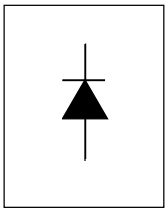
International
IOR Rectifier

*QUIET**IR*** Series
8EWF..S

SURFACE MOUNTABLE FAST SOFT RECOVERY DIODE



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

Description/Features

The 8EWF..S fast soft recovery *QUIET**IR*** 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°C	1.3	V
t_{rr} @ 1A, 100A/µs	80	ns
T_J range	-40 to 150	°C

Package Outline

TO-252AA (D-Pak)

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

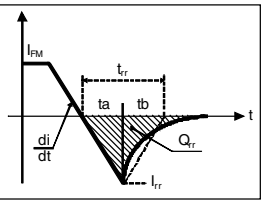
	Parameters	8EWF..S	Units	Conditions
$I_{F(AV)}$	Max. Average Forward Current	8	A	@ T_C = 94°C, 180° conduction half sine wave
I_{FSM}	Max. Peak One Cycle Non-Repetitive	170	A	10ms Sine pulse, rated V_{RRM} applied
	Surge Current	200		10ms Sine pulse, no voltage reapplied
I^2t	Max. I^2t for fusing	144	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°C	
r_t	Forward slope resistance	25.6	mΩ	T_J = 150°C	
$V_{F(TO)}$	Threshold voltage	0.93	V		
I_{RM}	Max. Reverse Leakage Current	0.1	mA	T_J = 25 °C	V_R = rated V_{RRM}
		4		T_J = 150 °C	

Typical Reverse Recovery Characteristics

	Parameters	8EWF..S	Units	Conditions
t_{rr}	Reverse Recovery Time	270	ns	I_F @ 8Apk
I_{rr}	Reverse Recovery Current	4.2	A	@ 25A/µs
Q_{rr}	Reverse Recovery Charge	1	µC	@ T_J = 25°C
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 (650mm^2) 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

