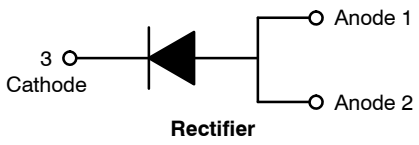
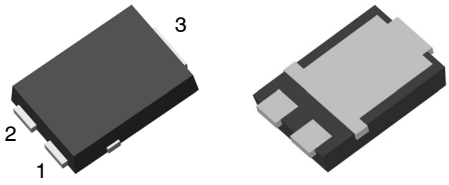
8 A Standard Recovery Surface Mount Rectifiers

FS8G - FS8M



Rectifier



TO−277−3LD
CASE 340BQ

Description

The FS8G to FS8M series offers breakthrough size and performance. It sinks 8 A DC forward current and provides up to 230 A surge current capability with only 0.37 μA reverse leakage current. All this capability is packed into a small, flat−lead, TO−277 package, optimized for space−constrained applications.

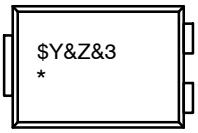
Features

- Very High forward Surge Capability: I_{FSM} = 230 A
- Low Leakage Current: 0.37 μA at T_A = 25°C
- Very Low Profile: Typical Height of 1.1 mm
- Glass Passivated Junction
- HBM (JEDEC A114) > 8 KV; CDM (JEDEC C101C) > 2 KV
- Green Molding Compound as per IEC61249 Standard
- With DAP Option Only
- These Devices are Pb−Free, Halogen Free Free and are RoHS Compliant

Applications

- General−Purpose Applications
- Reverse Polarity Protection
- Rectifications

MARKING DIAGRAM



$Y	= **onsemi** Logo
&Z	= Assembly Plant Code
&3	= Date Code (Year & Week)
*	= Specific Device Code FS8G, FS8J, FS8K, FS8M

ORDERING INFORMATION

See detailed ordering and shipping information on page 3 of this data sheet.

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ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Symbol	Rating	Value				Unit
		FS8G	FS8J	FS8K	FS8M	
V_{RRM}	Maximum Repetitive Peak Reverse Voltage	400	600	800	1000	V
V_{RMS}	Maximum RMS Reverse Voltage	280	420	560	700	V
V_{DC}	DC Blocking Voltage	400	600	800	1000	V
$I_{F(AV)}$	Maximum Average Rectified Forward Current	8				A
I_{FSM}	Peak Forward Surge Current: 8.3 ms Single Half Sine−Wave Superimposed on Rated Load	230				A
T_J	Operating Junction Temperature Range	−55 to +150				°C
T_{STG}	Storage Temperature Range	−55 to +150				°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.

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

Symbol	Characteristic	Minimum Land Pattern	Maximum Land Pattern	Unit
$R_{\theta JA}$	Junction−to−Ambient Thermal Resistance	100	40	°C/W
Ψ_{JL}	Junction−to−Lead Thermal Characteristics, Thermocouple Soldered to Anode	20	12	°C/W
	Junction−to−Lead Thermal Characteristics, Thermocouple Soldered to Cathode	6	5	

1. The thermal resistances ($R_{\theta JA}$ & Ψ_{JL}) are characterized with device mounted on the following FR4 printed circuit boards, as shown in Figure 1 and Figure 2. PCB size: 76.2 x 114.3 mm. Minimum land pattern size: 4.9 x 4.8 mm (big pattern, x1), 1.4 x 1.52 mm (small pattern, x2). Maximum land pattern size: 30 x 30 mm (pattern, x2). Force line trace size = 55 mils, sense line trace size = 4 mils.



