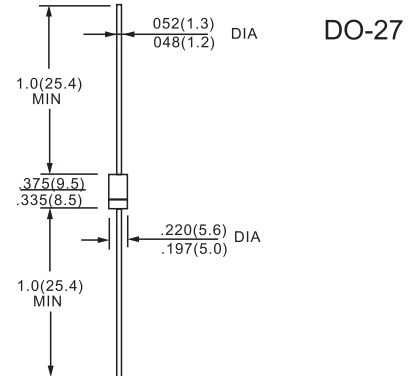


FEATURES

- 175° C T_J operation
 - High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
 - Low forward voltage drop
 - High frequency operation
 - Guard ring for enhanced ruggedness and long term
- Designed and qualified for industrial level



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
VOLTAGE RATINGS

PARAMETER	SYMBOL	80SQ030	80SQ035	80SQ040	80SQ045	UNITS
Maximum DC reverse voltage	V _R	30	35	40	45	V
Maximum working peak reverse voltage	V _{RWM}					

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum average forward current See fig. 5	I _{F(AV)}	50 % duty cycle at T _C = 119 °C, rectangular waveform	8	A
Maximum peak one cycle non-repetitive surge current See fig. 7	I _{FSM}	5 μs sine or 3 μs rect. pulse	2400	
		10 ms sine or 6 ms rect. pulse	380	
Non-repetitive avalanche energy	E _{AS}	T _J = 25 °C, I _{AS} = 1.6 A, L = 7.8 mH	10	mJ
Repetitive avalanche current	I _{AR}	Current decaying linearly to zero in 1 μs Frequency limited by, T _J maximum V _A = 1.5 x V _R typical	1.6	A

ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum forward voltage drop See fig. 1	V _{FM} (1)	T _J = 25 °C	8 A	0.53
			16 A	0.60
		T _J = 125 °C	8 A	0.44
			16 A	0.55
Maximum reverse leakage current See fig. 2	I _{RM} (1)	T _J = 25 °C	2	mA
		T _J = 125 °C	15	
Maximum junction capacitance	C _T	V _R = 5 V _{DC} , (test signal range 100 kHz to 1 MHz) 25 °C	900	pF
Typical series inductance	L _S	Measured lead to lead 5 mm from package body	10.0	nH
Maximum voltage rate of change	dV/dt	Rated V _R	10 000	V/μs

THERMAL - MECHANICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction and storage temperature range	T _J , T _{Stg}		- 55 to 175	°C
Maximum thermal resistance, junction to lead	R _{thJL}	DC operation; see fig. 4 1/8" lead length	8.0	°C/W
Typical thermal resistance, junction to air	R _{thJA}		44	
Approximate weight			1.4	g
			0.049	oz.
Marking device		Case style DO-204AR (JEDEC)	80SQ030	
			80SQ035	
			80SQ040	
			80SQ045	

