

The Data Book Project

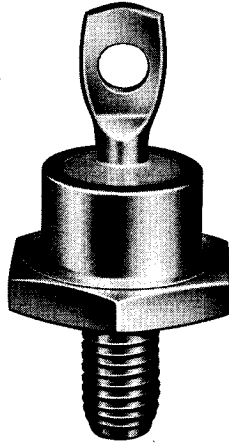
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Series 31



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 I²t (less than 8 ms) 350 Amps² - 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

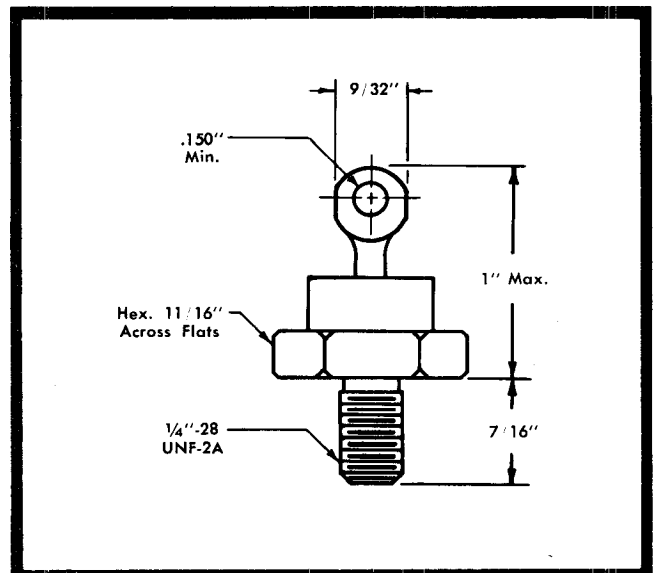
ENVIRONMENTAL SPECIFICATIONS:

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	S3150	R3150	500
1N1198	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.

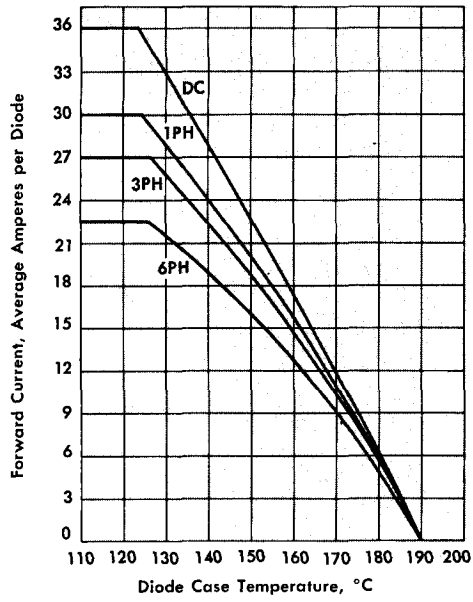


Fig. 1—Load current versus case temperature.

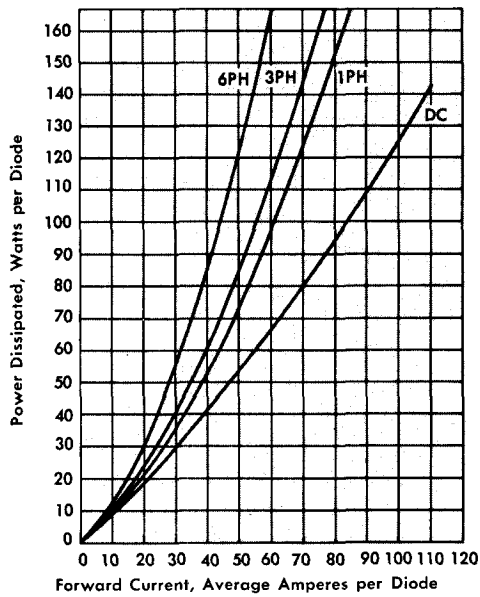


Fig. 2—Maximum power dissipation versus forward current.

