

**SURFACE MOUNT  
FAST RECOVERY RECTIFIER**

**REVERSE VOLTAGE – 400 Volts  
FORWARD CURRENT – 1.5 Amperes**

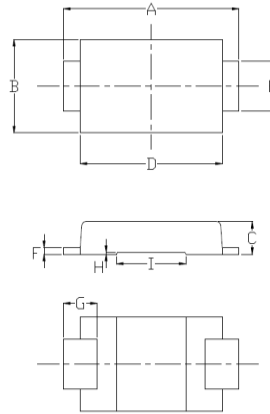
**FEATURES**

- Fast switching for high efficiency
- Glass passivated chip
- 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
- Lead free finish, RoHS compliant
- Marking: FRS2GD
- 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	$V_{RRM}$	400	V
Maximum DC blocking voltage	$V_{DC}$	400	V
Maximum Average rectified forward current	$I_{(AV)}$	1.5	A
Peak forward surge 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	50	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)	$I_F = 1.5A$	$T_J = 25^\circ C$	$V_F$	--	1.3	V
Reverse leakage current	$V_R = 400V$	$T_J = 25^\circ C$ $T_J = 125^\circ C$	$I_R$	--	5 200	$\mu A$
Typical junction capacitance (Note 5)			$C_T$	20		pF

**THERMAL CHARACTERISTICS**

PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Note 6)	$R_{thJC}$	35	°C/W
	$R_{thJL}$	20	
	$R_{thJA}$	65	

**DYNAMIC ELECTRICAL CHARACTERISTICS**

PARAMETER	TEST CONDITION	SYMBOL	MAX	UNIT
Reverse Recovery Time	$I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A$	$t_{rr}$	150	ns

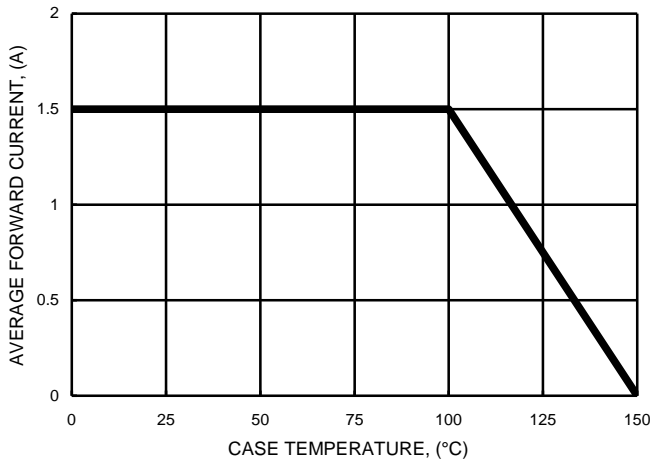
**Note :**

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<sub>DC</sub>.
6. Thermal Resistance Junction to Case and Lead and Ambient

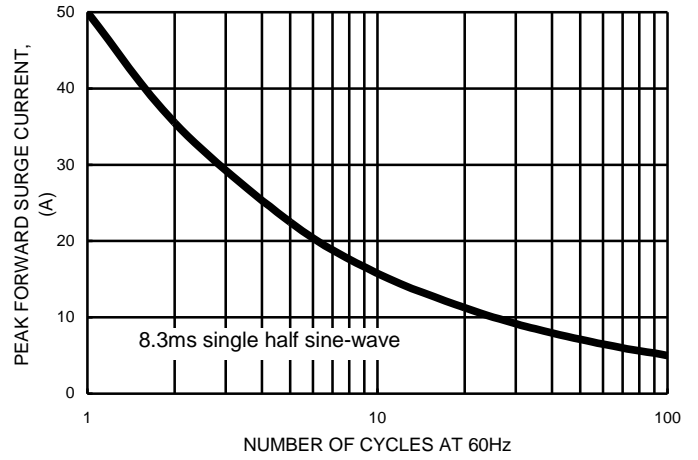
REV. 1, Nov.-2021, KSGP10

**RATING AND CHARACTERISTIC CURVES**  
**FRS2GD(LS)**

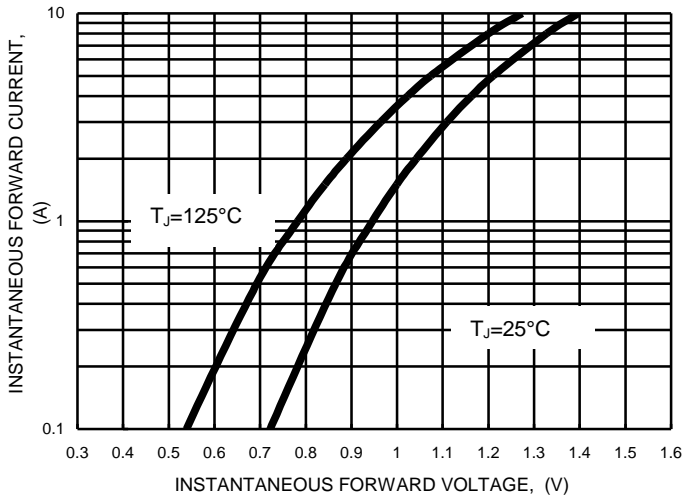
**FIG.1- FORWARD CURRENT DERATING CURVE**



