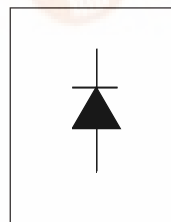


I2126 rev. B 10/99

International **IR** 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}	1000 to 1200	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	-40 to 150	$^\circ C$

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

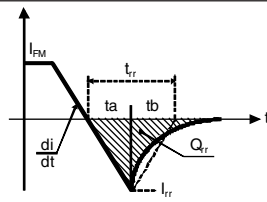
Electrical Specifications

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	$I_F @ 8\text{Apk}$ @ 25A/ μs @ $T_J = 25^\circ\text{C}$
I_{rr} Reverse Recovery Current	4.2	A	
Q_{rr} Reverse Recovery Charge	1	μC	
S Typical Snap Factor tb/ta	0.6	-	



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	
Soldering Temperature	240	°C	for 10 seconds
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

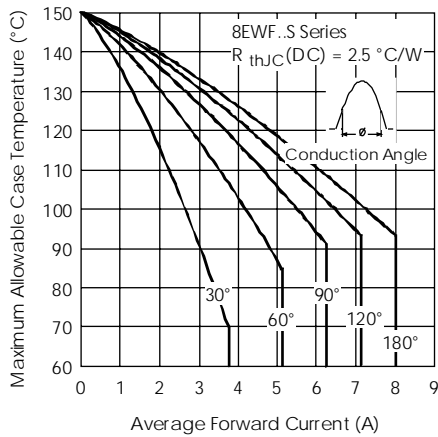


Fig. 1 - Current Rating Characteristics

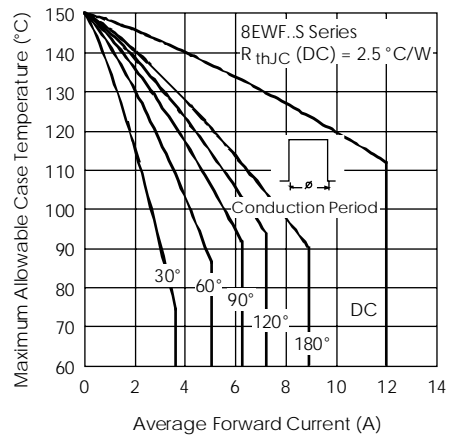


Fig. 2 - Current Rating Characteristics

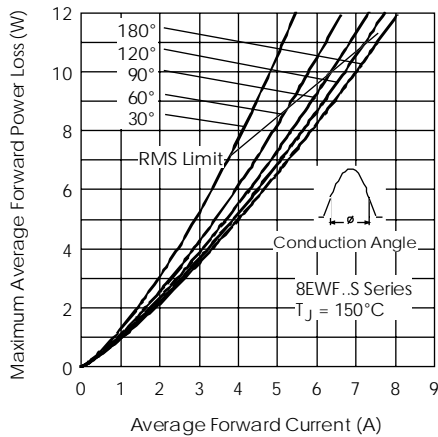


Fig. 3 - Forward Power Loss Characteristics

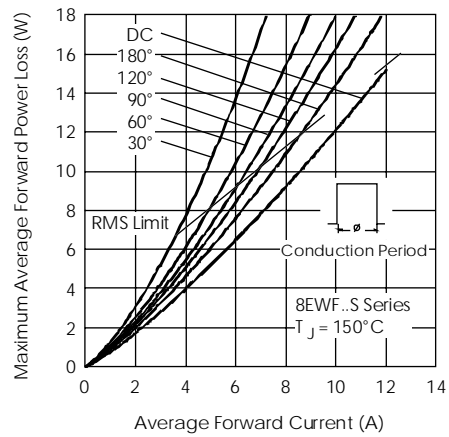


Fig. 4 - Forward Power Loss Characteristics

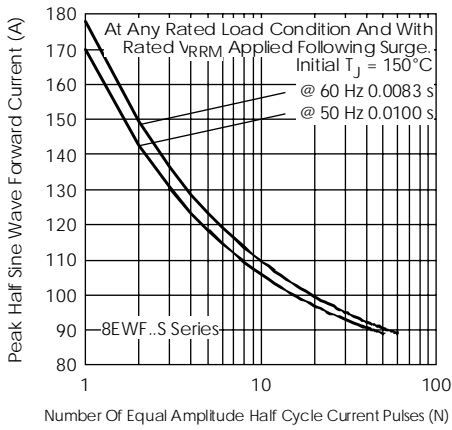


Fig.5-Maximum Non-Repetitive Surge Current

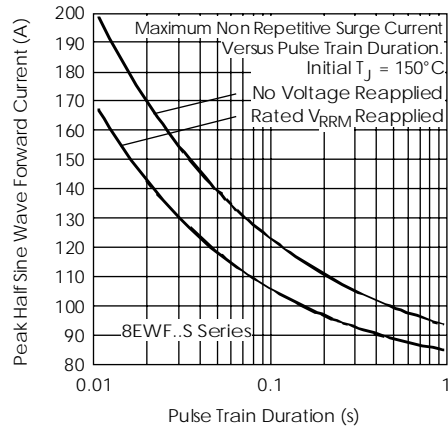


Fig.6-Maximum Non-Repetitive Surge Current

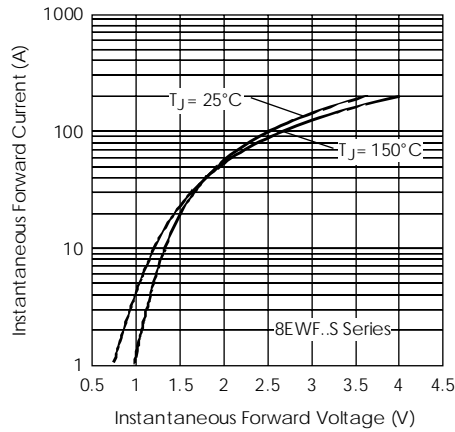


Fig.7-Forward Voltage Drop Characteristics

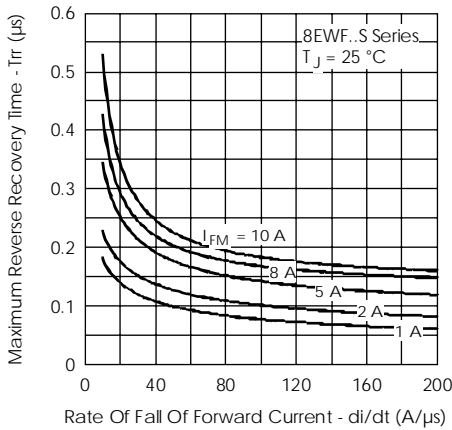


Fig.8- Recovery Time Characteristics, $T_J = 25^\circ\text{C}$

