



FEATURES

- * Low forward voltage drop
- * High current capability
- * High reliability
- * High surge current capability

MECHANICAL DATA

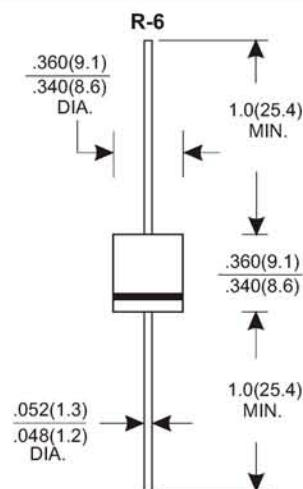
- * Case: Molded plastic
- * Epoxy: UL 94V-0 rate flame retardant
- * Lead: Axial leads, solderable per MIL-STD-202, method 208 guaranteed
- * Polarity: Color band denotes cathode end
- * Mounting position: Any
- * Weight: 1.65 grams

VOLTAGE RANGE

45 Volts

CURRENT

12.0 Amperes



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.

Single phase half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

	Symbols	12SQ045	Units
Maximum repetitive peak reverse voltage	V _{RRM}	45	Volts
Maximum RMS voltage	V _{RMS}	32	Volts
Maximum DC blocking voltage	V _{DC}	45	Volts
Maximum average forward rectified current 0.375"(9.5mm) lead length(see fig.1)	I <sub(av)< sub=""></sub(av)<>	12.0	Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated T _J)	I _{FSM}	150.0	Amps
Maximum instantaneous forward voltage at 12.0 A(Note 1)	V _F	0.55	Volts
Maximum instantaneous reverse current at rated DC blocking voltage(Note 1)	I _R	0.2	mA
		50	
Typical junction capacitance(Note 3)	C _J	400	pF
Typical thermal resistance (Note 2)	R _{θJC}	2.5	°C/W
Operating junction temperature range at reduced reverse voltage V _R < = 80%V _{RRM} V _R < = 50%V _{RRM} in DC forward model	T _J	-65 to +150 -65 to +175 -65 to +200	°C
Storage temperature range	T _{STG}	-65 to +200	°C

Notes: 1.Pulse test: 300μs pulse width,1% duty cycle

2.Thermal resistance from junction to case

3.Measured at 1MHz and reverse voltage of 4.0 volts

RATING AND CHARACTERISTIC CURVES (12SQ045)

FIG.1-FORWARD CURRENT DERATING CURVE

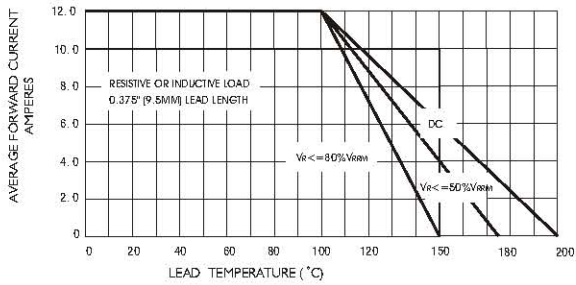


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

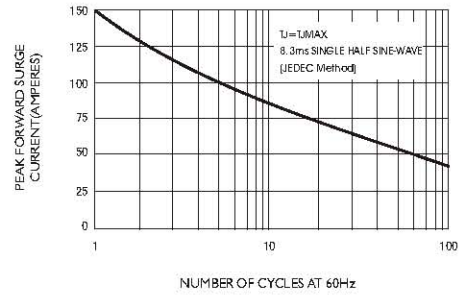


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

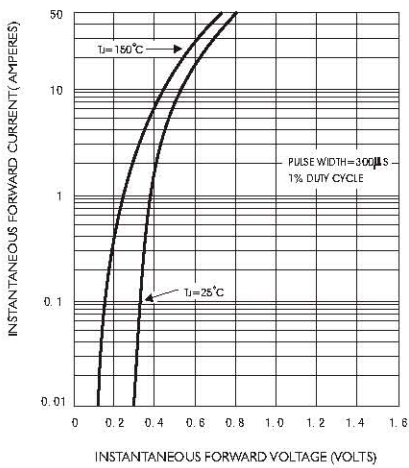


FIG.4-TYPICAL REVERSE CHARACTERISTICS

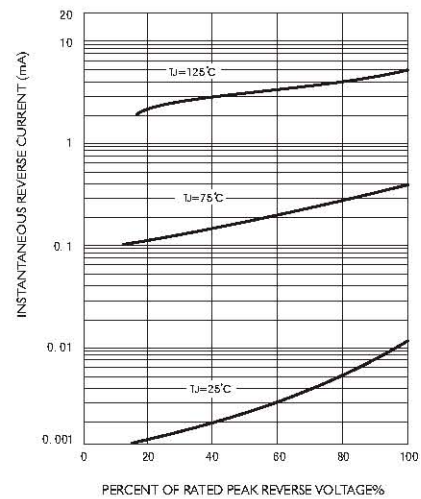


FIG.5-TYPICAL JUNCTION CAPACITANCE

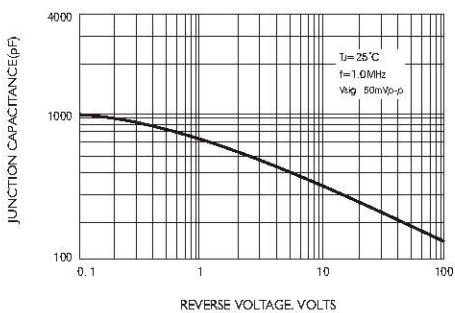
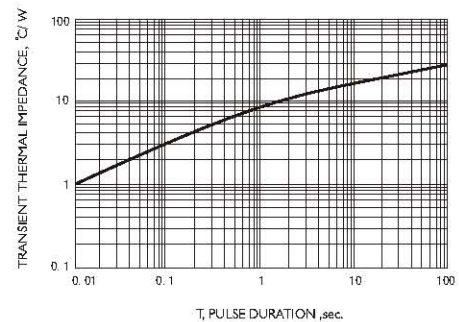


FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE



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