



# Frontier Electronics Corp.

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## 1A SURFACE MOUNT FAST RECOVERY RECTIFIERS

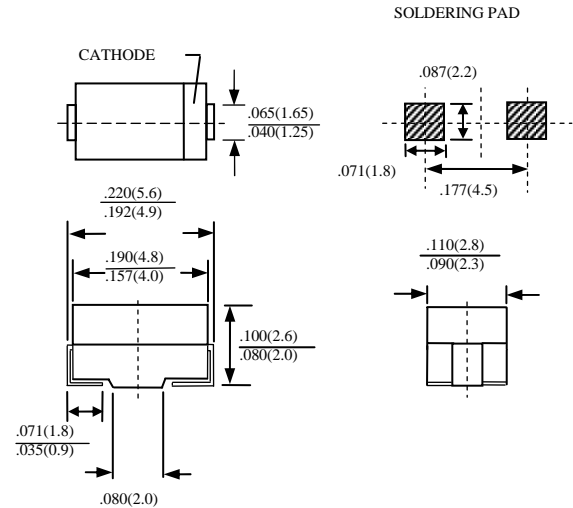
### RS1A-LFR THRU RS1M-LFR

#### FEATURES

- FOR SURFACE MOUNTED APPLICATIONS
- LOW PROFILE PACKAGE
- BUILT-IN STRAIN RELIEF
- EASY PICK AND PLACE
- PLASTIC MATERIAL USED CARRIES UNDERWRITERS LABORATORY CLASSIFICATION 94 V-0
- FAST SWITCHING
- GLASS PASSIVATED CHIP JUNCTION
- HIGH TEMPERATURE SOLDERING: 250°/10 SECONDS AT TERMINALS
- ROHS

#### MECHANICAL DATA

- CASE: MOLDED PLASTIC, DO-214AC (SMA)
- DIMENSIONS IN INCHES AND (MILLIMETERS)
- TERMINALS: SOLDER PLATED
- POLARITY: INDICATED BY CATHODE BAND
- WEIGHT: 0.064 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	RS1A-LF R	RS1B-LF R	RS1D-LF R	RS1G-LF R	RS1J-LFR	RS1K-LF R	RS1M-LF R	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 AT $T_L=90^\circ\text{C}$	$I_O$	1.0							A
MAXIMUM OVERLOAD SURGE 8.3ms SINGLE HALF SINE-WAVE	$I_{FSM}$	30							A
TYPICAL JUNCTION CAPACITANCE (NOTE 1)	$C_j$	15							PF
TYPICAL THERMAL RESISTANCE (NOTE 2)	$\theta_{jL}$	30							°C/W
STORAGE TEMPERATURE RANGE	$T_{STG}$	-55 TO + 150							°C
OPERATING TEMPERATURE RANGE	$T_{OP}$	-55 TO + 150							°C

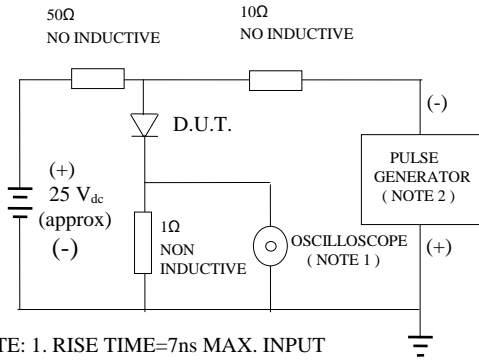
#### ELECTRICAL CHARACTERISTICS ( $A_T T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

CHARACTERISTICS	SYMBOL	RS1A-LF R	RS1B-LF R	RS1D-LF R	RS1G-LF R	RS1J-LFR	RS1K-LF R	RS1M-LF R	UNITS
MAXIMUM FORWARD VOLTAGE AT 1.0A AND 25°C	$V_F$	1.3							V
MAXIMUM REVERSE CURRENT AT 25°C	$I_R$	5							$\mu\text{A}$
MAXIMUM REVERSE RECOVERY TIME (NOTE 3)	$T_{RR}$	150				250	500		nS
MARKING		RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M	