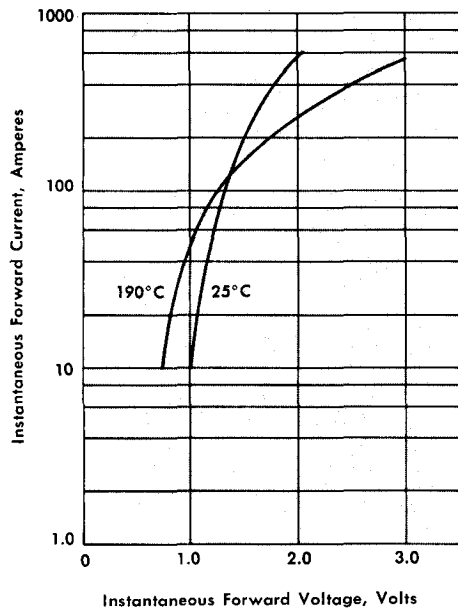


Fig. 3—Maximum forward characteristics.

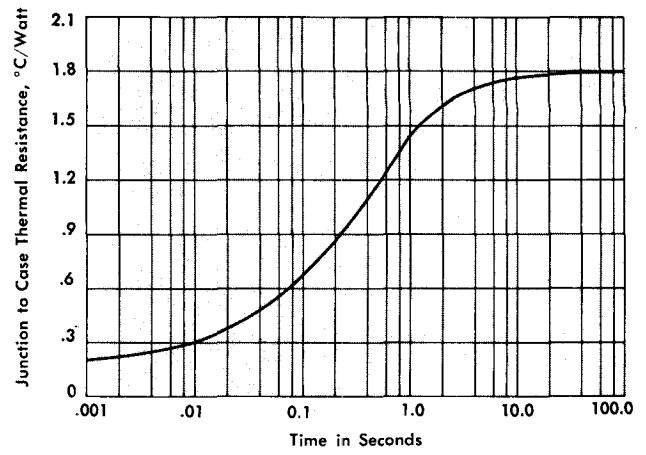


Fig. 4—Transient thermal resistance.

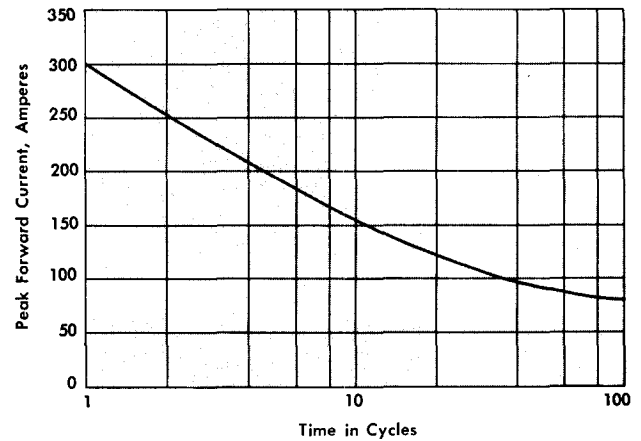


Fig. 5—Maximum surge current at rated load.

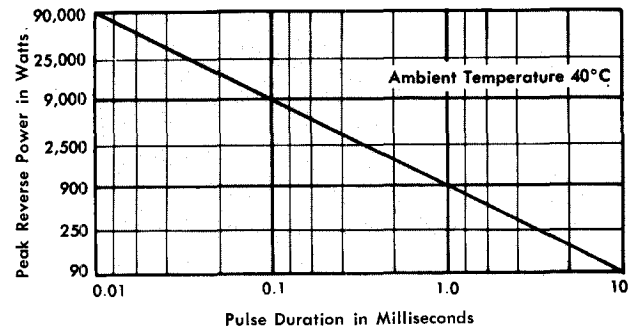


Fig. 6—Estimated reverse power surge ratings - non recurrent.

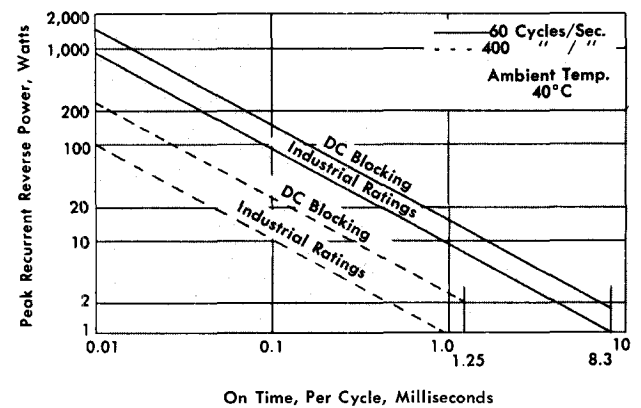


Fig. 7—Reverse power surge ratings - recurrent.