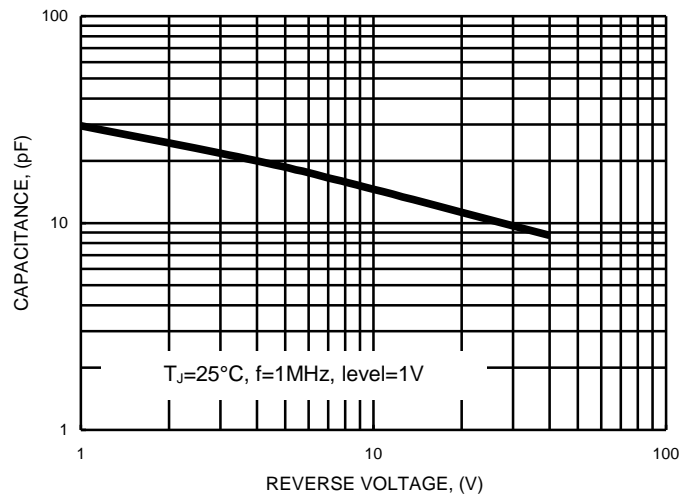
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



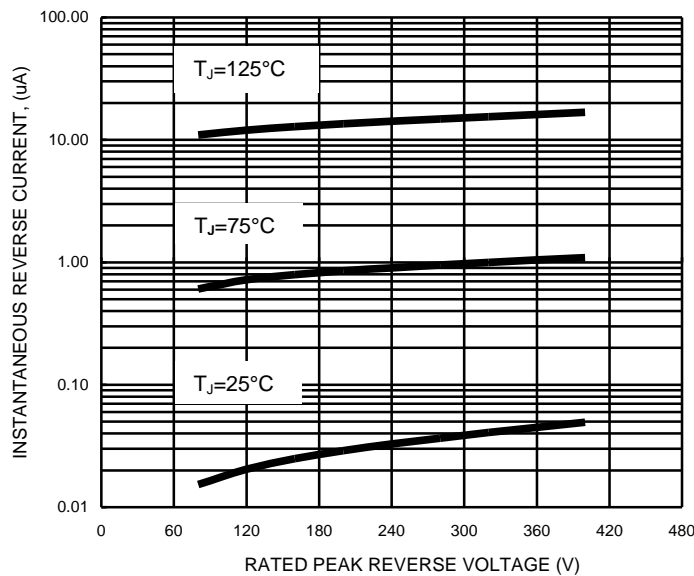
**FIG.3- TYPICAL FORWARD CHARACTERISTICS**



**FIG.4- TYPICAL JUNCTION CAPACITANCE**



**FIG.5- TYPICAL REVERSE CHARACTERISTICS**

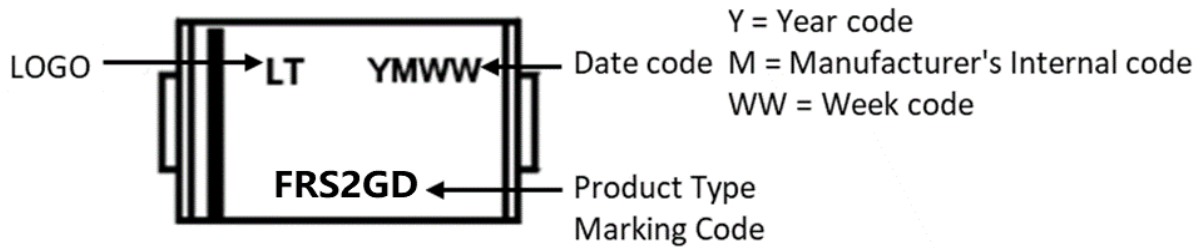


**MARKING AND PACKAGING INFORMATION  
FRS2GD(LS)**

**Ordering Information:**

Part Number	Package	Packing	
		Qty.	Carrier
FRS2GD_HF	F3-D	10000	Tape & Reel
FRS2GD_HF-07	F3-D	3000	Tape & Reel

**Marking Information:**



**Packaging Information:**

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
FRS2GD	10000	13	10000	120K

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