

**SURFACE MOUNT
SUPER FAST RECTIFIER**

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

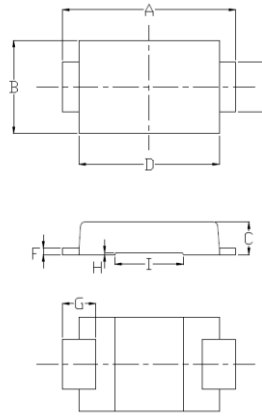
FEATURES

- 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

- Package: JEDEC DO-221AC
- Package Material: “Green” molding compound, UL flammability classification 94V-0, (No Br, Sb, Cl)
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish.) (e3)
- Component in accordance to RoHs 2002/95/EC
- Weight: 0.0354 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}	600	V
Average rectified output current @ $T_c=110^\circ\text{C}$	$I_{F(AVE)}$	1.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load.	I_{FSM}	30	A
Operating 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)	$I_F=1.0\text{A}$	$T_J=25^\circ\text{C}$	V_F	1.3	V
Leakage current	$V_R=600\text{V}$	$T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$	I_R	5.0 200	μA

THERMAL CHARACTERISTICS

THERMAL CHARACTERISTIC	SYMBOL	TYP.	UNIT
Typical thermal resistance (Notes 5, 6)	R_{thJC}	15	°C/W
	R_{thJL}	30	
	R_{thJA}	90	

DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	Max.	Unit
Reverse recovery time	$I_F=0.5\text{A}, I_{rr}=0.25\text{A}, I_R=1.0\text{A}$	t_{rr}	35	ns

Notes:

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. R_{thJL} is measured at the PIN 2, R_{thJC} is measured at the top centre of body.
6. The device mounted on 5 mm x 7 mm copper pad.

