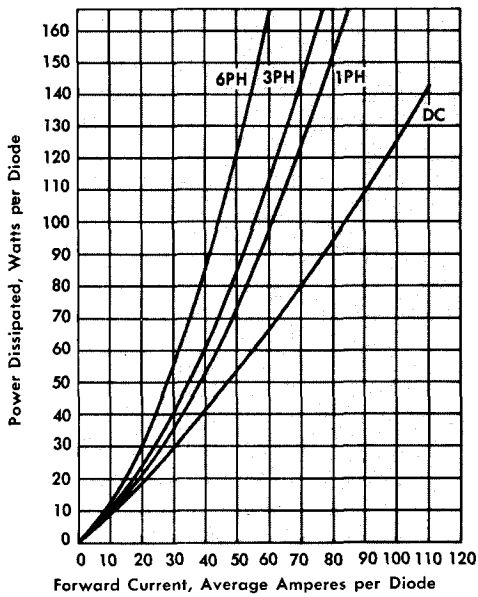


Fig. 2—Maximum power dissipation versus forward current.

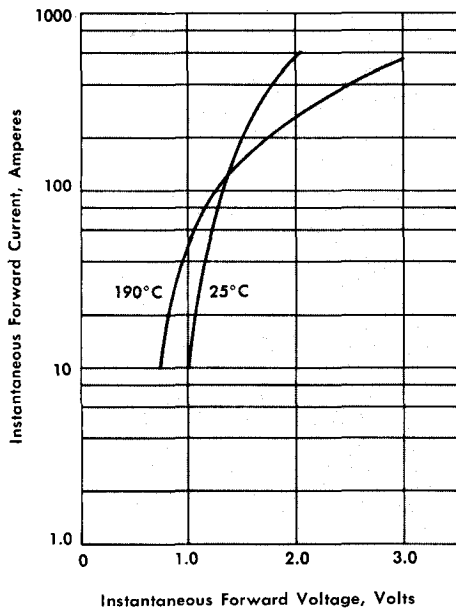


Fig. 3—Maximum forward characteristics.

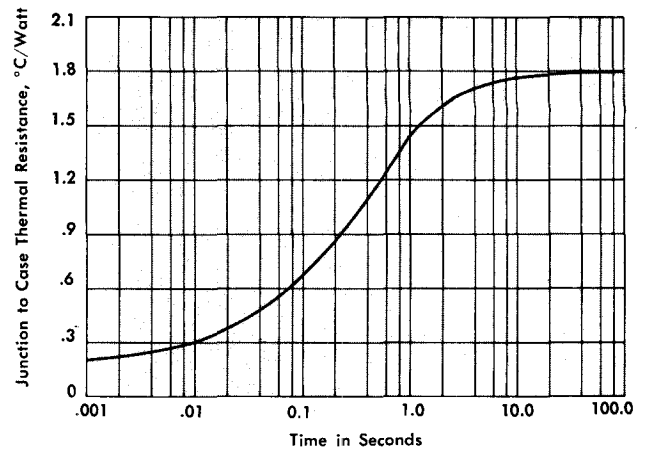


Fig. 4—Transient thermal resistance.

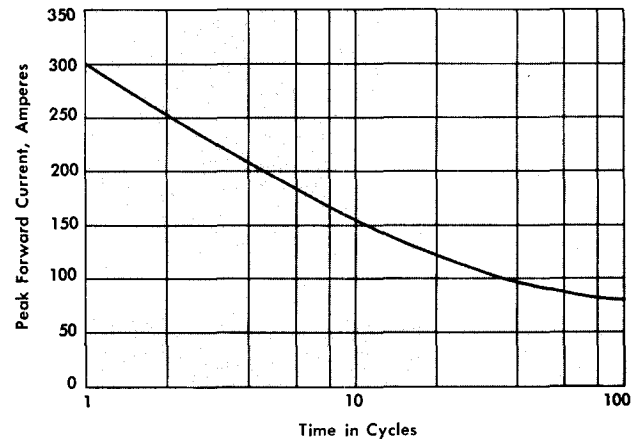


Fig. 5—Maximum surge current at rated load.

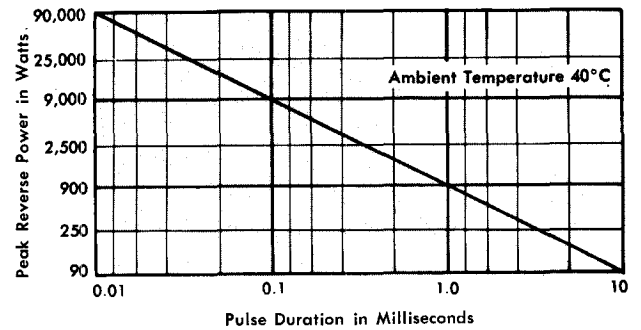


Fig. 6—Estimated reverse power surge ratings - non recurrent.

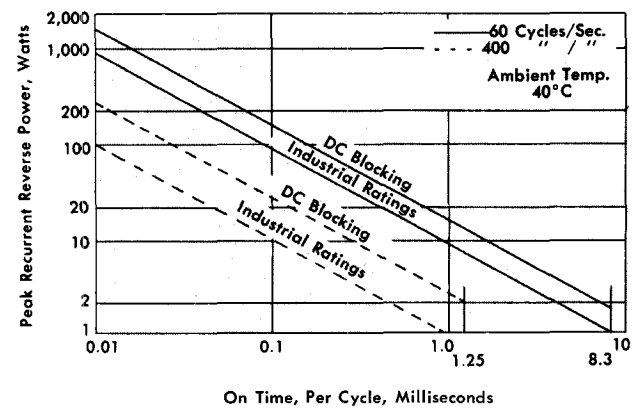


Fig. 7—Reverse power surge ratings - recurrent.