



### FEATURES

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

### MECHANICAL DATA

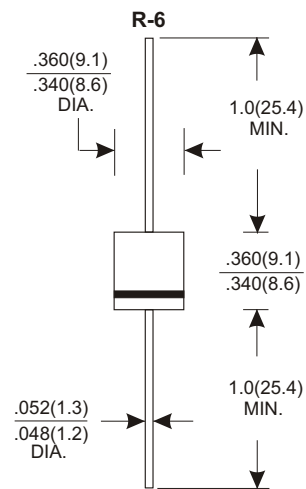
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: Axial leads, solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any
- \* Weight: 1.65 grams

### VOLTAGE RANGE

45 Volts

### CURRENT

20.0 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	20SQ045	Units
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	45	Volts
Maximum RMS voltage	V <sub>RMS</sub>	32	Volts
Maximum DC blocking voltage	V <sub>DC</sub>	45	Volts
Maximum average forward rectified current 0.375"(9.5mm) lead length(see fig.1)	I(AV)	20.0	Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated T <sub>j</sub> )	I <sub>FSM</sub>	380.0	Amps
Maximum instantaneous forward voltage at 20.0 A(Note 1)	V <sub>F</sub>	0.55	Volts
Maximum instantaneous reverse current at rated DC blocking voltage(Note 1)	I <sub>R</sub>	T <sub>a</sub> = 25°C	0.2
		T <sub>a</sub> = 100°C	50
Typical junction capacitance(Note 3)	C <sub>J</sub>	450	pF
Typical thermal resistance (Note 2)	R <sub>θJC</sub>	2.5	°C/W
Operating junction temperature range at reduced reverse voltage V <sub>R</sub> <= 80%V <sub>RRM</sub> V <sub>R</sub> <= 50%V <sub>RRM</sub> in DC forward model	T <sub>J</sub>	-65 to +150	°C
		-65 to +175	
		-65 to +200	
Storage temperature range	T <sub>STG</sub>	-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 (20SQ045)

FIG.1-FORWARD CURRENT DERATING CURVE

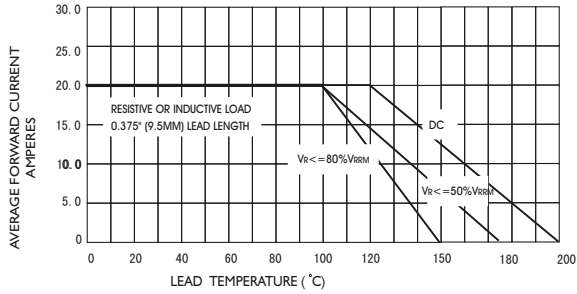


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

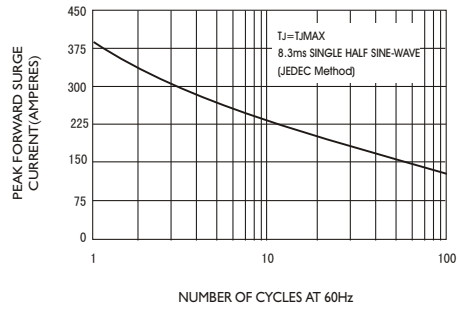


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

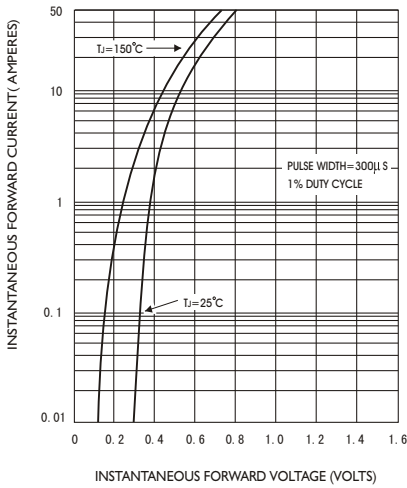


FIG.4-TYPICAL REVERSE CHARACTERISTICS

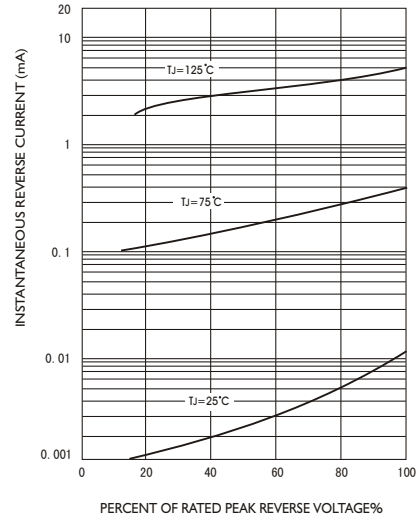


FIG.5-TYPICAL JUNCTION CAPACITANCE

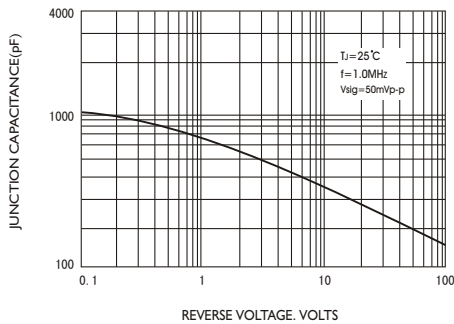
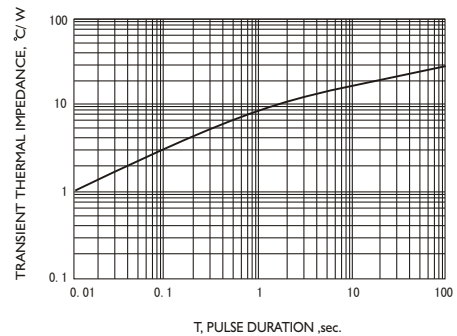


FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE



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