

**SURFACE MOUNT
FAST RECOVERY RECTIFIER**
**REVERSE VOLTAGE – 1000 Volts
FORWARD CURRENT – 2.0Amperes**
FEATURES

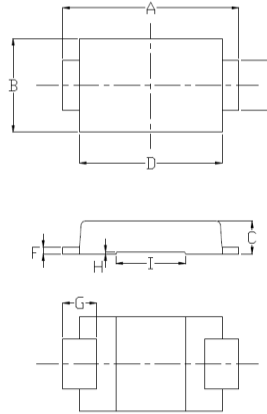
- Fast switching for high efficiency
- Glass passivated chip
- Low forward voltage drop and high current capability
- Low reverse leakage current
- Qualification is according to AEC-Q101 Rev_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

APPLICATION

- Free wheeling, clamping, snubbing, demagnetization in power supplies

MECHANICAL DATA

- Package: JEDEC DO-221AC
- Package Material: "Green" Molding compound, UL flammability classification 94V-0, "Halogen-free".
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish)
- Lead Free Finish, RoHS compliant
- Marking: FRS2MD
- Weight: 0.035 grams (Approximate)

F3-D


F3-D			
DIM	MIN	TYP	MAX
A	4.80	5.20	5.60
B	2.25	2.80	2.95
C	0.90	1.00	1.10
D	3.95	4.20	4.60
E	1.25	1.50	1.65
F	0.15	0.20	0.40
G	0.75	1.00	1.50
H	0.025	0.05	0.075
I	1.90	2.05	2.20
All dimension in millimeter			

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	1000	V
Maximum DC blocking voltage	V_{DC}	1000	V
Maximum Average rectified forward current	$I_{(AV)}$	2.0	A
	@ $T_C = 95^\circ\text{C}$		
Peak forward surge 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	60	A
Operating and Storage temperature range	T_J, T_{STG}	-55 ~ +150	°C

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITION	SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	$I_F = 2.0\text{A}$ $T_J = 25^\circ\text{C}$	V_F	--	1.3	V
Reverse leakage current	$V_R = 1000\text{V}$ $T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	I_R	--	5 200	μA
Typical junction capacitance (Note 5)		C_J		16	pF

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Note 6,7)	R_{thJC}	25	°C/W
	R_{thJL}	14	
	R_{thJa}	55	

DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITION	SYMBOL	MAX	UNIT
Reverse Recovery Time	$I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $I_{rr} = 0.25\text{A}$	T_{rr}	500	nS

- Note :**
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. 300us pulse width, 2% duty cycle.
 5. Measured at 1.0MHz and applied reverse voltage of 4.0V_{DC}.
 6. Thermal Resistance Junction to Case and Ambient.
 7. Thermal Resistance test performed in accordance with JESD-50.

