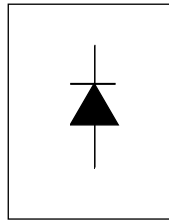


International
IOR Rectifier

QUIETIR Series
8EWF..S

**SURFACE MOUNTABLE
FAST SOFT RECOVERY
DIODE**



$V_F < 1.3V @ 8A$
 $t_{rr} = 80ns$
 $V_{RRM} 1000 \text{ to } 1200V$

Description/Features

The 8EWF..S fast soft recovery **QUIETIR** rectifier series has been optimized for combined short reverse recovery time, low forward voltage drop and low leakage current

The glass passivation ensures stable reliable operation in the most severe temperature and power cycling conditions.

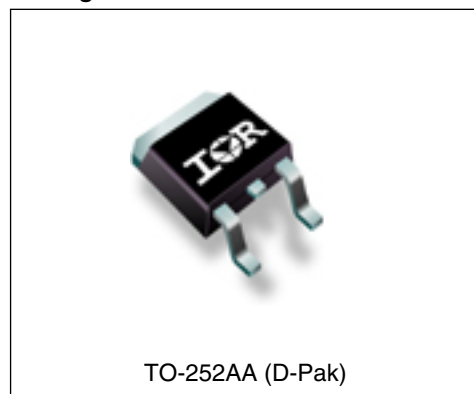
Typical applications are both:

- Output rectification and freewheeling diode in inverters, choppers and converters.
- Input rectifications where severe restrictions on conducted EMI should be met.

Major Ratings and Characteristics

Characteristics	8EWF..S	Units
$I_{F(AV)}$ Sinusoidal waveform	8	A
V_{RRM}	1000to1200	V
I_{FSM}	170	A
$V_F @ 8A, T_J=25^\circ C$	1.3	V
$t_{rr} @ 1A, 100A/\mu s$	80	ns
T_J range	-40to150	$^\circ C$

Package Outline



Voltage Ratings

Part Number	V_{RRM} , maximum peak reverse voltage V	V_{RSM} , maximum non repetitive peak reverse voltage V	I_{RRM} 150°C mA
8EWF10S	1000	1100	4
8EWF12S	1200	1300	

Absolute Maximum Ratings

Parameters	8EWF..S	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current	8	A	@ $T_C = 94^\circ\text{C}$, 180° conduction half sine wave
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current	170	A	10ms Sine pulse, rated V_{RRM} applied
	200		10ms Sine pulse, no voltage reapplied
I^2t Max. I^2t for fusing	144	A^2s	10ms Sine pulse, rated V_{RRM} applied
	200		10ms Sine pulse, no voltage reapplied
$I^2\sqrt{t}$ Max. $I^2\sqrt{t}$ for fusing	2000	A^2/\sqrt{s}	$t = 0.1$ to 10ms, no voltage reapplied

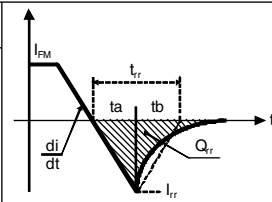
Electrical Specifications

Parameters	8EWF..S	Units	Conditions
V_{FM} Max. Forward Voltage Drop	1.3	V	@ 8A, $T_J = 25^\circ\text{C}$
r_t Forward slope resistance	25.6	$m\Omega$	$T_J = 150^\circ\text{C}$
$V_{F(TO)}$ Threshold voltage	0.93	V	
I_{RM} Max. Reverse Leakage Current	0.1	mA	$T_J = 25^\circ\text{C}$
	4		$T_J = 150^\circ\text{C}$

$V_R = \text{rated } V_{RRM}$

Typical Reverse Recovery Characteristics

Parameters	8EWF..S	Units	Conditions
t_{rr} Reverse Recovery Time	270	ns	$I_F @ 8\text{Apk}$ @ $25\text{A}/\mu\text{s}$ @ $T_J = 25^\circ\text{C}$
I_{rr} Reverse Recovery Current	4.2	A	
Q_{rr} Reverse Recovery Charge	1	μC	
S Typical Snap Factor	t_b/t_a	-	



Thermal-Mechanical Specifications

Parameters	8EWF.S	Units	Conditions
T _J Max. Junction Temperature Range	-40 to 150	°C	
T _{stg} Max. Storage Temperature Range	-40 to 150	°C	
R _{thJC} Max. Thermal Resistance Junction to Case	2.5	°C/W	DC operation
R _{thJA} Typ. Thermal Resistance Junction to Ambient (PCB Mount)**	50	°C/W	
wt Approximate Weight	1(0.03)	g(oz.)	
T Case Style	TO-252AA (D-Pak)		

