



**FRONTIER  
ELECTRONICS CO., LTD.**

**SF50-005  
THRU  
SF50-06**

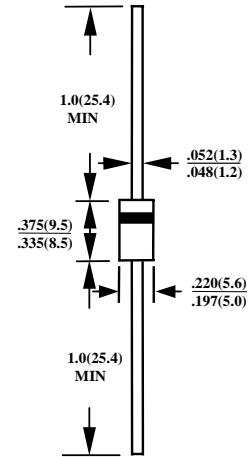
**5A SUPER FAST RECOVERY RECTIFIER**

**FEATURES**

- LOW POWER LOSS, HIGH EFFICIENCY
- LOW FORWARD VOLTAGE
- HIGH CURRENT CAPABILITY
- HIGH SPEED SWITCHING
- HIGH RELIABILITY
- HIGH SURGE CAPABILITY

**MECHANICAL DATA**

- CASE : MOLDED PLASTIC
- EPOXY : UL 94V-0 MOLDING COMPOUND
- LEADS : MIL-STD-202E, METHOD 208C GUARANTEED
- MOUNTING POSITION : ANY
- WEIGHT : 1.2 GRAMS



CASE : DO201AD  
DIMENSIONS IN INCHES AND (MILLIMETERS)

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**  
RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED  
SINGLE PHASE, HALF WAVE, 60 HZ, RESISTIVE OR INDUCTIVE LOAD.  
FOR CAPACITIVE LOAD, DERATE CURRENT BY 20%

RATINGS	SYMBOL	SF50 -005	SF50 -01	SF50 -015	SF50 -02	SF50 -03	SF50 -04	SF50 -05	SF50 -06	UNITS
MAXIMUM RECURRENT PEAK REVERSE VOLTAGE	$V_{RRM}$	50	100	150	200	300	400	500	600	V
MAXIMUM RMS VOLTAGE	$V_{RMS}$	35	70	105	140	210	280	350	420	V
MAXIMUM DC BLOCKING VOLTAGE	$V_{DC}$	50	100	150	200	300	400	500	600	V
MAXIMUM AVERAGE FORWARD RECTIFIED CURRENT .375" (9.5mm) LEAD LENGTH AT $T_A=55^\circ\text{C}$	$I_O$	5.0								A
PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD	$I_{FSM}$	150								A
TYPICAL JUNCTION CAPACITANCE (NOTE 1)	$C_j$	50				30				PF
TYPICAL THERMAL RESISTANCE (NOTE 2)	$R_{\theta ja}$	30								$^\circ\text{C}/\text{W}$
STORAGE TEMPERATURE RANGE	$T_{STG}$	- 55 TO + 150								$^\circ\text{C}$
OPERATING TEMPERATURE RANGE	$T_{OP}$	- 55 TO + 150								$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS ( $A_T T_A = 25^\circ\text{C}$  UNLESS OTHERWISE NOTED)**

CHARACTERISTICS	SYMBOL	SF50 -005	SF50 -01	SF50 -015	SF50 -02	SF50 -03	SF50 -04	SF50 -05	SF50 -06	UNITS
MAXIMUM FORWARD VOLTAGE AT $I_O$ DC	$V_F$	0.95			1.25		1.85			V
MAXIMUM REVERSE CURRENT AT 25°C	$I_R$	10								$\mu\text{A}$
MAXIMUM REVERSE CURRENT AT 100°C	$I_R$	100								$\mu\text{A}$
MAXIMUM REVERSE RECOVERY TIME (NOTE 3)	$T_{RR}$	35								nS

- NOTE : 1. MEASURED AT 1 MHZ AND APPLIED REVERSE VOLTAGE OF 4.0 VOLTS  
2. BOTH LEADS ATTACHED TO HEATSINK 20x20x1t(mm) COPPER PLATE AT LEAD LENGTH 5mm  
3. REVERSE RECOVERY TEST CONDITIONS:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25$