Figure 1. Minimum Land Pattern of 2 oz Copper

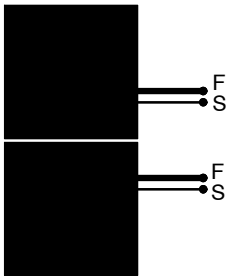


Figure 2. Maximum Land Pattern of 2 oz Copper

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_F	Forward Voltage	I_F = 8 A	–	0.951	1.1	V
		I_F = 8 A, T_A = 125°C		0.845		
I_R	DC Reverse Current	$V_R = V_{DC}$	–	0.37	5	μA
		$V_R = V_{DC}$, T_A = 125°C		84		
T_{rr}	Reverse Recovery Time	I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A		3.37		μs
C_J	Junction Capacitance	V_R = 0 V, f = 1 MHz		118		pF

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.

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ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping†
FS8G	FS8G	TO−277 3L (DAP Option) (Pb−Free/Halogen Free)	5000 / Tape & Reel
FS8J	FS8J	TO−277 3L (DAP Option) (Pb−Free/Halogen Free)	5000 / Tape & Reel
FS8K	FS8K	TO−277 3L (DAP Option) (Pb−Free/Halogen Free)	5000 / Tape & Reel
FS8M	FS8M	TO−277 3L (DAP Option) (Pb−Free/Halogen Free)	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.

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TYPICAL PERFORMANCE CHARACTERISTICS