**When mounted on 1" square (650mm²) PCB of FR-4 or G-10 material 4 oz (140µm) copper 40°C/W
 For recommended footprint and soldering techniques refer to application note #AN-994

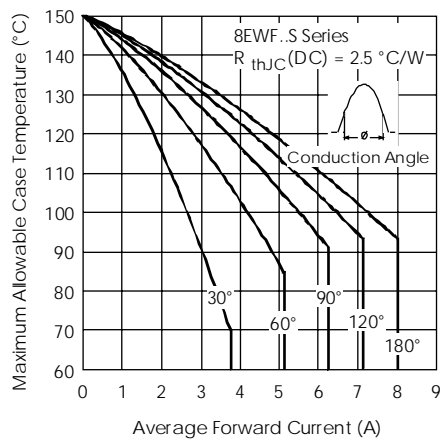


Fig. 1 - Current Rating Characteristics

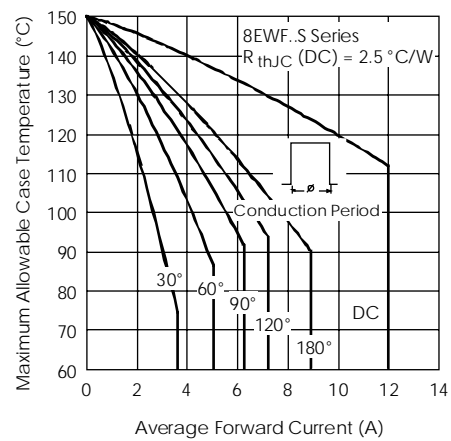


Fig. 2 - Current Rating Characteristics

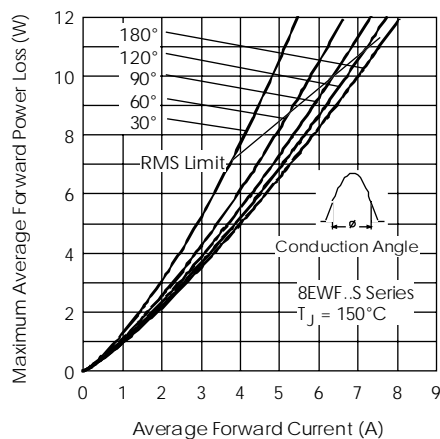


Fig. 3 - Forward Power Loss Characteristics

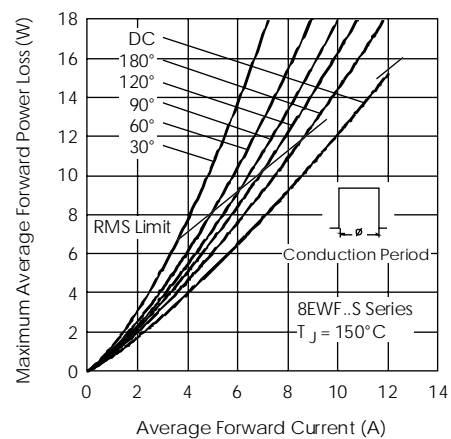


Fig. 4 - Forward Power Loss Characteristics

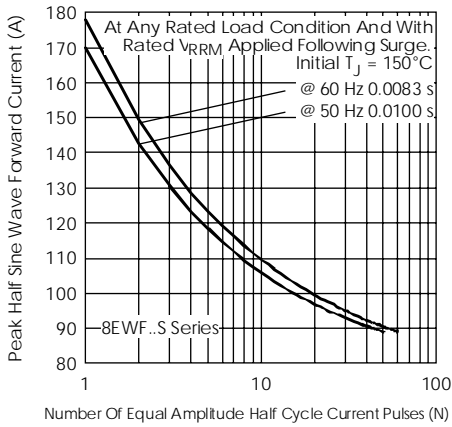


Fig.5-Maximum Non-Repetitive Surge Current

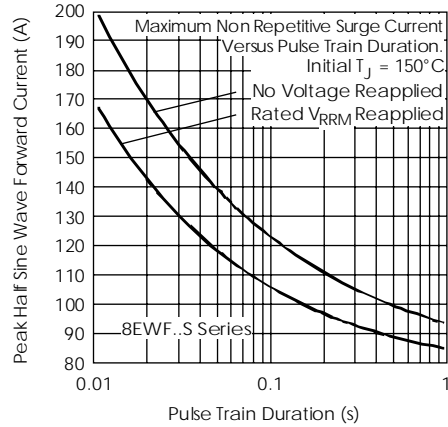


