



# Frontier Electronics Corp.

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## 1A GLASS PASSIVATED SUPER FAST RECOVERY RECTIFIER

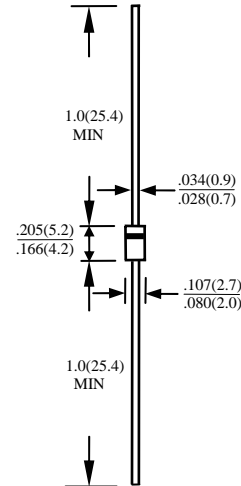
### SF10-005G-LFR THRU SF10-06G-LFR

#### FEATURES

- LOW FORWARD VOLTAGE
- HIGH SURGE CAPABILITY
- SUPER FAST SWITCHING SPEED
- GOOD FOR SWITCHING MODE CIRCUIT
- GLASS PASSIVATED CHIP JUNCTION
- ROHS

#### MECHANICAL DATA

- CASE: MOLDED PLASTIC, DO41, DIMENSIONS IN INCHES AND (MILLIMETERS)
- EPOXY: UL 94V-0 FLAME RETARDANT PLASTIC CASE
- LEADS: AXIAL LEADS, SOLDERABLE PER MIL-STD-202, METHOD 208
- MOUNTING POSITION: ANY
- WEIGHT: 0.34 GRAMS



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	SF10 -005G -LFR	SF10 -01G -LFR	SF10 -015G -LFR	SF10 -02G -LFR	SF10 -03G -LFR	SF10 -04G -LFR	SF10 -05G -LFR	SF10 -06G -LFR	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 0.375"(9.5mm) LEAD LENGTH AT $T_A=55^\circ\text{C}$	$I_O$	1.0								A
PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD	$I_{FSM}$	30								A
TYPICAL JUNCTION CAPACITANCE (NOTE 1)	$C_J$	15				10				PF
TYPICAL THERMAL RESISTANCE (NOTE 2)	$R_{\theta jc}$	50								$^\circ\text{C/W}$
STORAGE TEMPERATURE RANGE	$T_{STG}$	- 55 TO + 150								$^\circ\text{C}$
OPERATING TEMPERATURE RANGE	$T_{OP}$	- 55 TO + 150								$^\circ\text{C}$

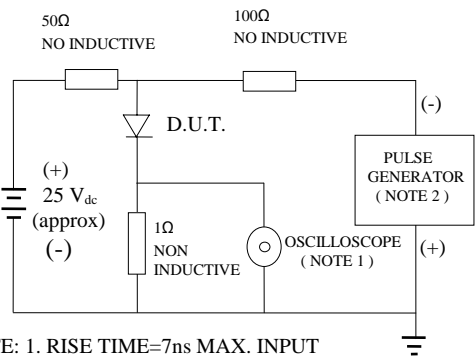
#### ELECTRICAL CHARACTERISTICS ( $A_T T_A=25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

CHARACTERISTICS	SYMBOL	SF10 -005G -LFR	SF10 -01G -LFR	SF10 -015G -LFR	SF10 -02G -LFR	SF10 -03G -LFR	SF10 -04G -LFR	SF10 -05G -LFR	SF10 -06G -LFR	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

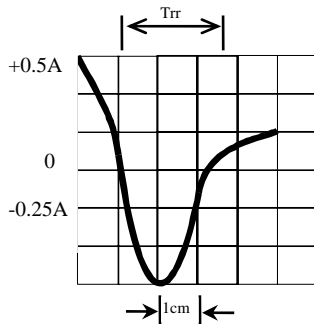
- NOTE : 1. MEASURED AT 1 MHZ AND APPLIED REVERSE VOLTAGE OF 4.0 VOLTS  
 2. BOTH LEADS ATTACHED TO HEAT SINK 20x20x1t(mm) COPPER PLATE AT LEAD LENGTH 5mm  
 3. REVERSE RECOVERY TEST CONDITIONS:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$