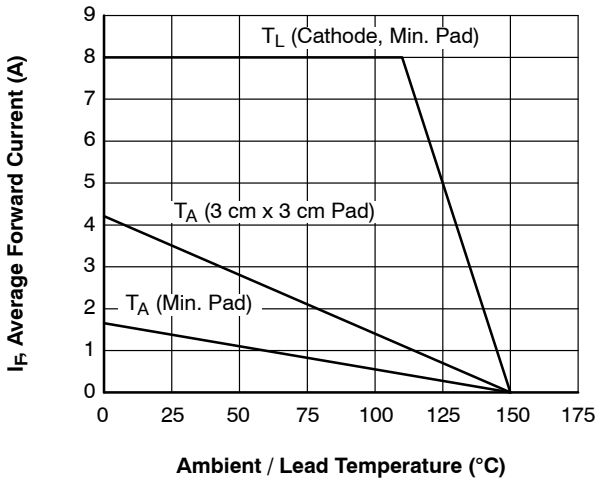


Figure 3. Forward Current Derating Curve

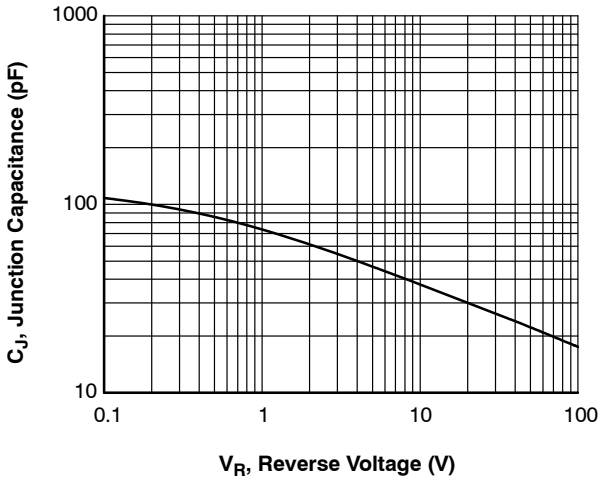


Figure 4. Typical Junction Capacitance

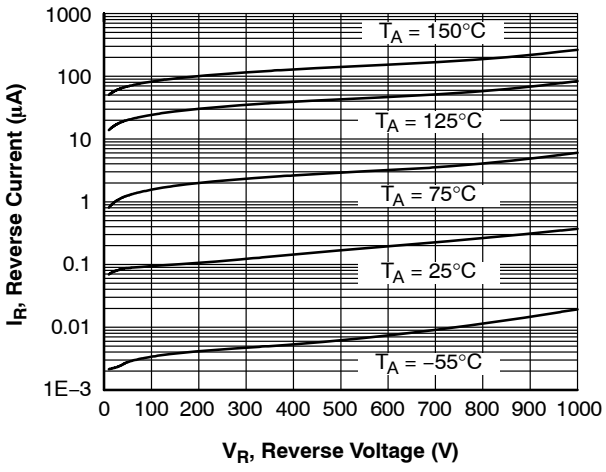


Figure 5. Typical Reverse Characteristics

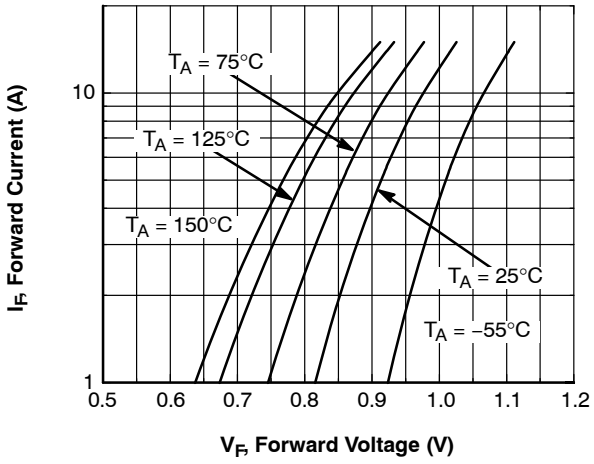


Figure 6. Typical Forward Characteristics

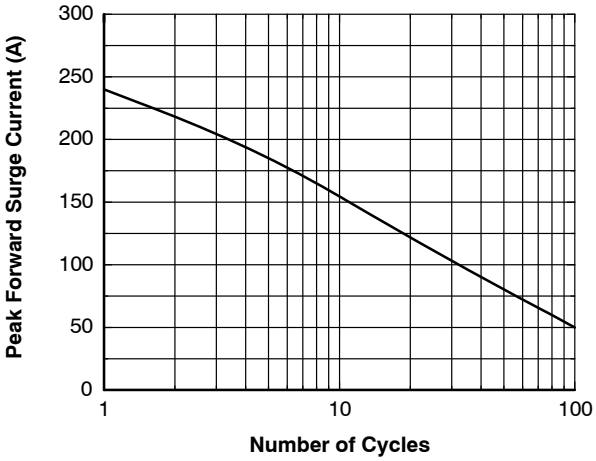
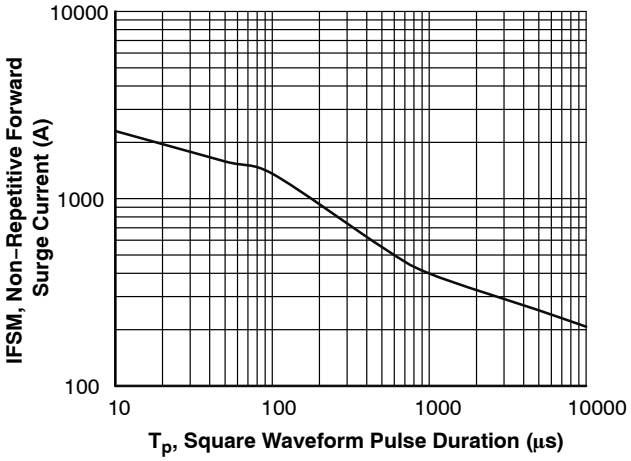


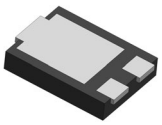
Figure 7. Maximum Non−Repetitive Peak Forward Surge Current



NOTE: Typical performance bases on a limited sample size, not guarantee rating.