Fig.6-Maximum Non-Repetitive Surge Current

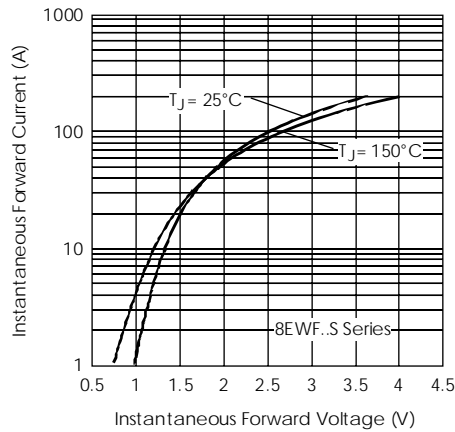


Fig.7-Forward Voltage Drop Characteristics

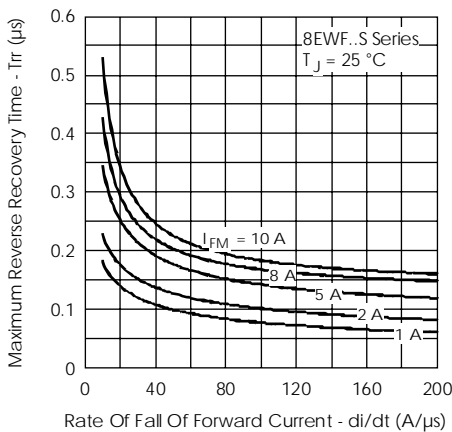


Fig.8- Recovery Time Characteristics, $T_J = 25^\circ\text{C}$

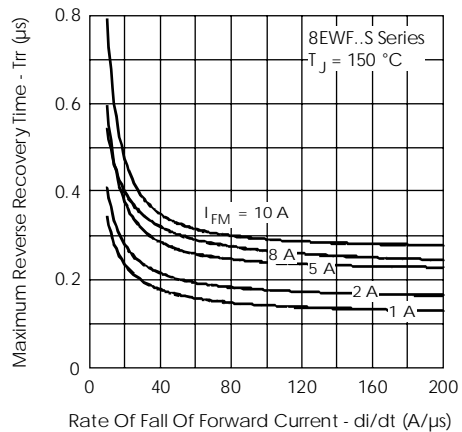


Fig.9- Recovery Time Characteristics, $T_J = 150^\circ\text{C}$

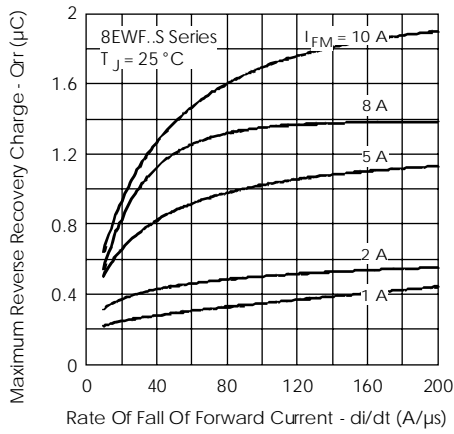


Fig. 10-Recovery Charge Characteristics, $T_J = 25^\circ\text{C}$

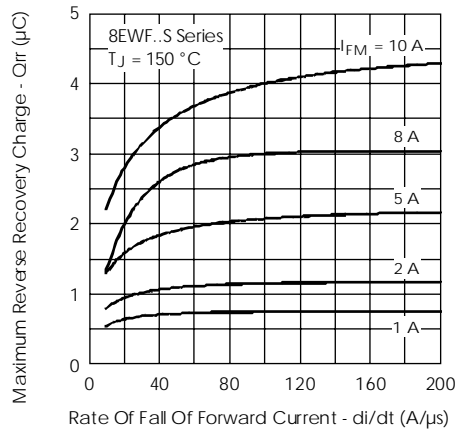


Fig. 11-Recovery Charge Characteristics, $T_J = 150^\circ\text{C}$

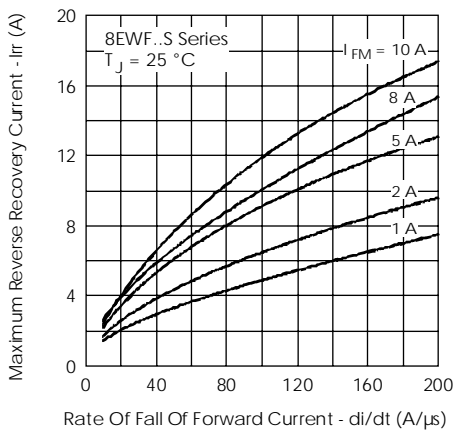


Fig. 12-Recovery Current Characteristics, $T_J = 25^\circ\text{C}$