- NOTE: 1. MEASURED AT 1.0 MHZ AND APPLIED REVERSE VOLTAGE OF 4.0 V  
2. THERMAL RESISTANCE FROM JUNCTION TO TERMINAL  $5.0\text{mm}^2$  (.013 mm THICK) LAND AREAS  
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 RS1A-LFR THRU RS1M-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

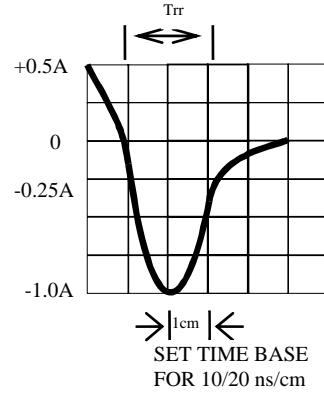


Fig. 2-MAXIMUM CURRENT DERATING CURVE

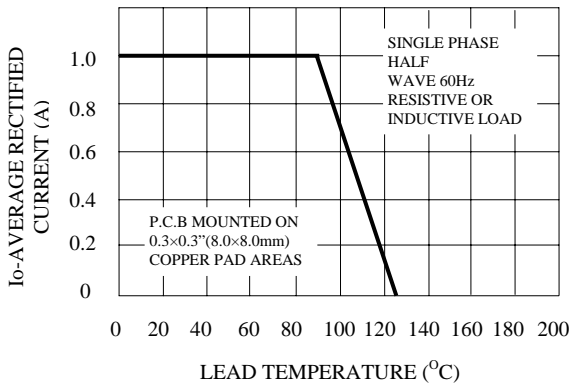


FIG. 3-TYPICAL JUNCTION CAPACITANCE

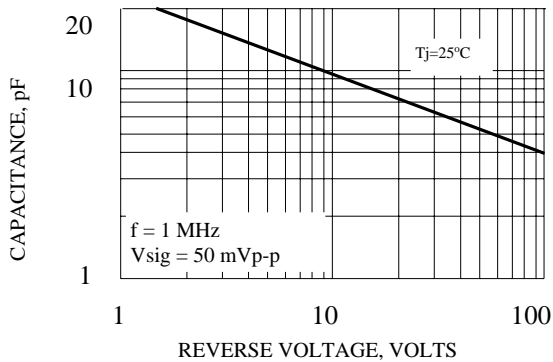


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

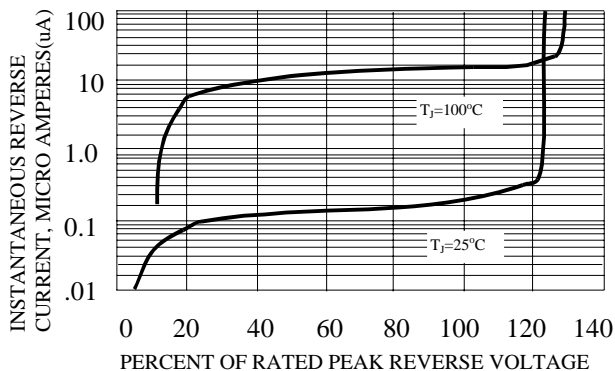


Fig. 5-MAXIMUM FORWARD SURGE CURRENT

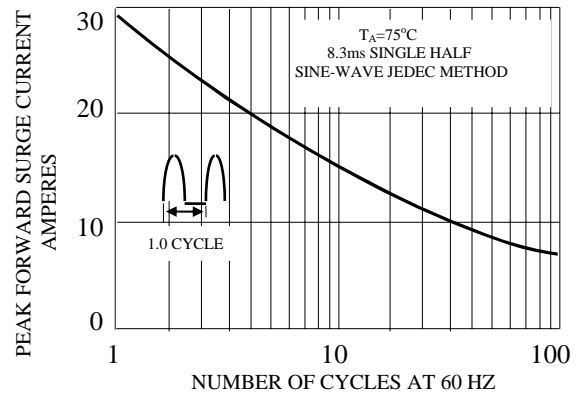


FIG. 6-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

