

**SURFACE MOUNT  
FAST RECOVERY RECTIFIER**

**REVERSE VOLTAGE – 600 Volts  
FORWARD CURRENT – 1.0 Ampere**

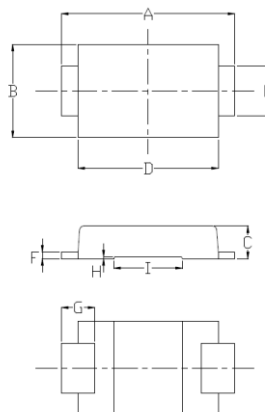
**FEATURES**

- Glass passivated chip
- Super fast switching for high efficiency
- For surface mounted applications
- Low forward voltage drop and high current capability
- Low reverse leakage current
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**

**MECHANICAL DATA**

- Case: JEDEC DO-221AC
- Case Material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl.) “Halogen-free”
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Lead Free Plating (Matte Tin Finish.)
- Component in accordance to RoHs 2002/95/EC

**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	$V_{RRM}$	600	V
Average rectified output current, see FIG. 1	$I_F$	1.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load.	$I_{FSM}$	30	A
Operation and storage temperature range	$T_J, T_{STG}$	-55 to +150	°C

**STATIC ELECTRICAL CHARACTERISTICS**

PARAMETER	TEST CONDITIONS		SYMBOL	MAX.	UNIT
Forward voltage (Note 4)	$I_F=1.0A$	$T_J=25^\circ C$	$V_F$	1.3	V
Leakage current	$V_R=600V$	$T_J=25^\circ C$ $T_J=125^\circ C$	$I_R$	5.0 200	$\mu A$

**THERMAL CHARACTERISTICS**

THERMAL CHARACTERISTIC	SYMBOL	TYP.	UNIT
Typical thermal resistance (Note 5)	$R_{thJC}$	15	°C/W
	$R_{thJL}$	28	
	$R_{thJA}$	90	

**DYNAMIC ELECTRICAL CHARACTERISTICS**

PARAMETER	TEST CONDITIONS	SYMBOL	Max.	Unit
Reverse recovery time	$I_F=0.5A, I_{rr}=0.25A, I_R=1.0A$	$t_{rr}$	250	ns

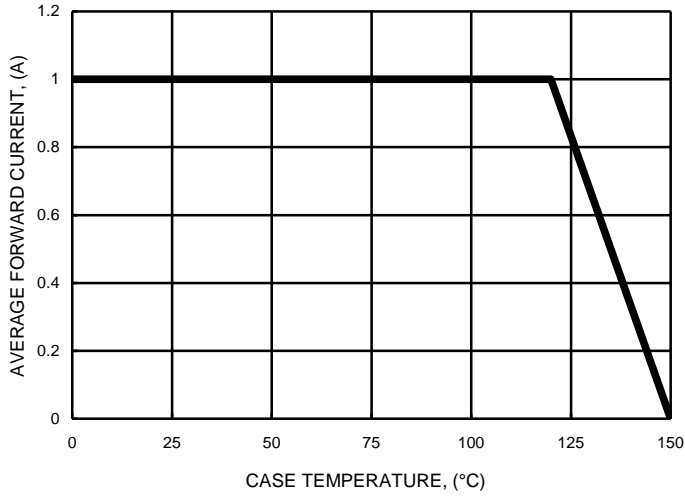
**Note :**

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. Thermal resistance test performed in accordance with JESD-51. Unit mounted on glass-epoxy substrate with 5 mm x 7 mm copper pad.

