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FES6D, FES6G, FES6J

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

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
- Industrial Device Qualified per AEC-Q101 Standards

* See authorized use policy

MAXIMUM RATINGS

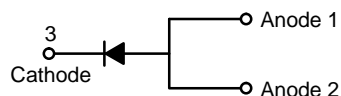
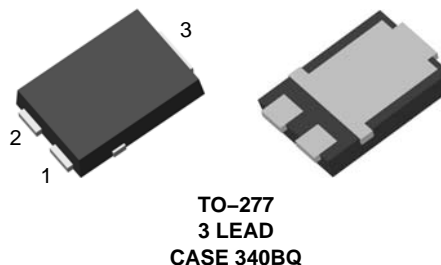
Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage FES6D FES6G FES6J	V_{RRM}	200 400 600	V
Average Forward Rectified Current	$I_{F(AV)}$	6	A
Peak Forward Surge Current: 8.3 ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	80	A
Operating Junction Temperature Range	T_J	-55 to +175	°C
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.



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ORDERING INFORMATION

See detailed ordering and shipping information on page 6 of this data sheet.

FES6D, FES6G, FES6J

THERMAL CHARACTERISTICS (Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted) (Note 1)

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

1. Per JESD51-3 Recommended Thermal Test Board.

ELECTRICAL CHARACTERISTICS (Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Value			Unit
			FES6D	FES6G	FES6J	
V _F	Maximum Instantaneous Forward Voltage (Note 2)	I _F = 6 A	1.05	1.20	2.2	V
		I _F = 6 A, T _J = 125°C	0.90	1.00	1.80	
I _R	Maximum Reverse Current at Rated V _R	T _J = 25°C	2			μA
		T _J = 125°C	200	500		
C _J	Typical Junction Capacitance	V _R = 4 V, f = 1 MHz	60		45	pF
T _{rr}	Typical Reverse Recovery Time	I _F = 0.5 A, I _R = 1 A, I _{RR} = 0.25 A	25			ns
		I _F = 1 A, di/dt = 50 A/μs, V _R = 30 V	45			

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 $PW = 300\text{ }\mu\text{s}$, 1% duty cycle