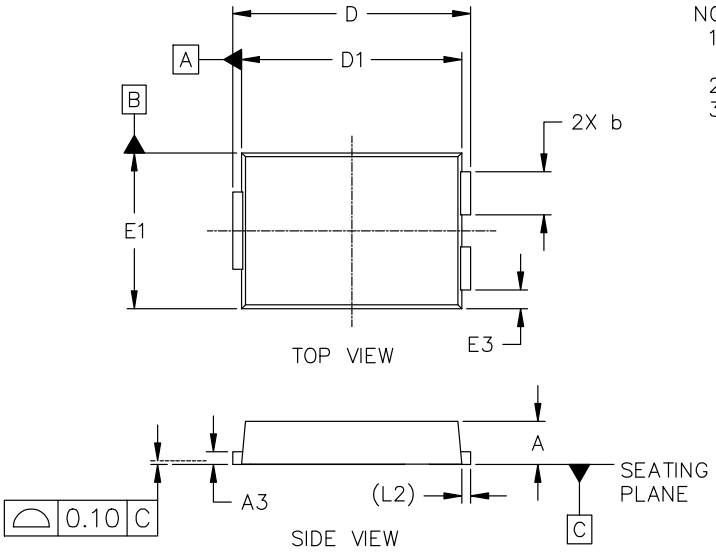
Figure 8. Typical Non−Repetitive Forward Surge Current

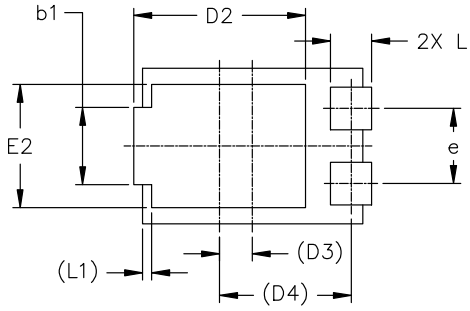
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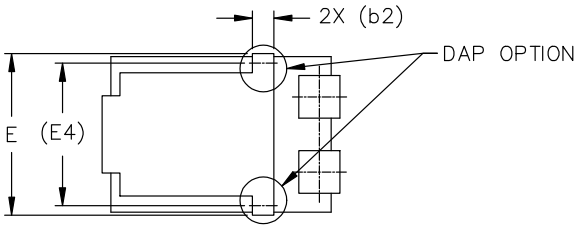


TO−277−3 5.91x4.44x1.10, 2.10P
CASE 340BQ
ISSUE A

DATE 16 APR 2026

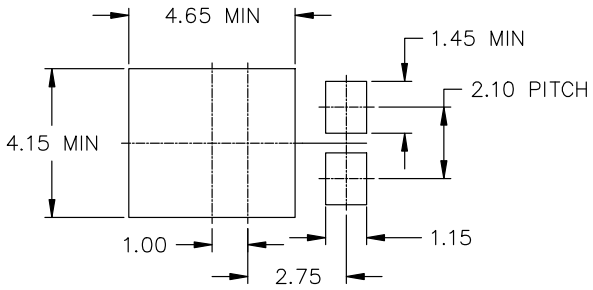






NOTES:
1. DIMENSIONING AND TOLERANCING AS PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSIONS D1 AND E1 DO NOT INCLUDE MOLD FLASH, MOLD FLASH SHALL NOT EXCEED 0.13 mm PER SIDE.

MILLIMETERS			
DIM	MIN	NOM	MAX
A	1.00	1.10	1.20
A3	0.23	0.32	0.40
b	1.10	1.25	1.40
b1	1.95	2.10	2.25
b2	0.60 REF		
D	6.35	6.50	6.65
D1	5.67	5.91	6.15
D2	4.23	4.57	4.90
D3	0.913 REF		
D4	3.680 REF		
E	−−−	−−−	4.75
E1	4.25	4.44	4.63
E2	3.25	3.48	3.70
E3	0.43	0.53	0.63
E4	3.680 REF		
e	2.00	2.10	2.20
L	0.90	1.08	1.25
L1	0.25 REF		
L2	0.35 REF		



RECOMMENDED MOUNTING FOOTPRINT

*For additional information on our Pb−Free strategy and soldering details, please download the onsemi Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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