FES1JE(LS)

SURFACE-MOUNT SUPER FAST RECTIFIERS

REVERSE VOLTAGE – 600 Volts
FORWARD CURRENT – 1.0 Amperes

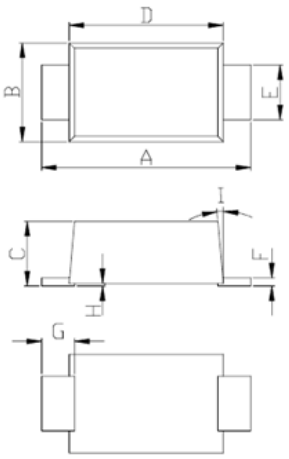
FEATURES

- Fast switching for high efficiency
- For surface-mounted applications
- Nitride passivated chip
- Low reverse leakage current
- Low-forward voltage drop
- High-current capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative.**
  https://www.diodes.com/quality/product-definitions/

MECHANICAL DATA

- Package: JEDEC DO-219AA
- 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) e3
- Component in accordance to RoHs 2002/95/EC
- Marking Code: E1J
- Weight: 16.5mg (Approximate)

F1A



F1A			
DIM	MIN	TYP	MAX
A	3.50	3.80	3.90
B	1.70	1.90	2.00
C	0.81	1.18	1.20
D	2.70	2.80	2.90
E	0.80	1.00	1.35
F	0.05	0.15	0.30
G	0.35	0.60	0.85
H	0.03	0.07	0.10
I	0°	5°	8°
All dimension in millimeter			

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at +25°C ambient temperature unless otherwise specified.

ABSOLUTE RATING

PARAMETER		SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	600	V
Maximum DC blocking voltage		V_{DC}	600	V
Average rectified forward current	@Tc = 75°C	$I_{(AV)}$	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 CONDITION		SYMBOL	TYP	MAX	UNIT
Forward voltage	I_F = 1.0A	T_J = 25°C	V_F	1.09	1.3	V
Leakage current	V_R = 600V	T_J = 25°C T_J = 125°C	I_R	0.1 3	5 200	μA
Typical junction capacitance (Note 4)			C_T	20		pF

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP	UNIT
Typical Thermal Resistance (Note 5)	R_{thJA} R_{thJL} R_{thJC}	105 45 55	°C/W

DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITION	SYMBOL	MAX	UNIT
Reverse-recovery time	I_F=0.5A, I_{RR}=0.25A, I_R=1.0A	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. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
5. Thermal resistance test performed in accordance with JESD-51.

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RATING AND CHARACTERISTIC CURVES
FES1JE(LS)