RATINGS AND CHARACTERISTIC CURVES 80SQ035 THRU 80SQ045

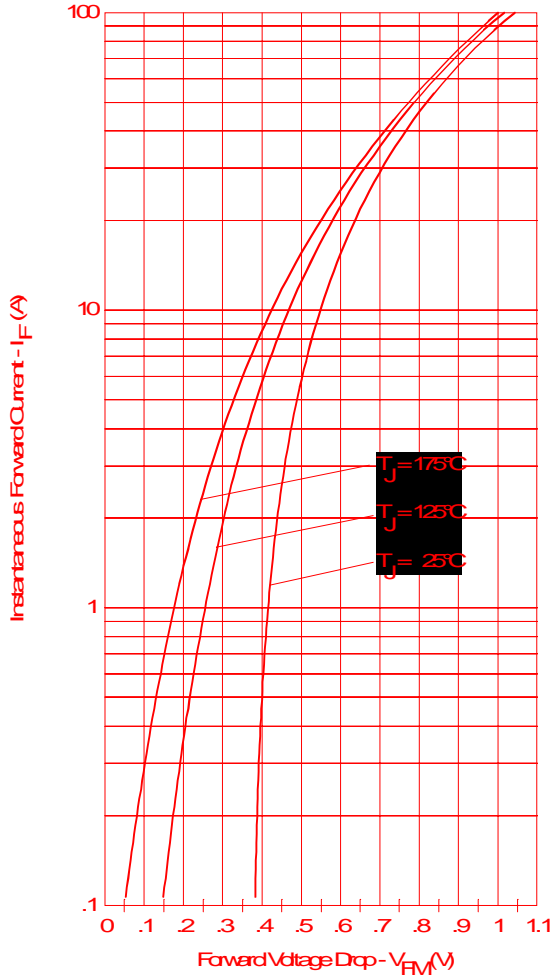


Fig. 1 - Maximum Forward Voltage Drop Characteristics

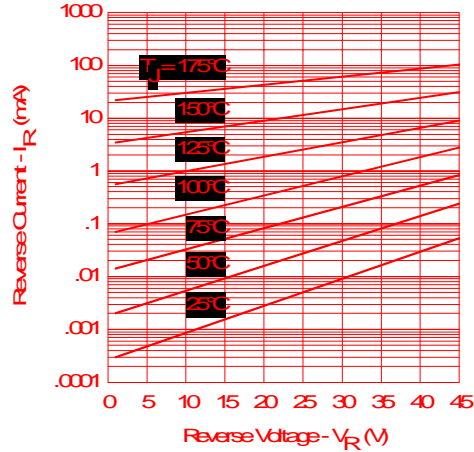


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

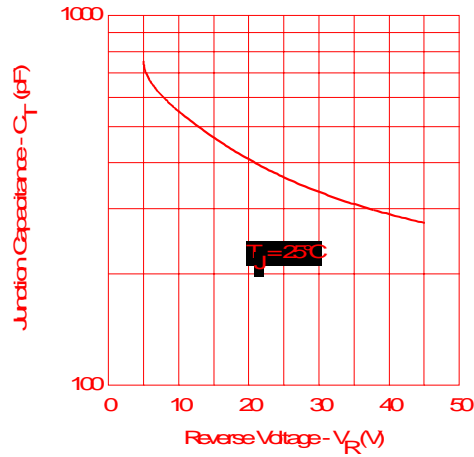


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

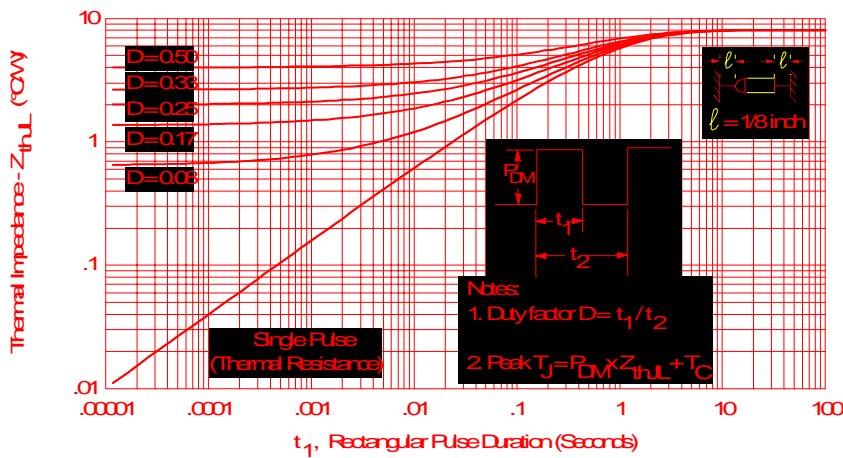


Fig. 4 - Maximum Thermal Impedance Z_{thJL} Characteristics

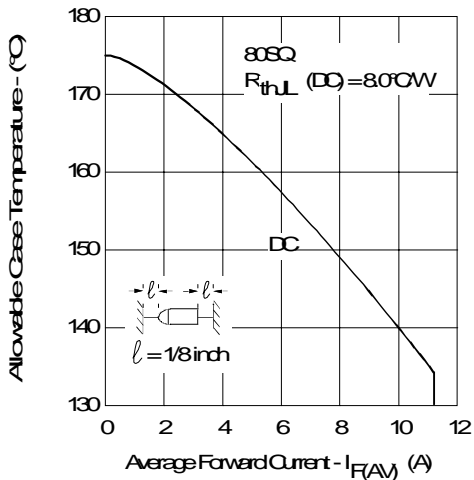


Fig. 5 - Maximum Allowable Case Temperature Vs. Average Forward Current

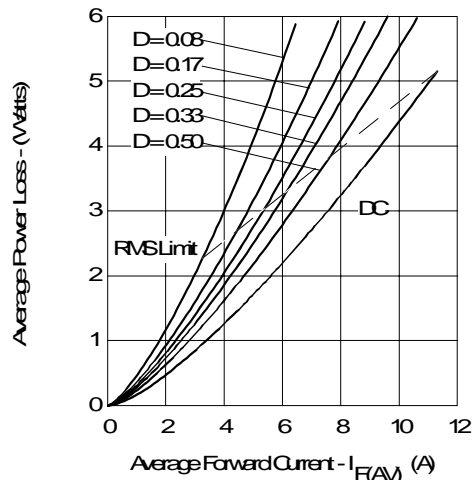


Fig. 6 - Forward Power Loss Characteristics

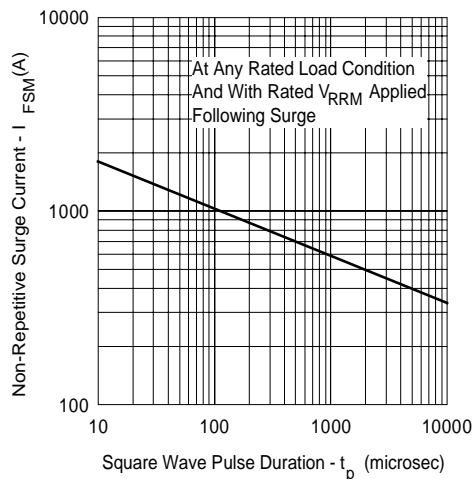


Fig. 7 - Maximum Non-Repetitive Surge Current

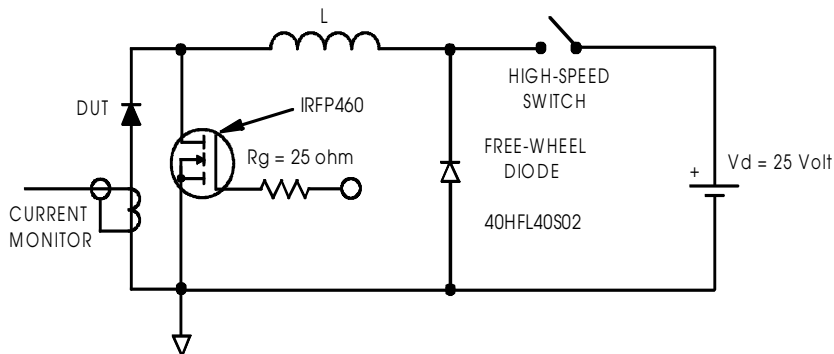


Fig. 8 - Unclamped Inductive Test Circuit