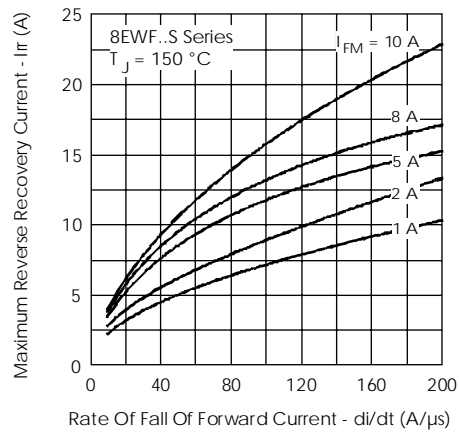


Fig. 13-Recovery Current Characteristics, $T_J = 150^\circ\text{C}$

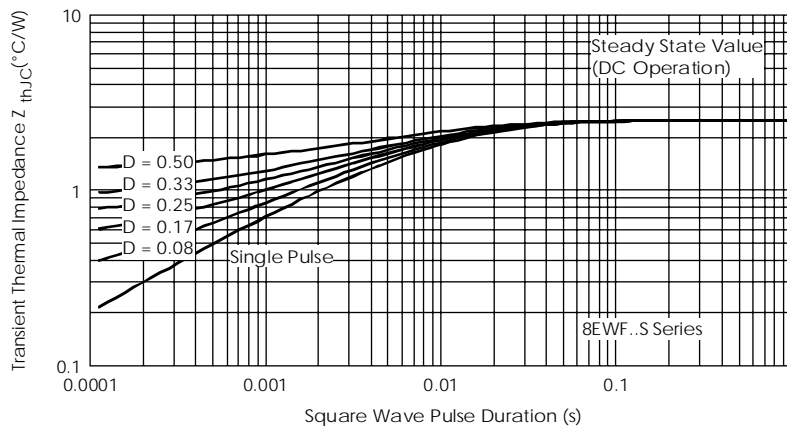


Fig. 14-Thermal Impedance Z_{thjC} Characteristics

Ordering Information Table

Device Code

8	E	W	F	12	S	TRL
(1)	(2)	(3)	(4)	(5)	(6)	(7)

8 = Voltage Rating Code x 100 = V
E = Single Diode
W = Single Diode Recovery Rectifier
F = Single Diode
12 = Voltage Rating Code x 100 = V
S = Single Diode
TRL = Left Orientation Reel
TRR = Right Orientation Reel

RRM

10 = 1000V
12 = 1200V

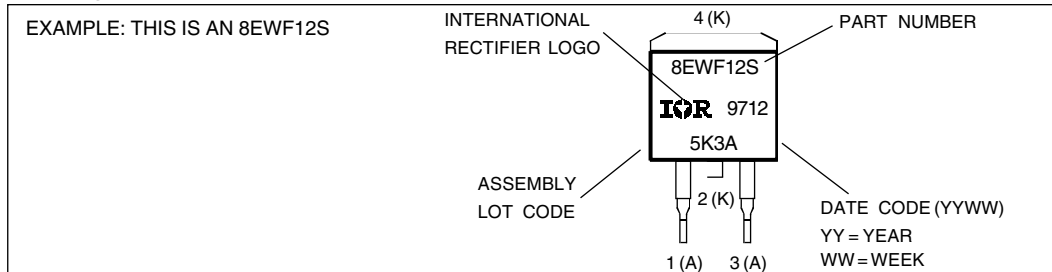
Outline Table

Dimensions in millimeters and (inches)

