



# Frontier Electronics Corp.

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## 1A FAST RECOVERY PLASTIC RECTIFIER

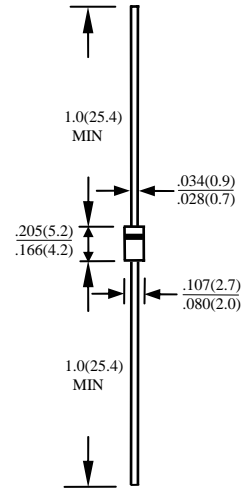
### FR10-005 THRU FR10-10

#### FEATURES

- FAST RECOVERY TIMES
- UL 94V0 FLAME RETARDANT EPOXY MOLDING COMPOUND
- DIFFUSED JUNCTION
- LOW COST
- HIGH SURGE CURRENT CAPABILITY

#### MECHANICAL DATA

- CASE: TRANSFER MOLDED, DO41, DIMENSIONS IN INCHES AND (MILLIMETERS)
- LEADS: SOLDERABLE PER MIL-STD-202, METHOD 208
- POLARITY: CATHODE INDICATED BY COLOR BAND
- 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	FR10-005	FR10-01	FR10-02	FR10-04	FR10-06	FR10-08	FR10-10	UNITS
MAXIMUM RECURRENT PEAK REVERSE VOLTAGE	$V_{RRM}$	50	100	200	400	600	800	1000	V
MAXIMUM RMS VOLTAGE	$V_{RMS}$	35	70	140	280	420	560	700	V
MAXIMUM DC BLOCKING VOLTAGE	$V_{DC}$	50	100	200	400	600	800	1000	V
MAXIMUM AVERAGE FORWARD RECTIFIED CURRENT 0.375"(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							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

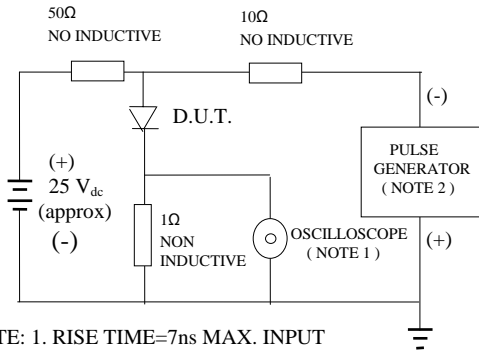
#### ELECTRICAL CHARACTERISTICS (A<sub>T</sub> T<sub>A</sub> =25°C UNLESS OTHERWISE NOTED)

CHARACTERISTICS	SYMBOL	FR10-005	FR10-01	FR10-02	FR10-04	FR10-06	FR10-08	FR10-10	UNITS
MAXIMUM FORWARD VOLTAGE AT I <sub>O</sub> DC	$V_F$	1.3							V
MAXIMUM REVERSE CURRENT AT 25°C	$I_R$	5							μA
MAXIMUM REVERSE CURRENT AT 100°C	$I_R$	50							μA
MAXIMUM REVERSE RECOVERY TIME (NOTE 3)	$T_{RR}$	150			250		500		nS

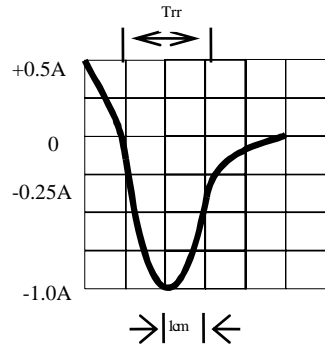
- NOTE: 1. MEASURED AT 1 MHZ AND APPLIED REVERSE VOLTAGE OF 4.0 VOLTS  
 2. BOTH LEADS ATTACHED TO HEAT SINK 20x20x1t(mm) COPPER PLATE AT LEAD LENGTH 5mm  
 3. REVERSE RECOVERY TEST CONDITIONS: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

# RATINGS AND CHARACTERISTIC CURVE FR10-005 THRU FR10-10

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-MAXIMUM CURRENT DERATING CURVE

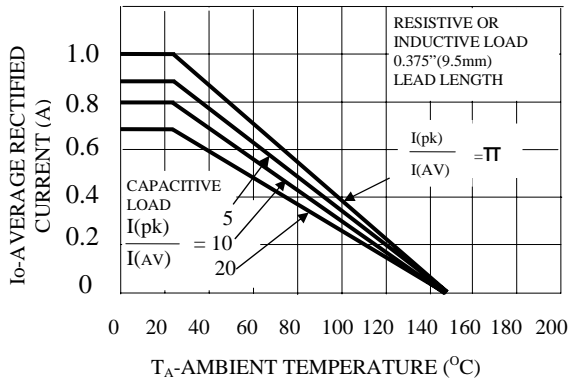


FIG. 3-TYPICAL JUNCTION CAPACITANCE

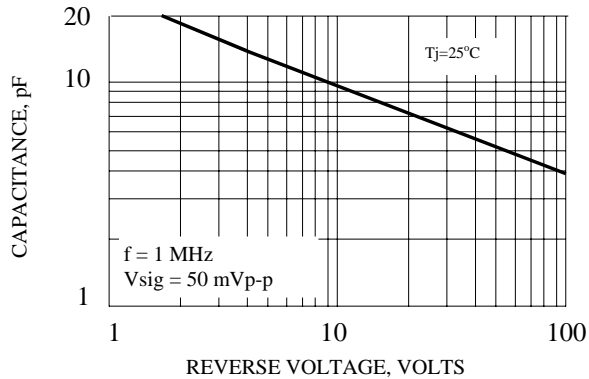


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

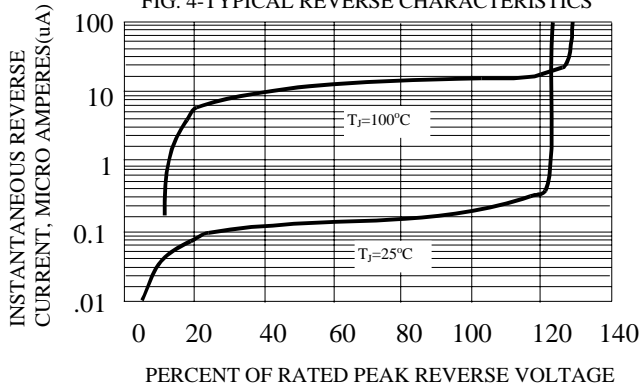


Fig. 5-MAXIMUM FORWARD SURGE NUMBER OF CYCLES

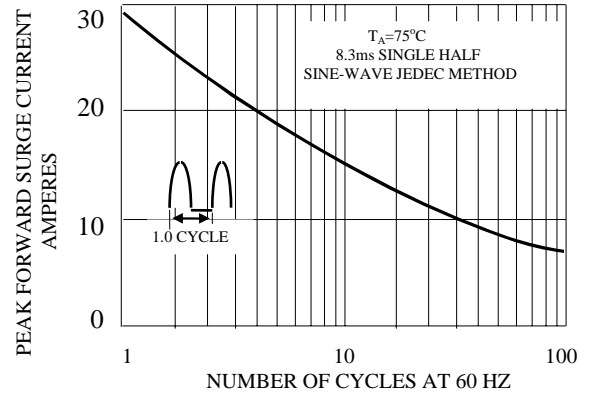


FIG. 6-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