# RATINGS AND CHARACTERISTIC CURVE SF10-005G-LFR THRU SF10-06G-LFR

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



NOTE: 1. RISE TIME=7ns MAX. INPUT IMPEDANCE=1 MOhms 22PF  
2. RISE TIME =10ns MAX. SOURCE IMPEDANCE=50 OHMS



SET TIME BASE FOR 10/20 ns/cm

FIG. 2-TYPICAL FORWARD CURRENT DERATING CURVE

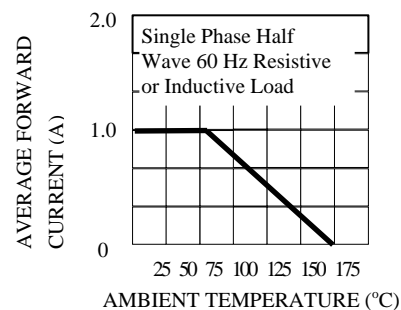


FIG. 3-TYPICAL REVERSE CHARACTERISTICS

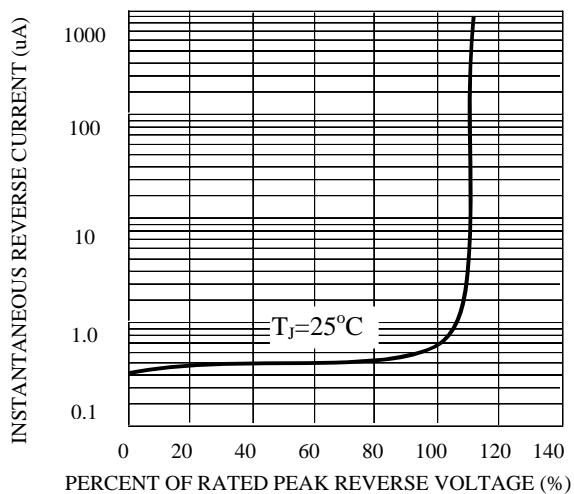


FIG. 4-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

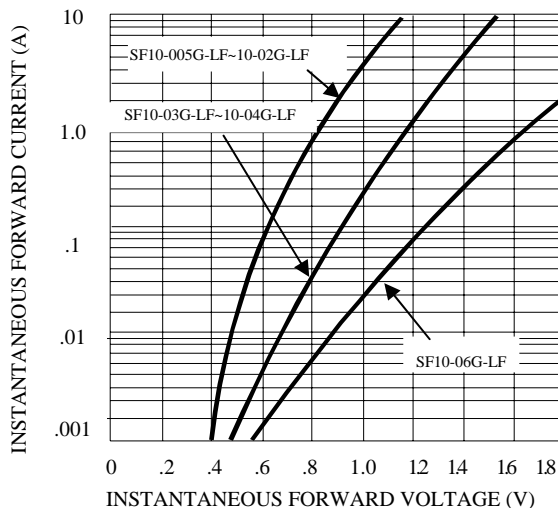


FIG. 5-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

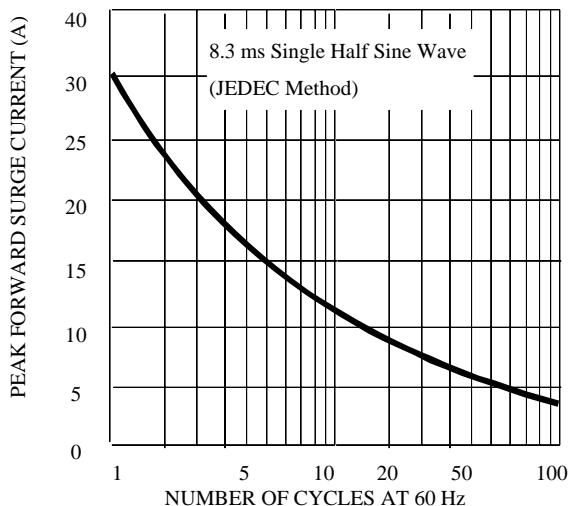


FIG. 6-TYPICAL JUNCTION CAPACITANCE