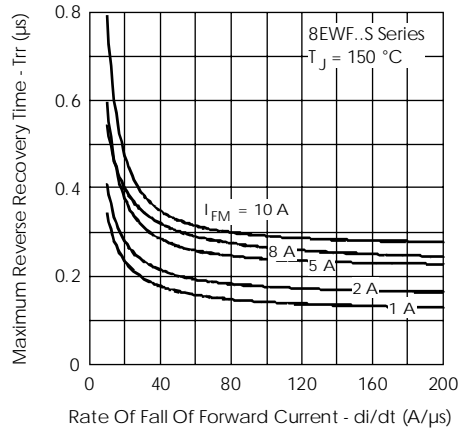


Fig.9- Recovery Time Characteristics, $T_J = 150^\circ\text{C}$

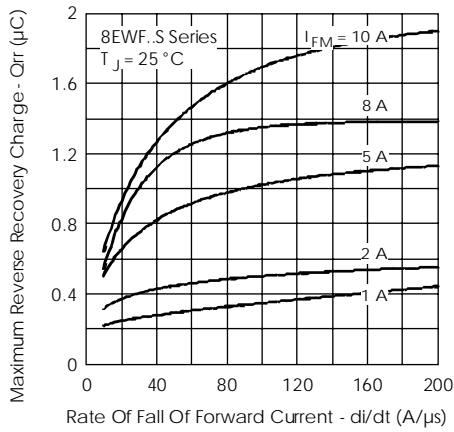


Fig. 10-Recovery Charge Characteristics, T_J=25°C

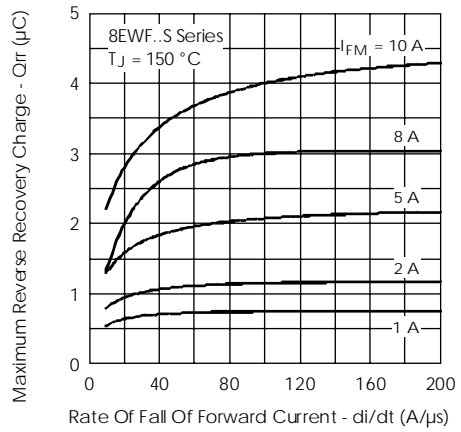


Fig. 11-Recovery Charge Characteristics, T_J=150°C

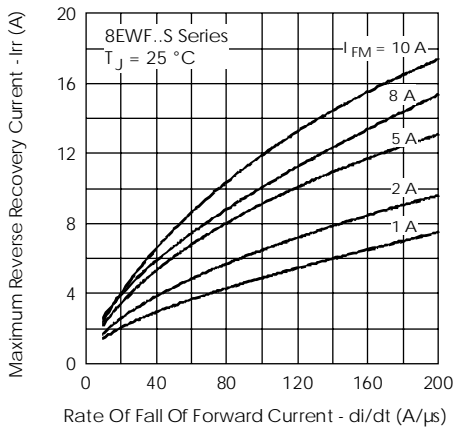


Fig. 12-Recovery Current Characteristics, T_J=25°C

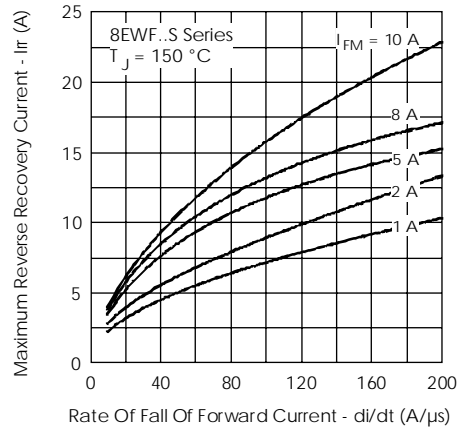


Fig. 13-Recovery Current Characteristics, T_J=150°C

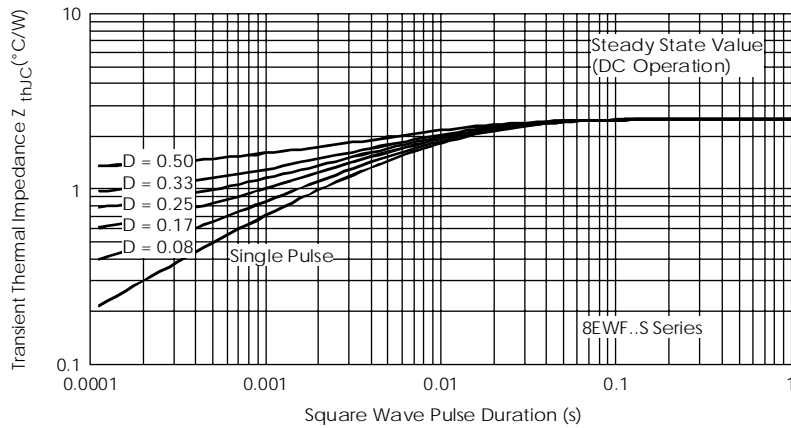


Fig. 14-Thermal Impedance Z_{thJC} Characteristics

Ordering Information Table

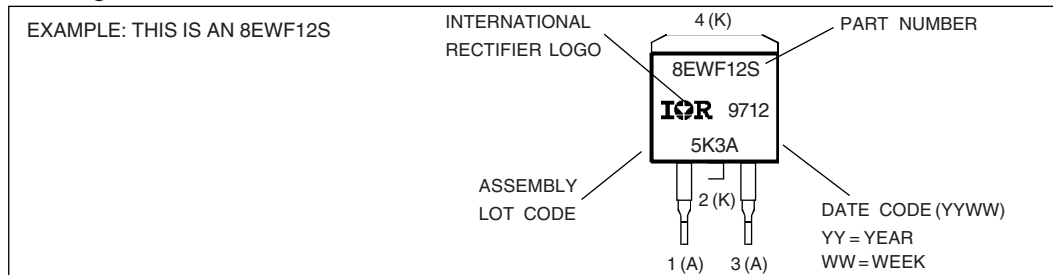
Device Code	
8	E
W	F
12	S
TRL	
(1)	(2)
(3)	(4)
(5)	(6)
(7)	