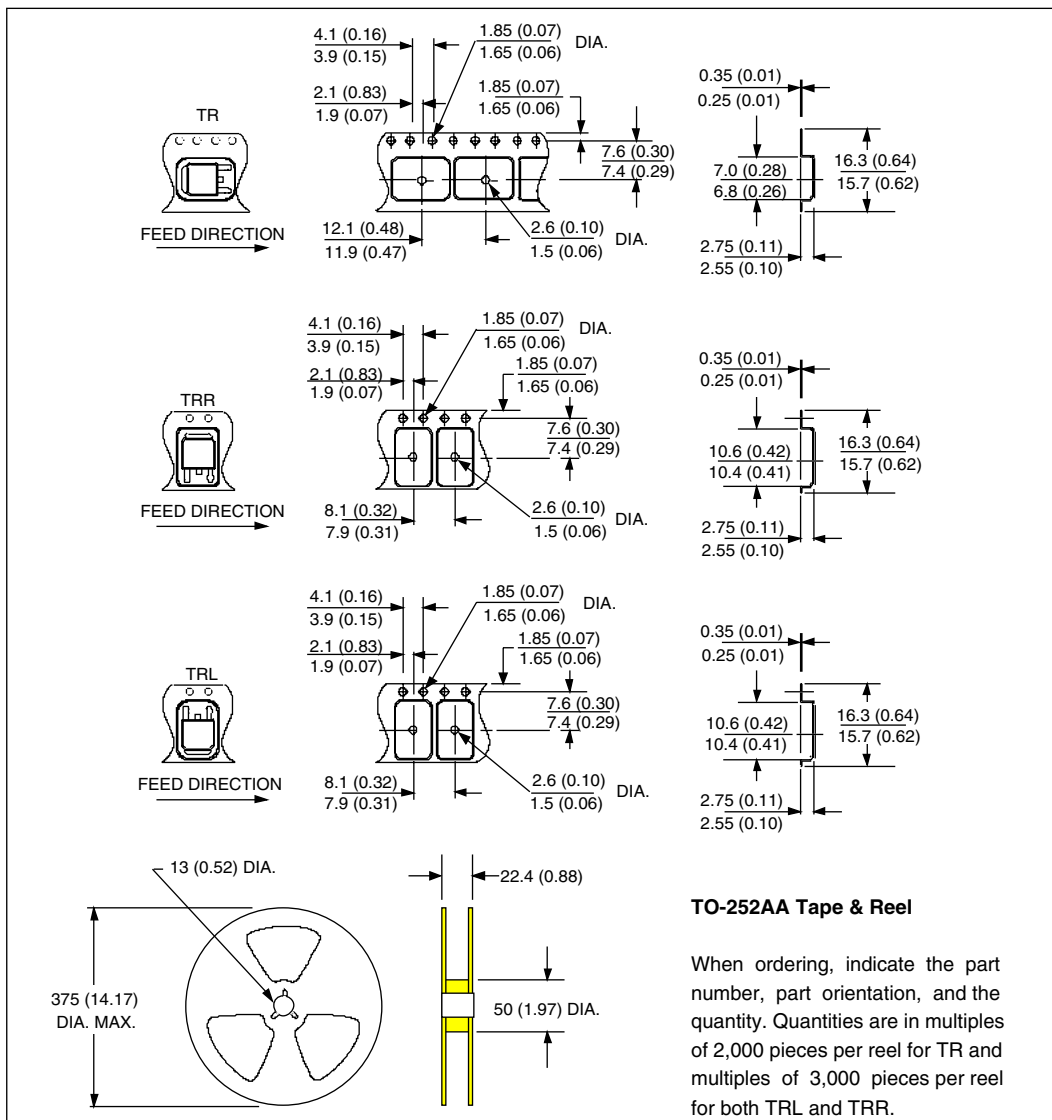
1 - Anode
2 - Cathode
3 - Anode
4 - Cathode

MINIMUM RECOMMENDED FOOTPRINT

Marking Information



Tape & Reel Information



International
IOR Rectifier

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IR CANADA: 15 Lincoln Court, Brampton, Markham, Ontario L6T3Z2. Tel: (905) 453 2200. Fax: (905) 475 8801.
IR GERMANY: Saalburgstrasse 157, 61350 Bad Homburg. Tel: ++ 49 6172 96590. Fax: ++ 49 6172 965933.
IR ITALY: Via Liguria 49, 10071 Borgaro, Torino. Tel: ++ 39 11 4510111. Fax: ++ 39 11 4510220.
IR FAR EAST: K&H Bldg., 2F, 30-4 Nishi-Ikebukuro 3-Chome, Toshima-Ku, Tokyo, Japan 171. Tel: 81 3 3983 0086.
IR SOUTHEAST ASIA: 1 Kim Seng Promenade, Great World City West Tower, 13-11, Singapore 237994. Tel: ++ 65 838 4630.
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Data and specifications subject to change without notice.



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