**RATING AND CHARACTERISTIC CURVES
FRS2MD**

FIG.1- FORWARD CURRENT DERATING CURVE

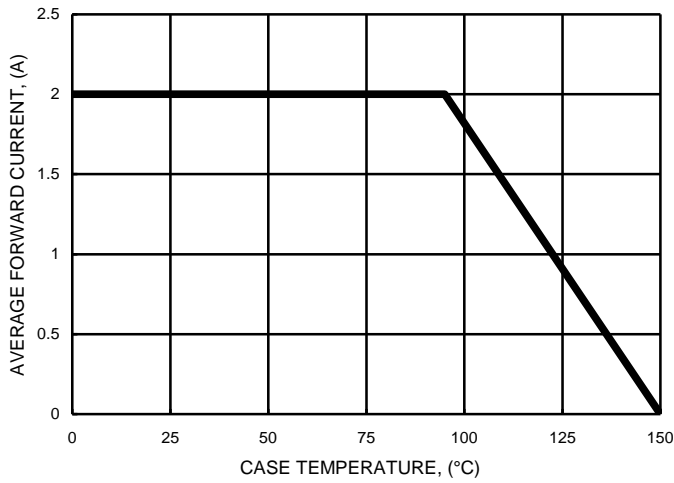


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

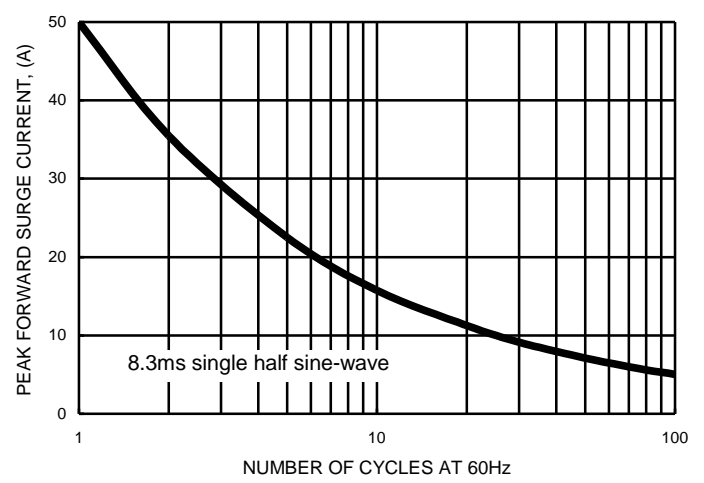


FIG.3- TYPICAL FORWARD CHARACTERISTICS

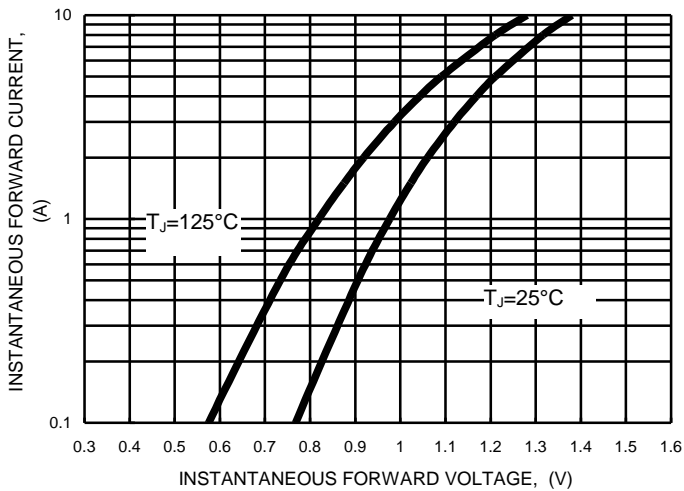


FIG.4- TYPICAL JUNCTION CAPACITANCE

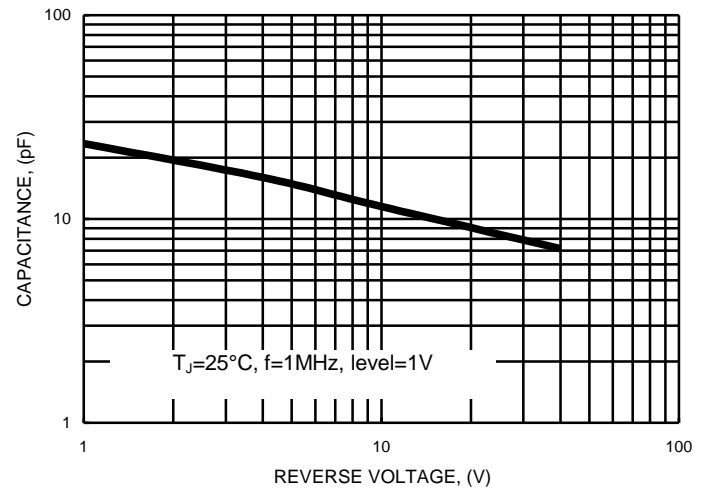
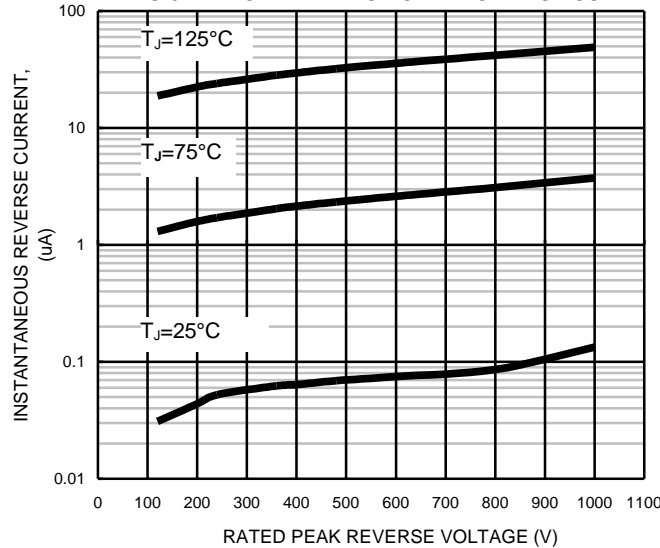


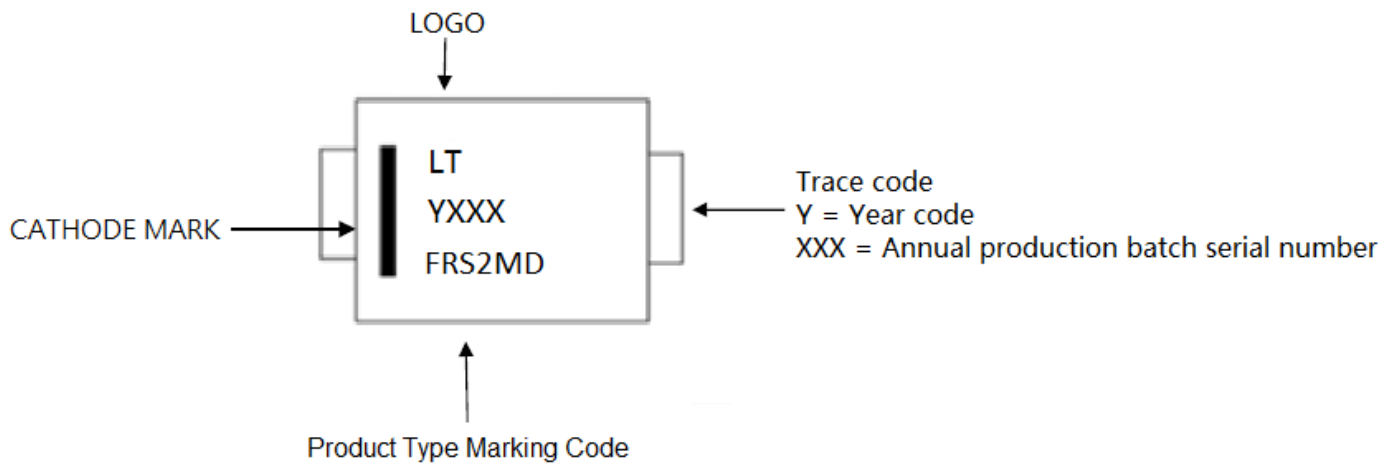
FIG.5- TYPICAL REVERSE CHARACTERISTICS



Ordering Information :

Part Number	Package	Packing	
		Qty.	Carrier
FRS2MD	F3-D	10000	Tape & Reel

Marking Information :



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