



# Frontier Electronics Corp.

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## 1A SUPER FAST RECOVERY RECTIFIER

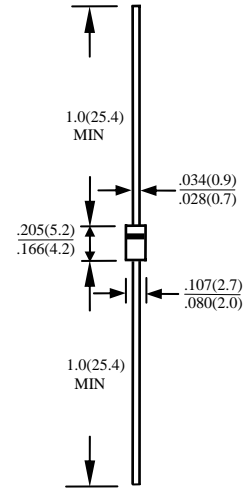
### SF10-005 THRU SF10-06

#### FEATURES

- LOW FORWARD VOLTAGE
- HIGH SURGE CAPABILITY
- SUPER FAST SWITCHING SPEED
- GOOD FOR SWITCHING MODE CIRCUIT

#### 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	SF10-005	SF10-01	SF10-015	SF10-02	SF10-03	SF10-04	SF10-05	SF10-06	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 TA=55°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)	$R_{\theta ja}$	50								°C/W
STORAGE TEMPERATURE RANGE	$T_{STG}$	- 55 TO + 150								°C
OPERATING TEMPERATURE RANGE	$T_{OP}$	- 55 TO + 150								°C

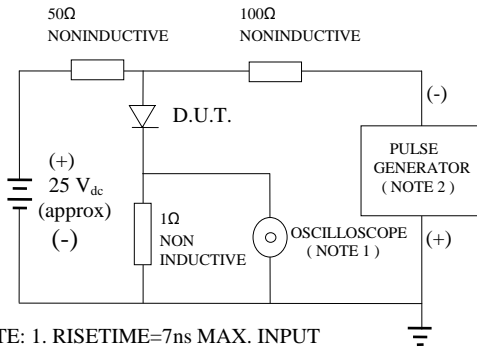
#### ELECTRICAL CHARACTERISTICS (A<sub>T</sub> T<sub>A</sub> =25°C UNLESS OTHERWISE NOTED)

CHARACTERISTICS	SYMBOL	SF10-005	SF10-01	SF10-015	SF10-02	SF10-03	SF10-04	SF10-05	SF10-06	UNITS
MAXIMUM FORWARD VOLTAGE AT I <sub>O</sub> DC	$V_F$	0.95			1.25		1.85			V
MAXIMUM REVERSE CURRENT AT 25°C	$I_R$	10								μA
MAXIMUM REVERSE CURRENT AT 100°C	$I_R$	100								μA
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 20×20×1t(mm) COPPER PLATE AT LEAD LENGTH 5mm
  3. REVERSE RECOVERY TEST CONDITIONS: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

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

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



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

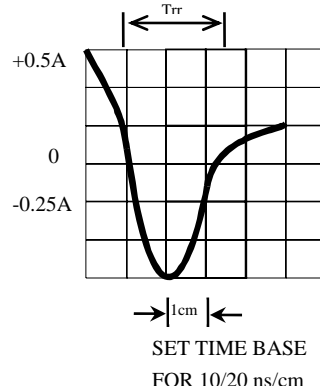


FIG. 2-TYPICAL FORWARD CURRENT DERATING CURVE

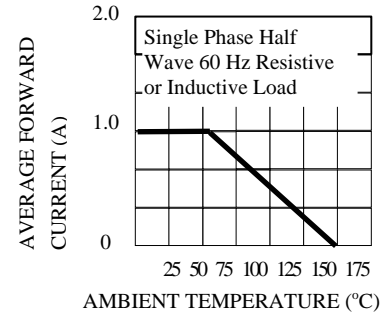


FIG. 3-TYPICAL REVERSE CHARACTERISTICS

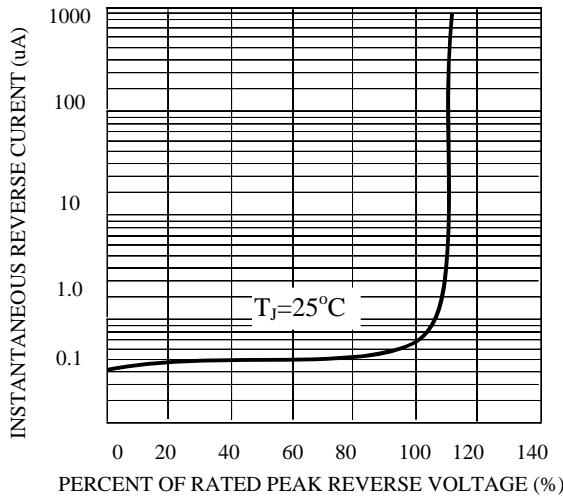


FIG. 4-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

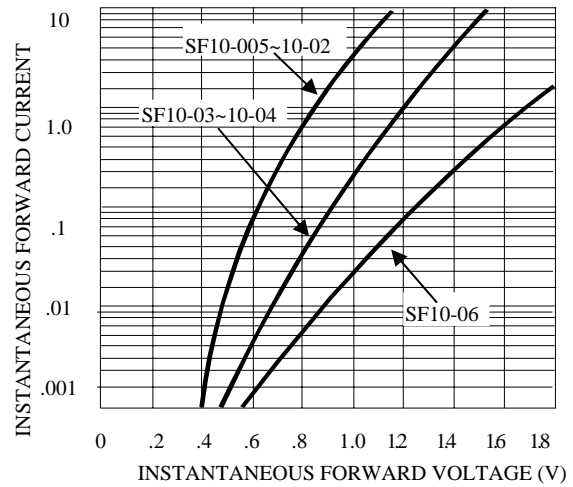


FIG. 5-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

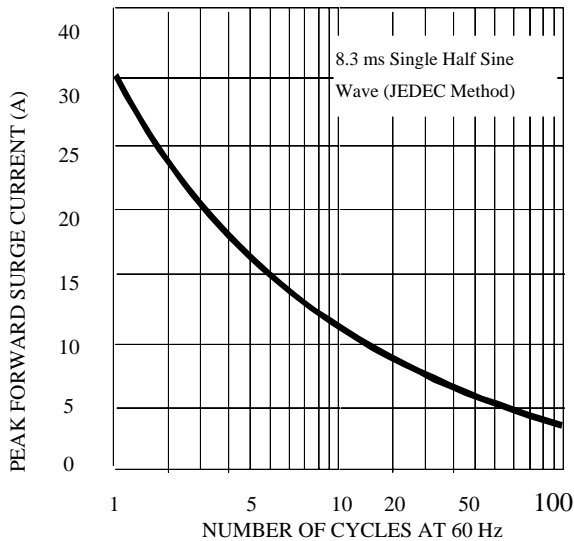


FIG. 6-TYPICAL JUNCTION CAPACITANCE