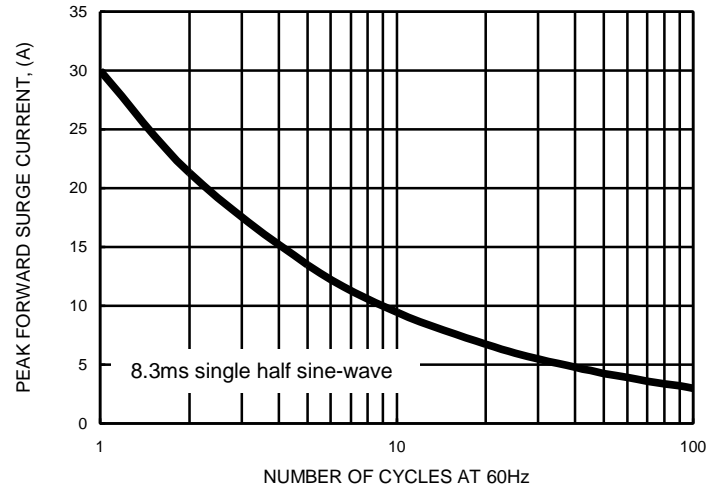
REV. 2, NOV-2021, KSGP01

**RATING AND CHARACTERISTIC CURVES  
FRS1JD(LS)**

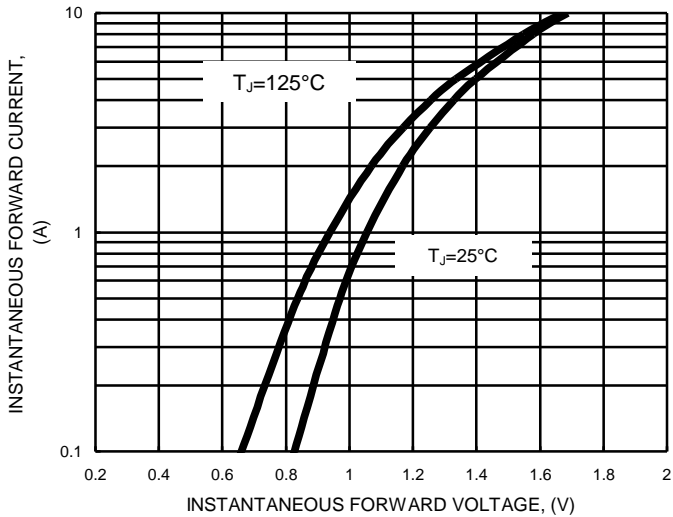
**FIG.1- FORWARD CURRENT DERATING CURVE**



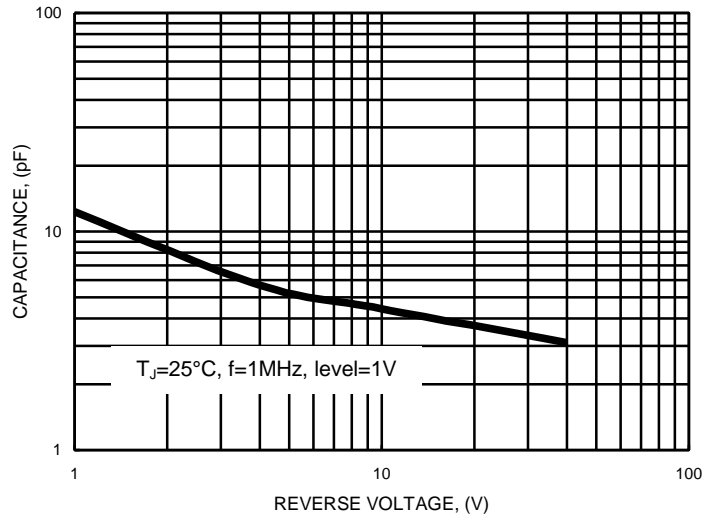
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



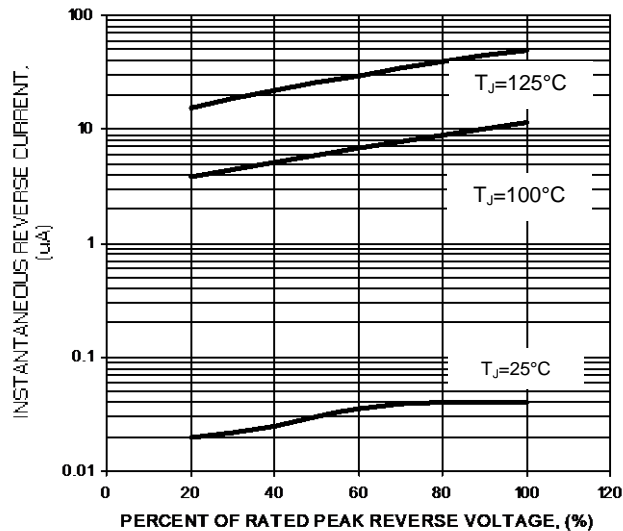
**FIG.3- TYPICAL FORWARD CHARACTERISTICS**



**FIG.4- TYPICAL JUNCTION CAPACITANCE**



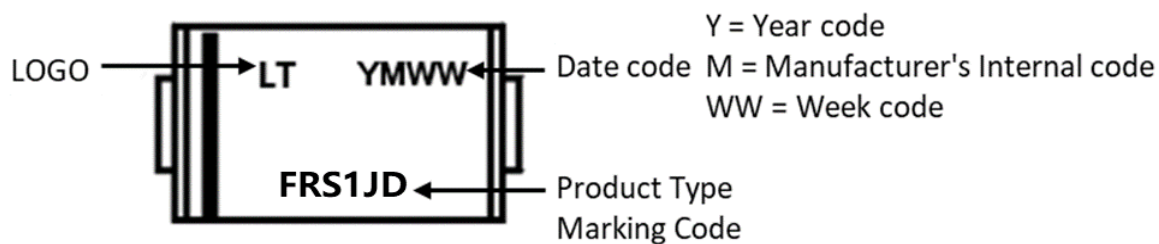
**FIG.5- TYPICAL REVERSE CHARACTERISTICS**



**Ordering Information:**

Part Number	Package	Packing	
		Qty.	Carrier
FRS1JD_HF	F3-D	10000	Tape & Reel

**Marking Information:**



**Packaging Information:**

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
FRS1JD	10000	13	10000	120K

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