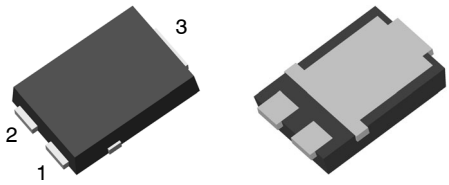
Ultrafast Rectifiers, Surface Mount, 10 A, 200 V - 600 V

FES10D, FES10G, FES10J



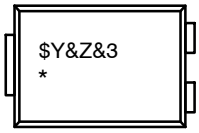
TO−277−3LD
CASE 340BQ

Features

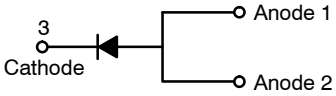
- Very Low Profile: Typical Height of 1.1 mm
- Ultrafast Recovery Time
- Low Forward Voltage Drop
- Low Thermal Resistance
- Very Stable Operation at Industrial Temperature, 150°C
- RoHS Compliant
- Green Molding Compound as per IEC61249 Standard
- Lead Free in Compliance with EU RoHS 2011/65/EU Directive
- With DAP Option Only
- Industrial Device Qualified per AEC−Q101 Standards

* See authorized use policy

MARKING DIAGRAM



$Y = **onsemi** Logo
&Z = Assembly Plant Code
&3 = Date Code (Year & Week)
* = Specific Device Code
FES10D, FES10G, FES10J



MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage FES10D FES10G FES10J	V_{RRM}	 200 400 600	V
Average Forward Rectified Current	$I_{F(AV)}$	10	A
Peak Forward Surge Current: 8.3 ms Single Half Sine−Wave Superimposed on Rated Load	I_{FSM}	150	A
Operating Junction Temperature Range	T_J	−55 to +175	°C
Storage Temperature Range	T_{STG}	−55 to +175	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

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ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping†
FES10D	FES10D	TO−277 3L (with DAP Option only)	5000 / Tape & Reel
FES10G	FES10G	TO−277 3L (with DAP Option only)	5000 / Tape & Reel
FES10J	FES10J	TO−277 3L (with DAP Option only)	5000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

THERMAL CHARACTERISTICS (Values are at T_A = 25°C unless otherwise noted) (Note 1)

Parameter	Symbol	Value	Unit
Thermal Characteristics, Junction−to−Lead, Thermocouple Soldered to Cathode	Ψ_{JL}	6	°C/W
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	100	°C/W

1. Per JESD51−3 Recommended Thermal Test Board.

ELECTRICAL CHARACTERISTICS (Values are at T_A = 25°C unless otherwise noted)

Symbol	Parameter	Conditions	Value			Unit
			FES10D	FES10G	FES10J	
V_F	Maximum Instantaneous Forward Voltage (Note 2)	I_F = 10 A	0.95	1.20	1.80	V
		I_F = 10 A, T_J = 125°C	0.86	1.00	–	
I_R	Maximum Reverse Current at Rated V_R	T_J = 25°C	5			μA
		T_J = 125°C	250	500		
C_J	Typical Junction Capacitance	V_R = 4 V, f = 1 MHz	140			pF
T_{rr}	Typical Reverse Recovery Time	I_F = 0.5 A, I_R = 1 A, I_{RR} = 0.25 A	30			ns
		I_F = 1 A, di/dt = 50 A/μs, V_R = 30 A	40			

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse test with PW = 300 μs, 1% duty cycle

