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

FES6, NRVFES6 Series

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
- NRV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable

MAXIMUM RATINGS

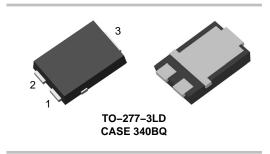
Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage FES6D FES6G FES6J	V_{RRM}	200 400 600	V
Average Forward Rectified Current	I _{F(AV)}	6	Α
Peak Forward Surge Current: 8.3 ms Single Half Sine–Wave Superimposed on Rated Load	I _{FSM}	80	A
Operating Junction Temperature Range	TJ	–55 to +175	°C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

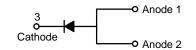
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ON

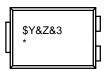
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MARKING DIAGRAM



\$Y &Z &3

- = ON Semiconductor Logo
- = Assembly Plant Code
 - = Date Code (Year & Week)
 - = Specific Device Code FES6D, FES6G, FES6J

ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping [†]
FES6D	FFOOD	TO-277 3L (with DAP Option only)	5000 / Tape & Reel
NRVFES6D*	FES6D		
FES6G	FES6G		
NRVFES6G*	FESOG		
FES6J	FFCCI		
NRVFES6J*	FES6J		

[†]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.

^{*}NRV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

FES6, NRVFES6 Series

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

Parameter	Symbol	Value	Unit
Thermal Characteristics, Junction-to-Lead, Thermocouple Soldered to Cathode	$\Psi_{\sf JL}$	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)

			Value			
Symbol	Parameter	Conditions	FES6D	FES6G	FES6J	Unit
V_{F}	Maximum Instantaneous Forward	I _F = 6 A	1.05	1.20	2.2	V
	Voltage (Note 2)	I _F = 6 A, T _J = 125°C	0.90	1.00	1.80	
I _R	Maximum Reverse Current	T _J = 25°C		2	•	μΑ
	at Rated V _R	T _J = 125°C	200	50	00	
СЛ	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 45			ns
		$I_F = 1 \text{ A, di/dt} = 50 \text{ A/}\mu\text{s, V}_R = 30 \text{ V}$				

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 = $300 \mu s$, 1% duty cycle

FES6, NRVFES6 Series

TYPICAL CHARACTERISTICS

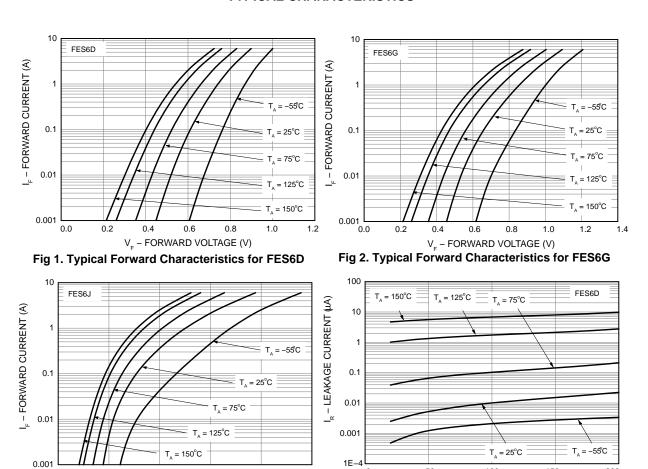


Fig 3. Typical Forward Characteristics for FES6J

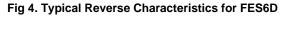
V_F - FORWARD VOLTAGE (V)

1.0

1.5

0.0

0.5

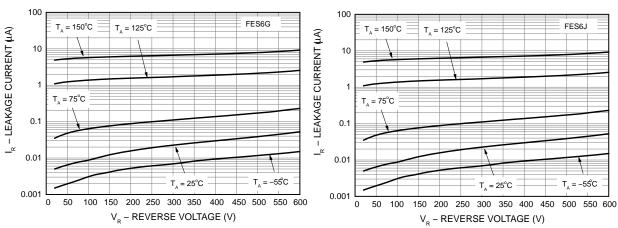


100

V_D - REVERSE VOLTAGE (V)

150

200



2.5

Fig 5. Typical Reverse Characteristics for FES6G

Fig 6. Typical Reverse Characteristics for FES6J

FES6, NRVFES6 Series

TYPICAL CHARACTERISTICS

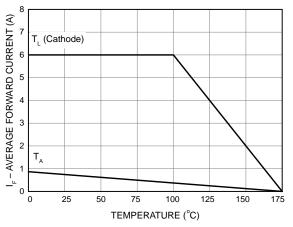


Fig 7. Forward Current Derating Curve

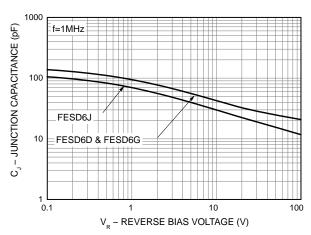
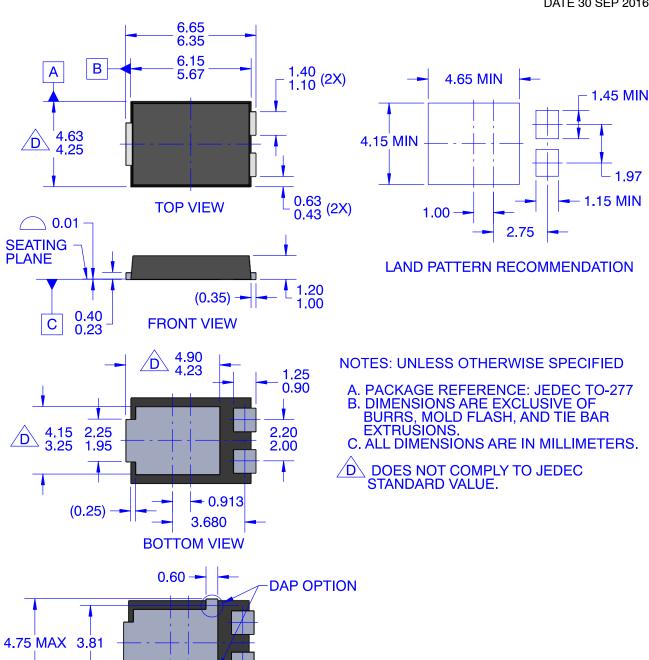


Fig 8. Typical Junction Capacitance



DATE 30 SEP 2016



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BOTTOM VIEW - DAP OPTION

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