<p>1 - Current Rating</p> <p>2 - Circuit Configuration: E = Single Diode</p> <p>3 - Package: W = D-Pak</p> <p>4 - Type of Silicon: F = Fast Soft Recovery Rectifier</p> <p>5 - Voltage code: Code x 100 = V_{RRM}</p> <p>6 - S = Surface Mountable</p> <p>7 - Tape and Reel Option: TRL = Left Orientation Reel TRR = Right Orientation Reel</p>	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>10 = 1000V</td> </tr> <tr> <td>12 = 1200V</td> </tr> </table>	10 = 1000V	12 = 1200V
10 = 1000V			
12 = 1200V			

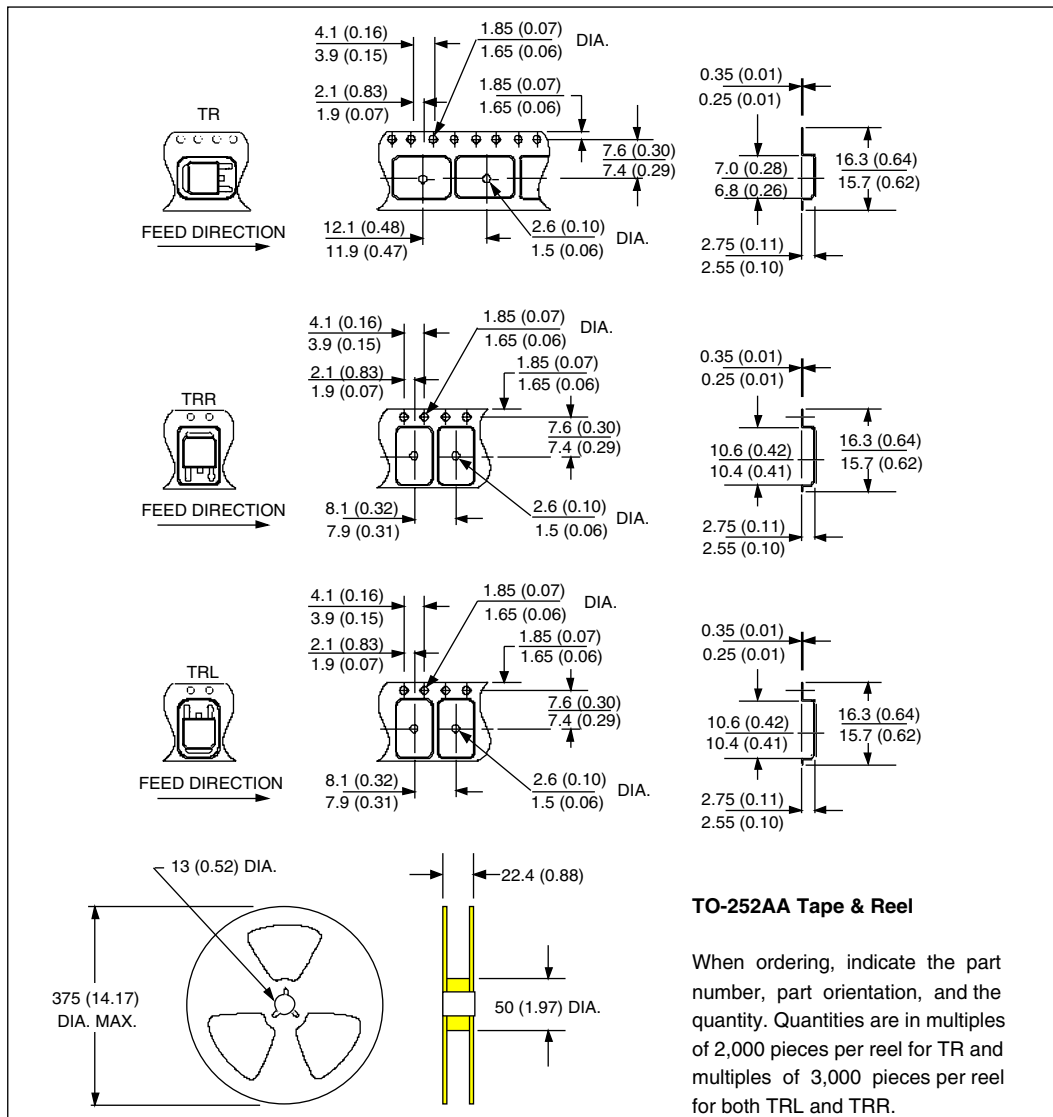
Outline Table

Dimensions in millimeters and (inches)

Marking Information



Tape & Reel Information



8EWF..S *QUIETIR* Series

I2126 rev. B 10/99

International
IOR Rectifier

International
IOR Rectifier

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Data and specifications subject to change without notice.