FES6D, FES6G, FES6J

TYPICAL CHARACTERISTICS

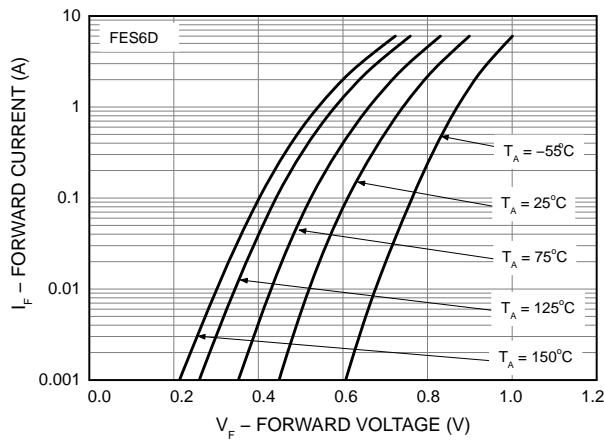


Fig 1. Typical Forward Characteristics for FES6D

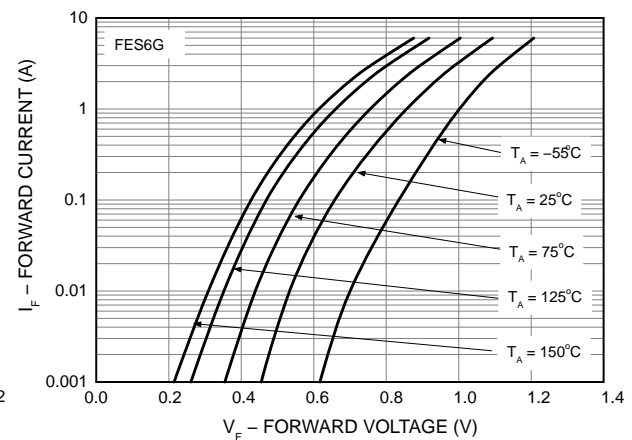


Fig 2. Typical Forward Characteristics for FES6G

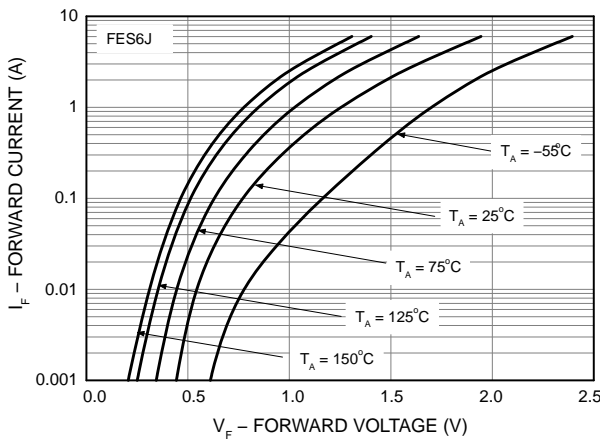


Fig 3. Typical Forward Characteristics for FES6J

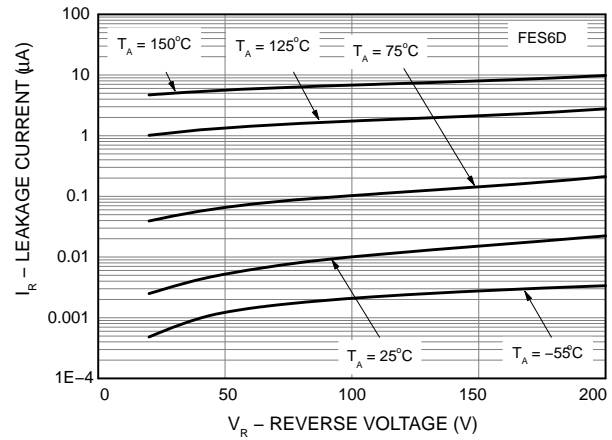


Fig 4. Typical Reverse Characteristics for FES6D

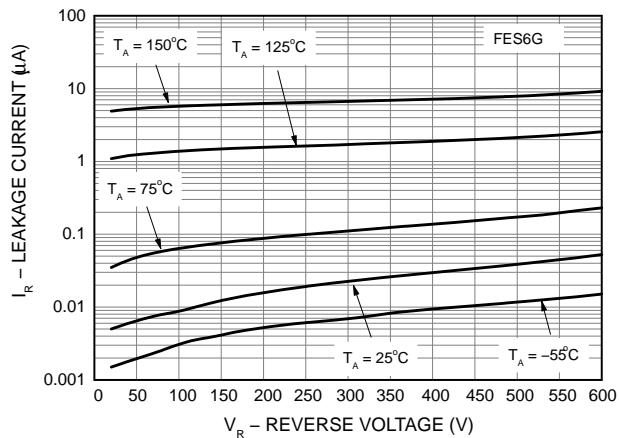


Fig 5. Typical Reverse Characteristics for FES6G

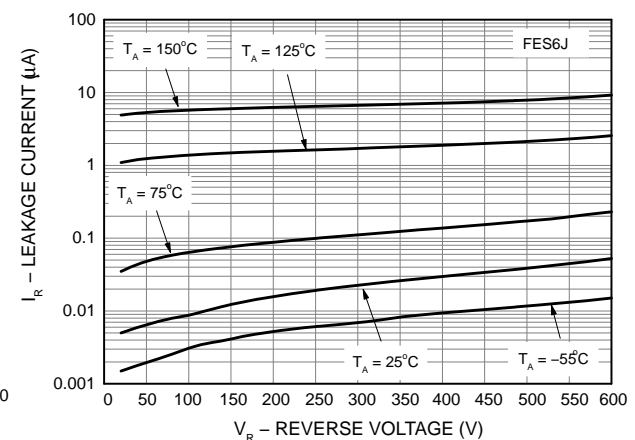


Fig 6. Typical Reverse Characteristics for FES6J

FES6D, FES6G, FES6J