TYPICAL CHARACTERISTICS

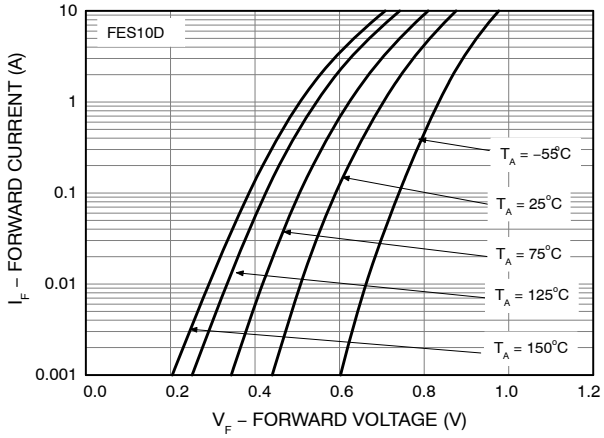

Fig 1. Typical Forward Characteristics for FES10D

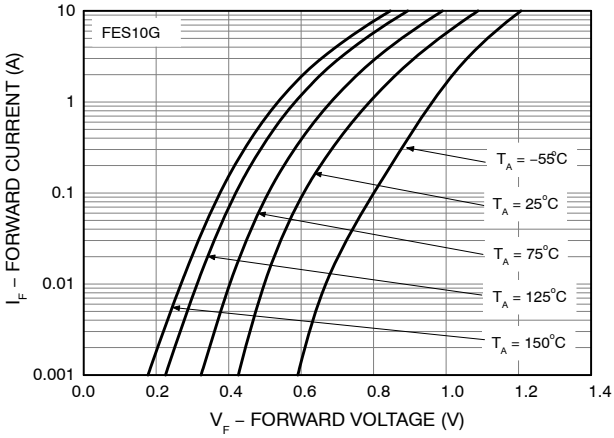

Fig 2. Typical Forward Characteristics for FES10G

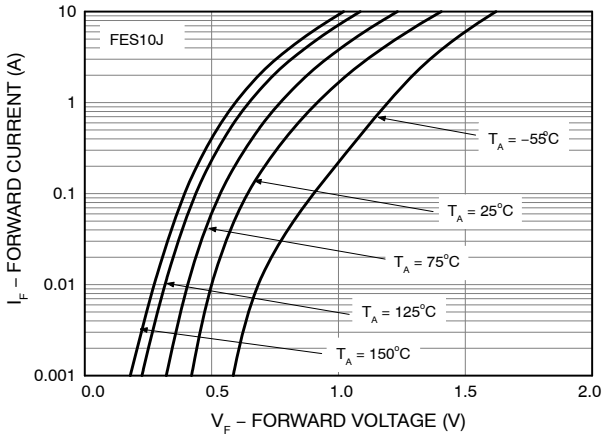

Fig 3. Typical Forward Characteristics for FES10J

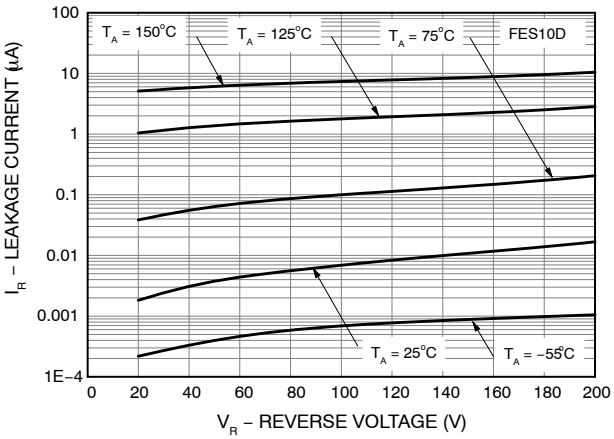

Fig 4. Typical Reverse Characteristics for FES10D

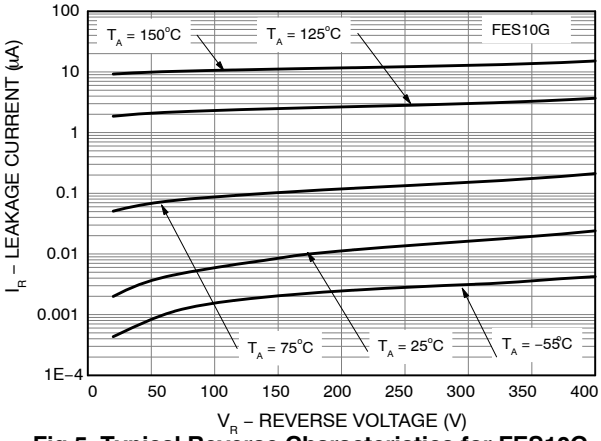

Fig 5. Typical Reverse Characteristics for FES10G

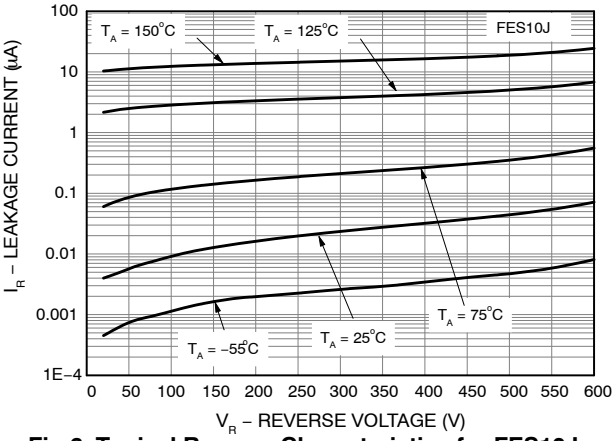

Fig 6. Typical Reverse Characteristics for FES10J

TYPICAL CHARACTERISTICS