# RATINGS AND CHARACTERISTIC CURVE SF50-005 THRU SF50-06

FIG. 1-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

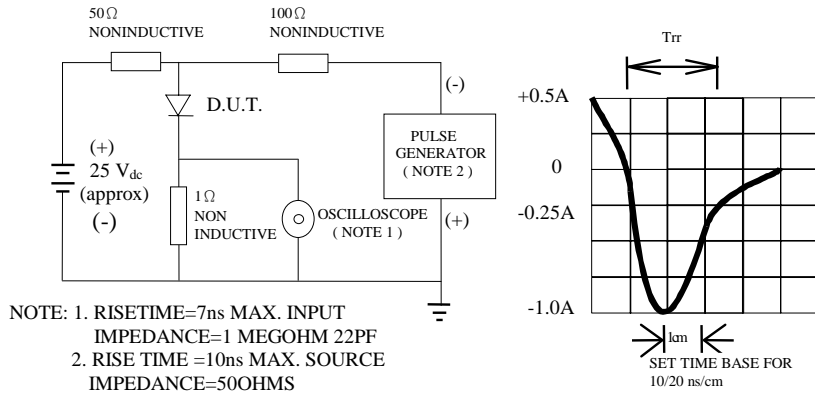


FIG. 2-TYPICAL FORWARD CURRENT DERATING CURVE

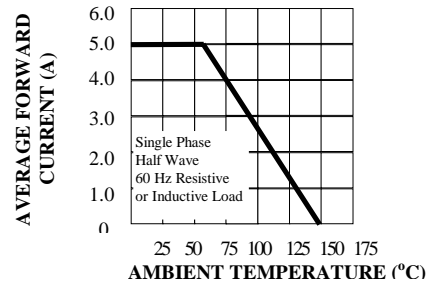


FIG. 3-TYPICAL REVERSE CHARACTERISTICS

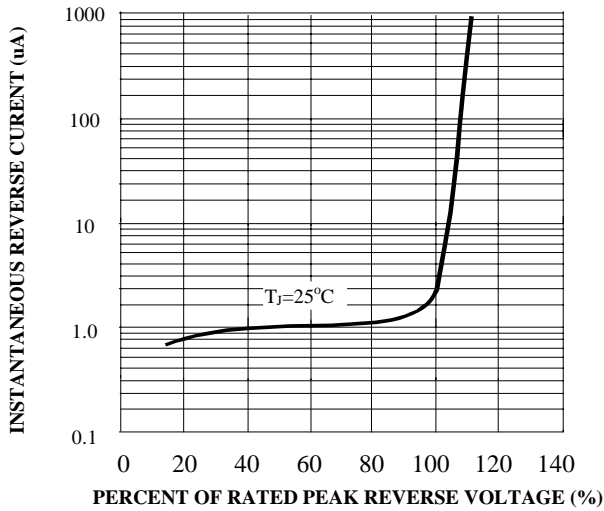


FIG. 4-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

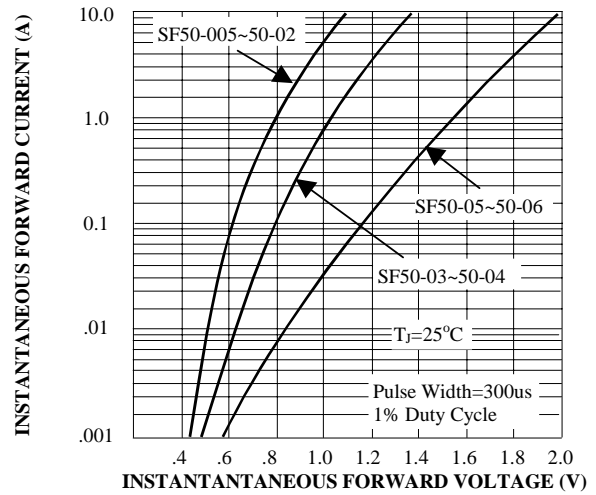


FIG. 5-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

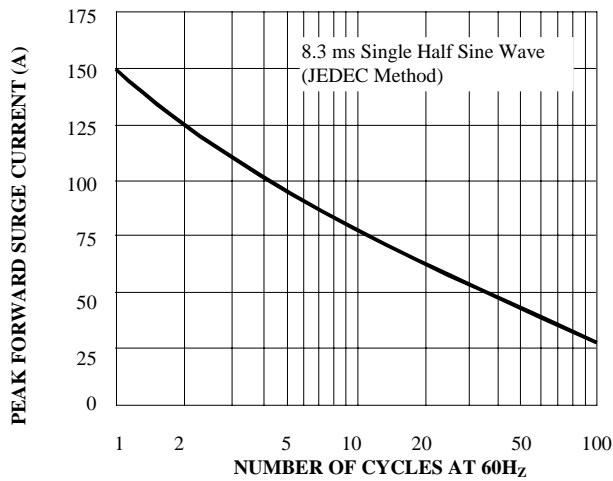


FIG. 6-TYPICAL JUNCTION CAPACITANCE