**RATING AND CHARACTERISTIC CURVES
FES1JD**

FIG.1- FORWARD CURRENT DERATING CURVE

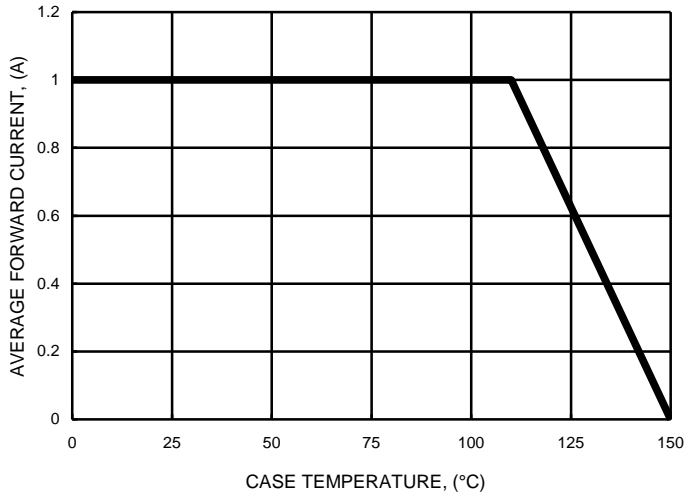


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

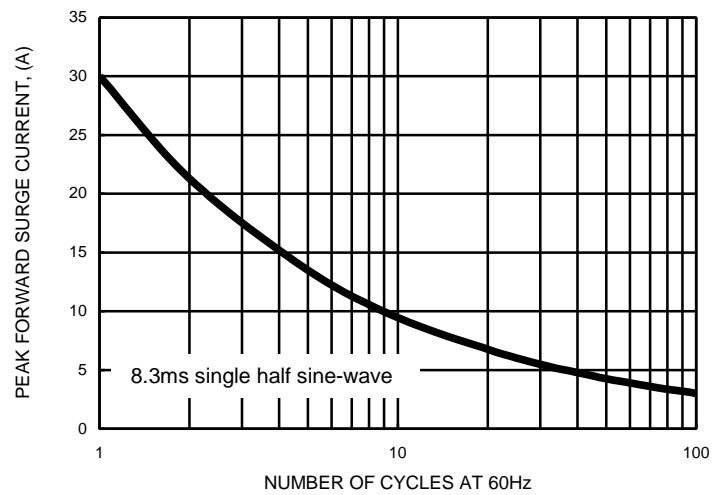


FIG.3- TYPICAL FORWARD CHARACTERISTICS

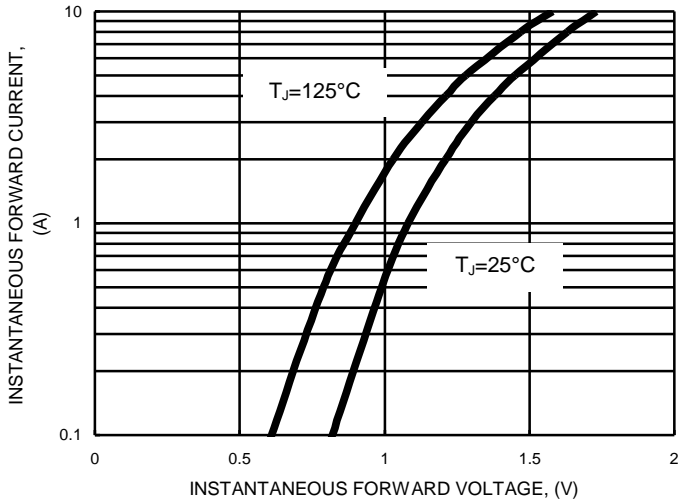


FIG.4- TYPICAL JUNCTION CAPACITANCE

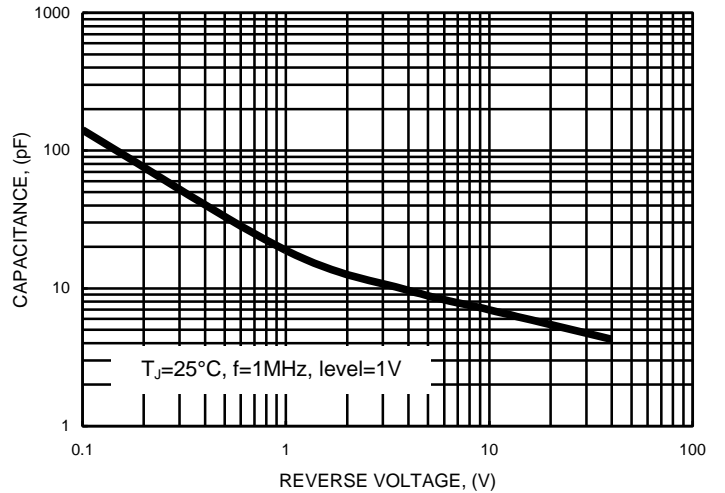
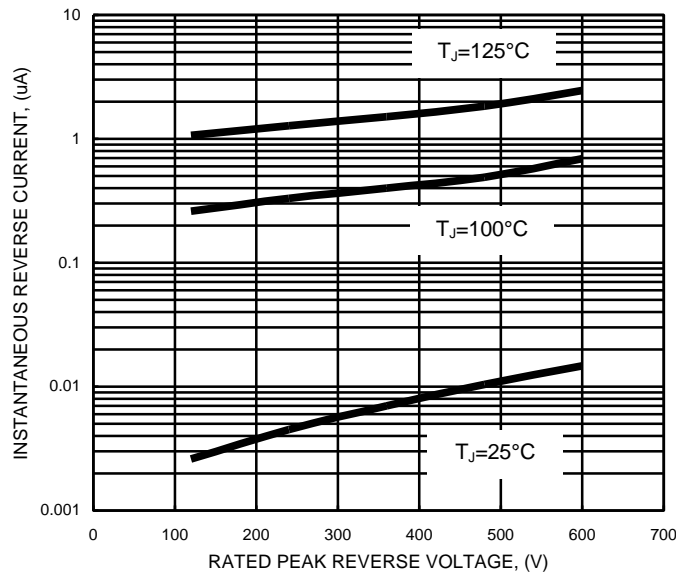


FIG.5- TYPICAL REVERSE CHARACTERISTICS

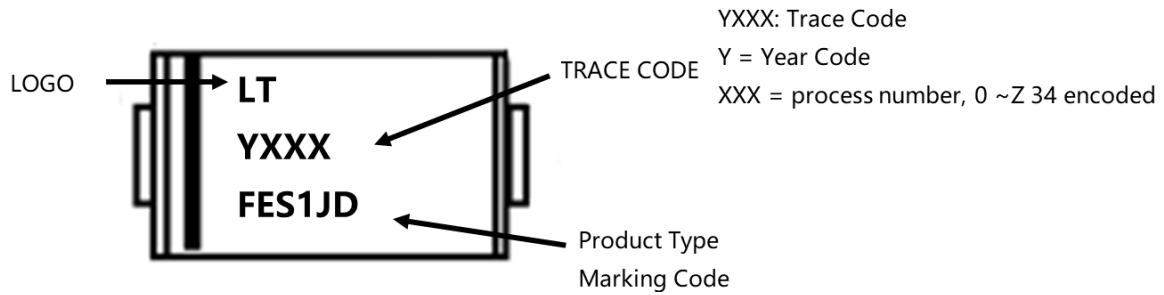


ORDERING AND MARKING INFORMATION
FES1JD

Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
FES1JD_HF	F3-D	10000	Tape & Reel

Marking Information:



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