TYPICAL CHARACTERISTICS

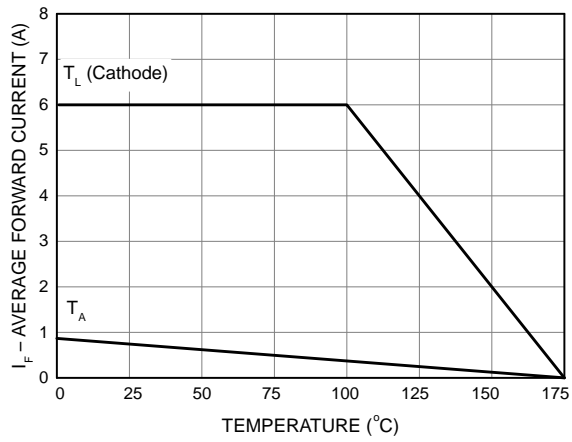


Fig 7. Forward Current Derating Curve

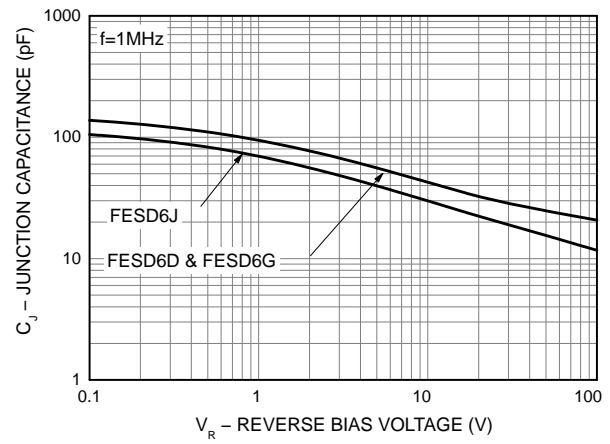
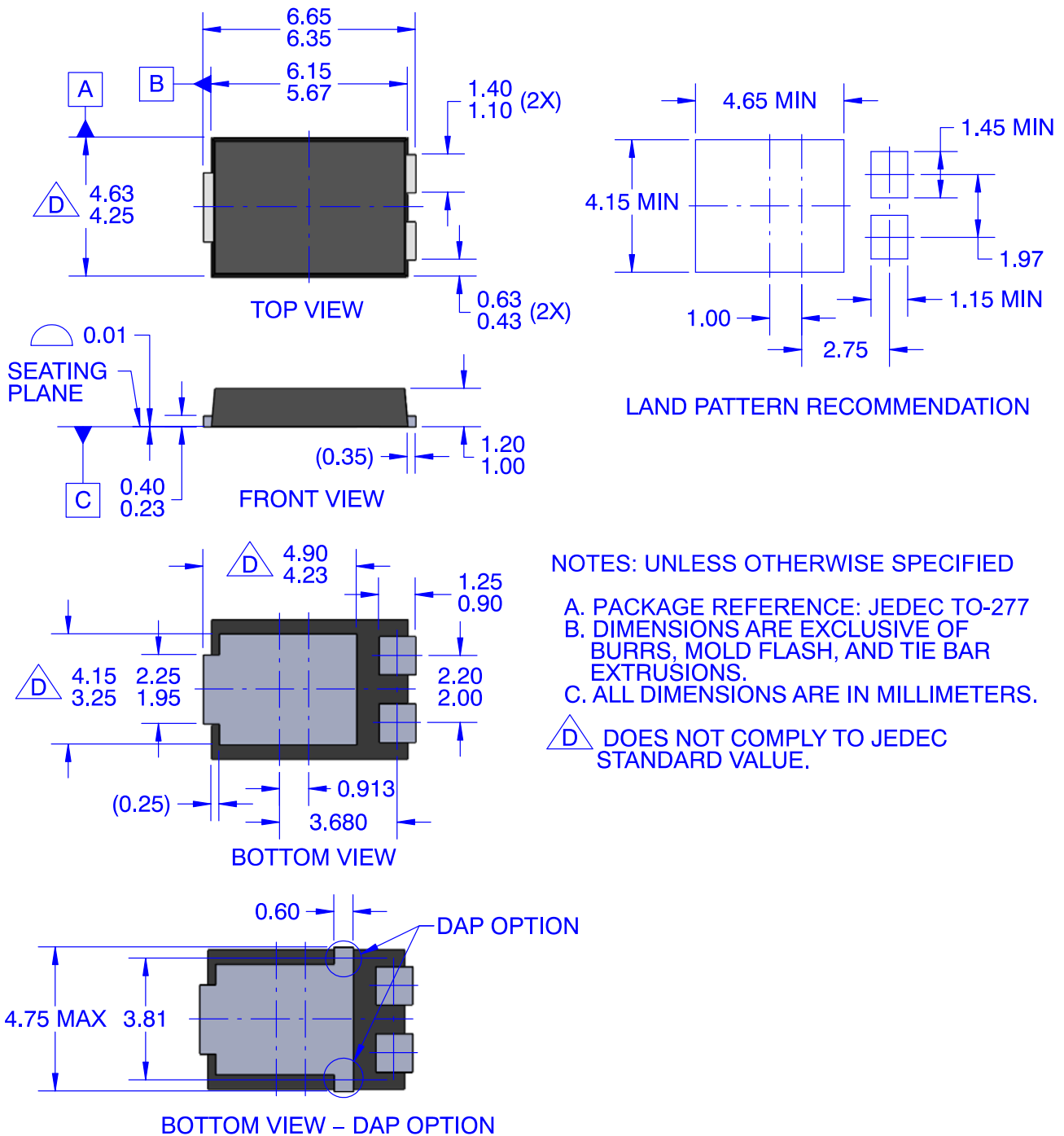


Fig 8. Typical Junction Capacitance

FES6D, FES6G, FES6J

PACKAGE DIMENSIONS


TO-277-3LD
CASE 340BQ
ISSUE O



FES6D, FES6G, FES6J

ORDERING INFORMATION

Part Number	Top Mark	Package	Packing Method
FES6D	FES6D	TO-277 3L (with DAP Option only)	Tape & Reel
FES6G	FES6G	TO-277 3L (with DAP Option only)	Tape & Reel
FES6J	FES6J	TO-277 3L (with DAP Option only)	Tape & Reel

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