

## FAST RECOVERY RECTIFIER

<p><b>FEATURES</b></p> <ul style="list-style-type: none"> <li>• Low cost construction</li> <li>• Fast switching for high efficiency.</li> <li>• Low reverse leakage</li> <li>• High forward surge current capability</li> <li>• High temperature soldering guaranteed: 260°C/10 seconds/0.375" (9.5mm) lead length at 5 lbs (2,3kg) tensions</li> </ul> <p><b>MECHANICAL DATA</b></p> <ul style="list-style-type: none"> <li>• <b>Case:</b> Transfer molded plastic</li> <li>• <b>Epoxy:</b> UL94V-0 rate flame retardant</li> <li>• <b>Polarity:</b> Color band denotes cathode end</li> <li>• <b>Lead:</b> Plated axial lead ,solderable per MIL-STD-202E method 208C</li> <li>• <b>Mounting position:</b> Any</li> <li>• <b>Weight:</b> 0.042 ounce, 1.19 gram</li> </ul>	<p style="text-align: center;">VOLTAGE RANGE      50 to1000 Volts CURRENT                3.0 Amperes</p> <div style="text-align: right;">DO-27</div> <p style="text-align: center;">Dimensions in inches and (millimeters)</p>								
<p><b>MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS</b></p> <p>Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load derate current by 20%.</p>									
	SYMBOLS	FR 301	FR 302	FR 303	FR 304	FR 305	FR 306	FR 307	UNITS
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current 0.375" (9.5mm) lead length at $T_A=75^\circ C$	$I_{(AV)}$	3.0							Amps
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	200							Amps
Maximum Instantaneous Forward Voltage at 3.0A	$V_F$	1.3							Volts
Maximum DC Reverse Current at rated DC blocking voltage	$T_A=25^\circ C$	10							$\mu$ Amps
	$T_A=100^\circ C$	500							
Maximum Reverse Recovery Time(NOTE3) $T_j=25^\circ C$	$t_{rr}$	150				250	500		nS
Typical Junction Capacitance(NOTE1)	$C_J$	60							pF
Typical Thermal Resistance(NOTE2)	$R_{\theta JA}$	20							$^\circ C/W$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150							$^\circ C$
<p><b>NOTES:</b></p> <p>1. Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts. 2. Thermal Resistance from Junction to Ambient at 0.375" (9.5mm) lead length, P.C. board mounted. 3. Reverse Recovery Test Conditions: <math>I_F=0.5A, I_R=1.0A, I_{rr}=0.25A</math>.</p>									

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

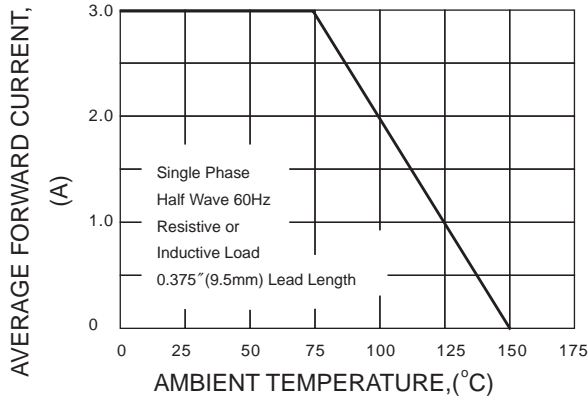


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

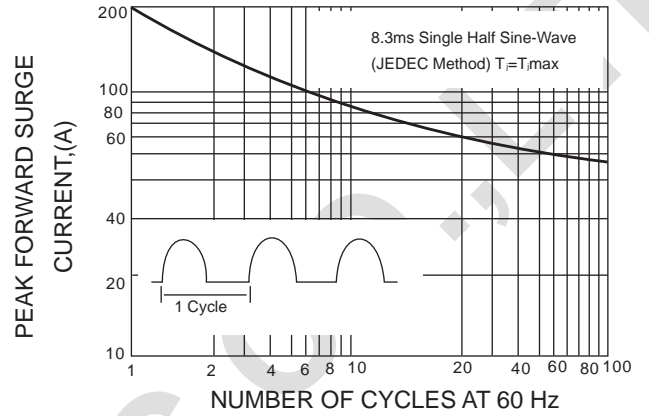


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

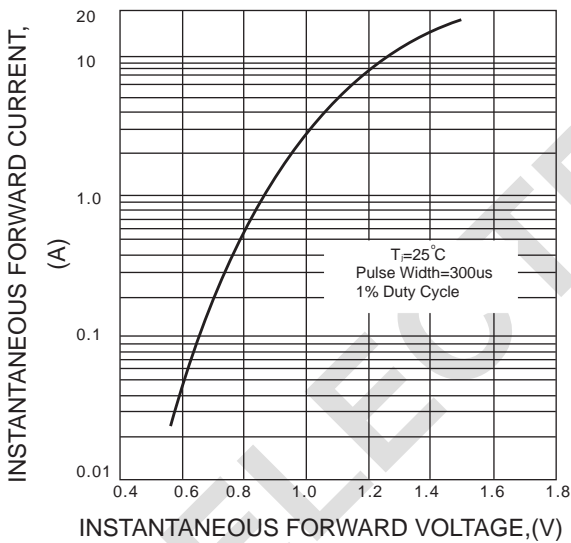


FIG.4-TYPICAL REVERSE CHARACTERISTICS

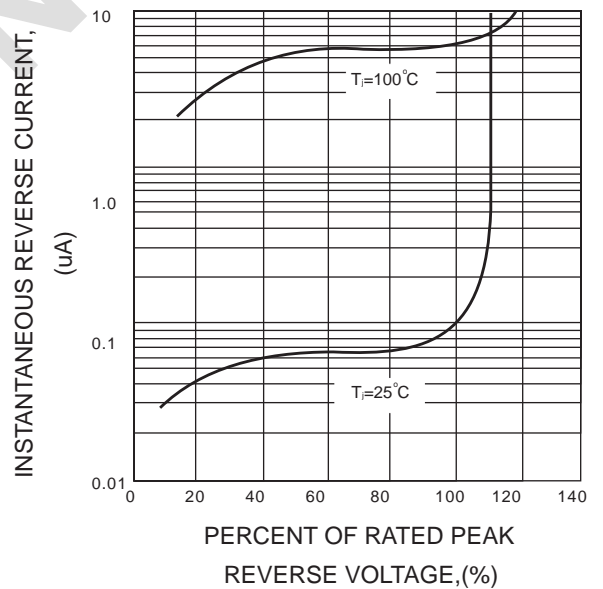


FIG.5-TYPICAL JUNCTION CAPACITANCE

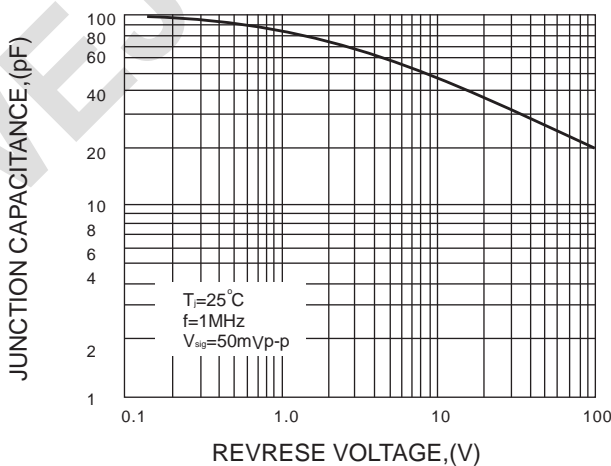


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