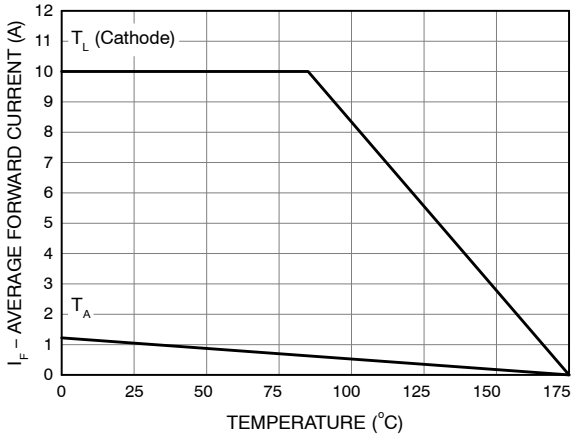

Fig 7. Forward Current Derating Curve

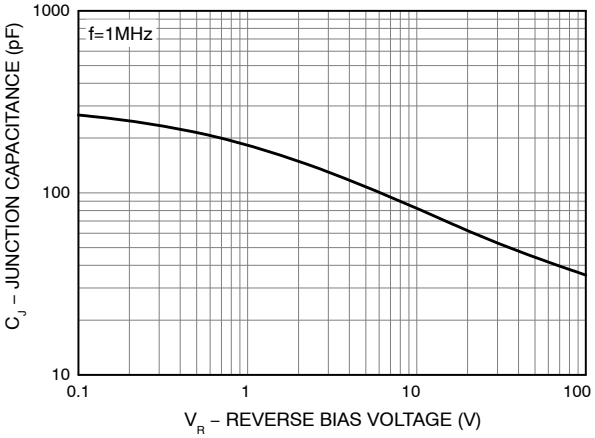

Fig 8. Typical Junction Capacitance

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CASE 340BQ
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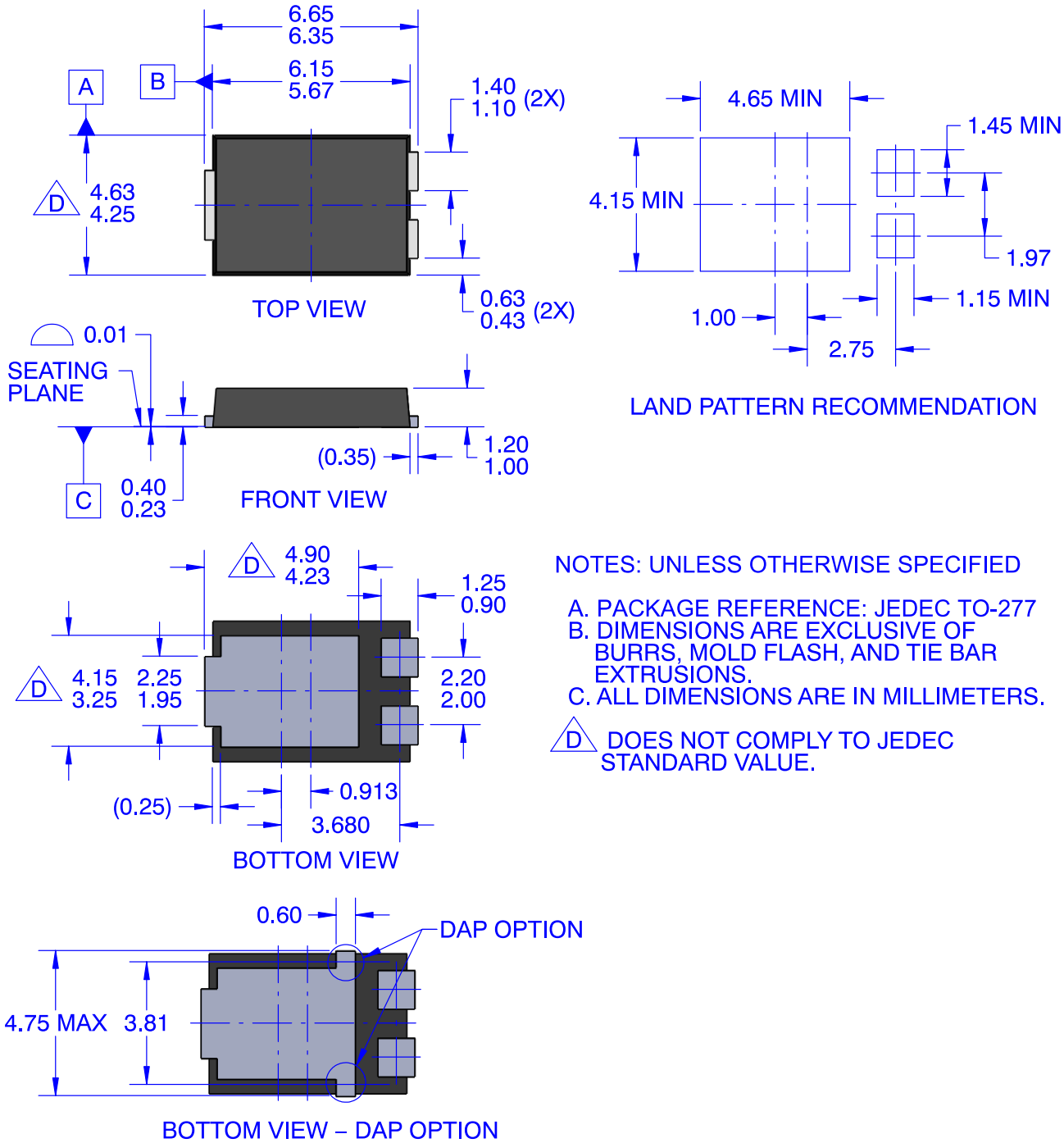
DATE 30 SEP 2016



NOTES: UNLESS OTHERWISE SPECIFIED

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B. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.
C. ALL DIMENSIONS ARE IN MILLIMETERS.

D DOES NOT COMPLY TO JEDEC STANDARD VALUE.

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