FIG.1- FORWARD CURRENT DERATING CURVE

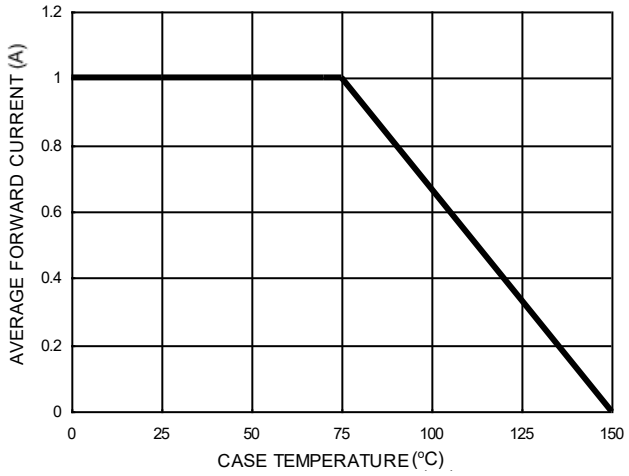


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

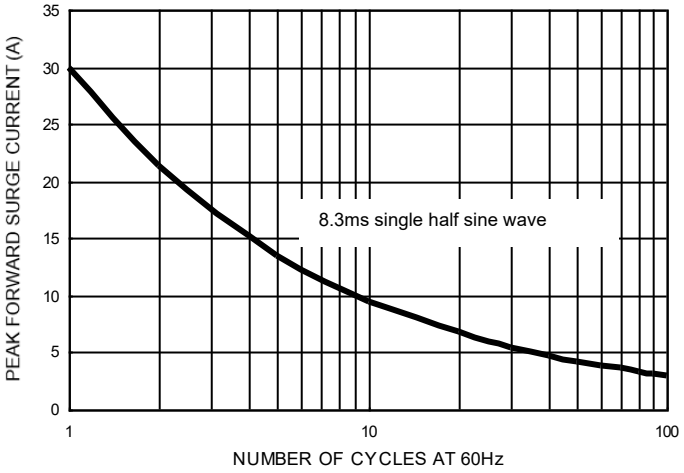


FIG.3- TYPICAL FORWARD CHARACTERISTICS

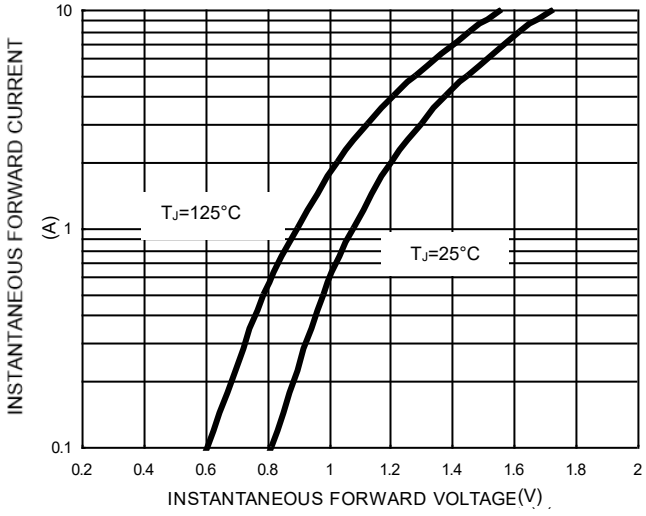


FIG.4- TYPICAL JUNCTION CAPACITANCE

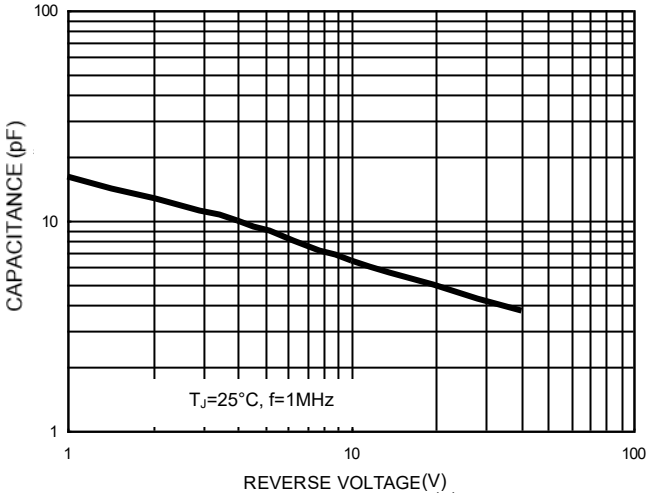
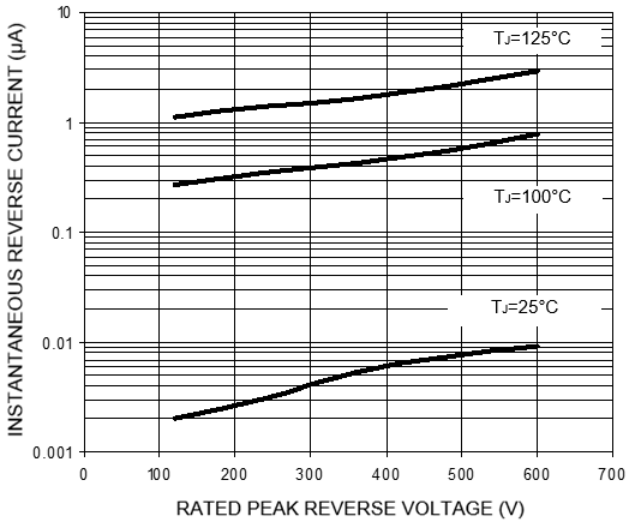


FIG.5- TYPICAL REVERSE CHARACTERISTICS



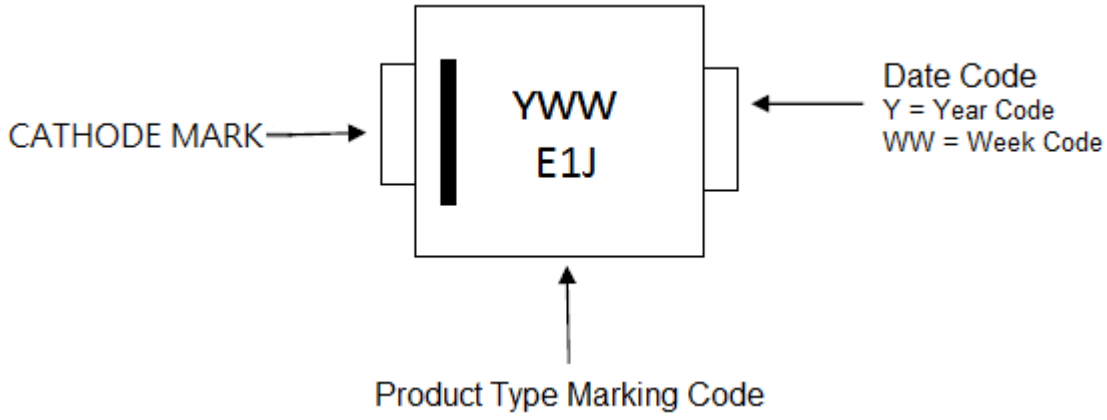
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Ordering Information: (Note 7)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
FES1JE-7	F1A	2500	Tape & Reel (Width 12mm)
FES1JE-7D (Note 6)	F1A	2500	Tape & Reel (Width 8mm)
FES1JE	F1A	10000	Tape & Reel (Width 12mm)

Note: 6. For packaging "7D" is 7-inch reel with 8mm carrier tape width.
7. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information:



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