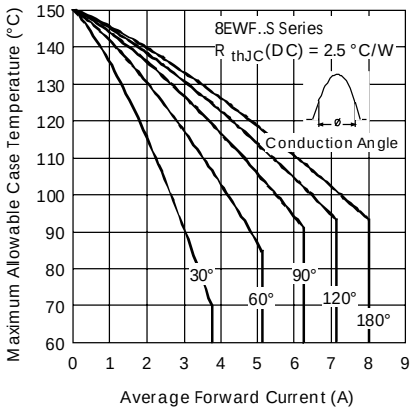


Fig. 1 - Current Rating Characteristics

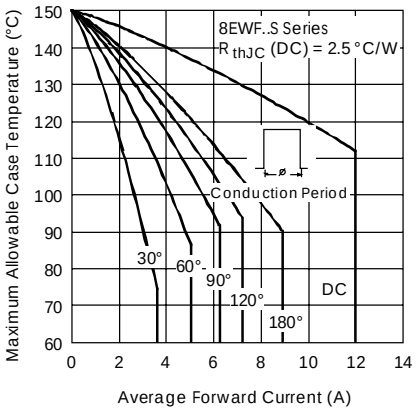


Fig. 2 - Current Rating Characteristics

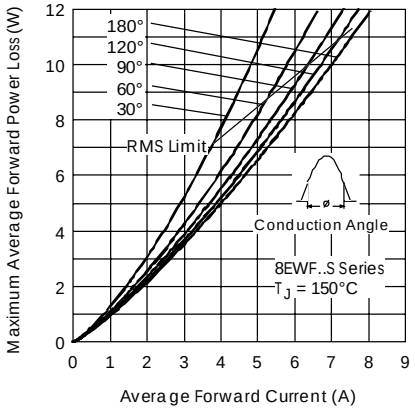


Fig. 3 - Forward Power Loss Characteristics

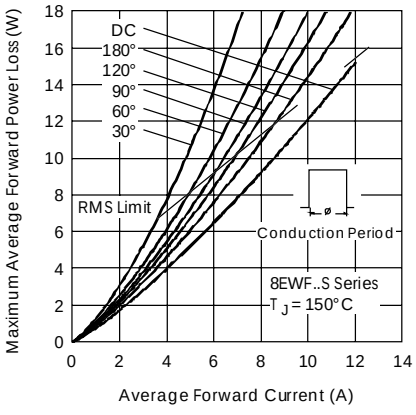


Fig. 4 - Forward Power Loss Characteristics

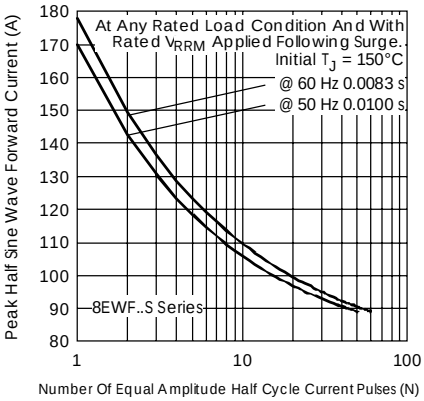


Fig.5-Maximum Non-Repetitive Surge Current

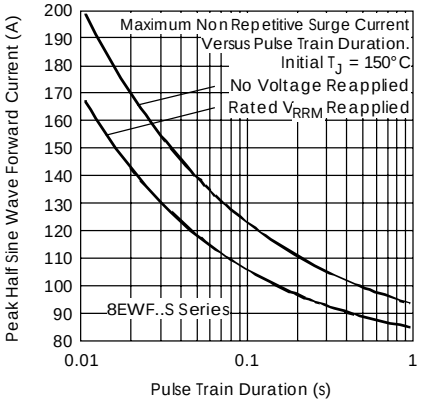


Fig.6-Maximum Non-Repetitive Surge Current

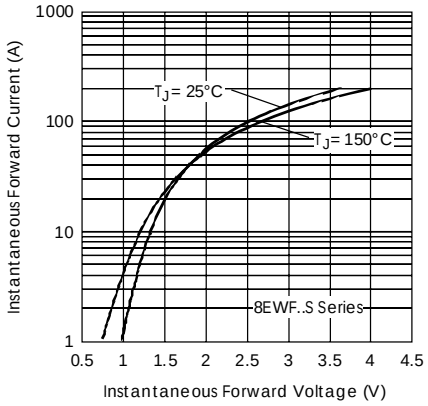


Fig.7-Forward Voltage Drop Characteristics

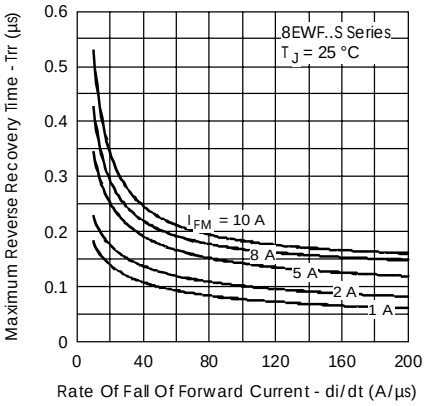


Fig.8-Recovery Time Characteristics, T_J = 25°C

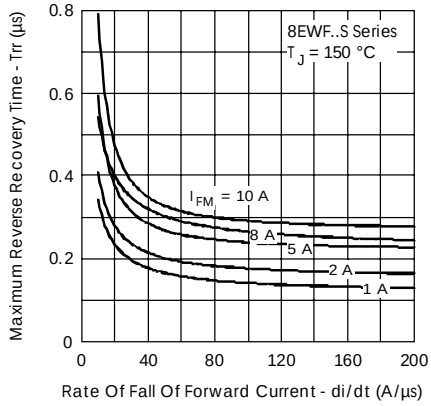


Fig.9-Recovery Time Characteristics, T_J = 150°C

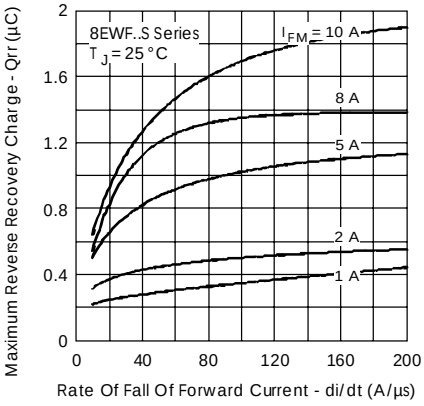


Fig. 10 - Recovery Charge Characteristics, T_J=25°C

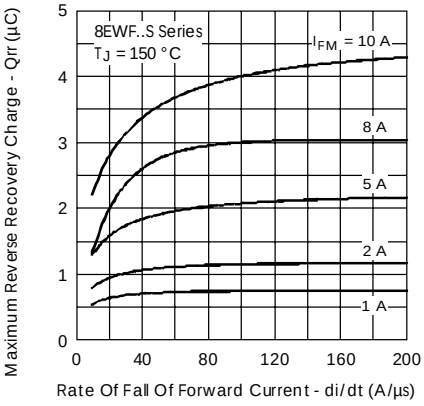


Fig. 11 - Recovery Charge Characteristics, T_J=150°C

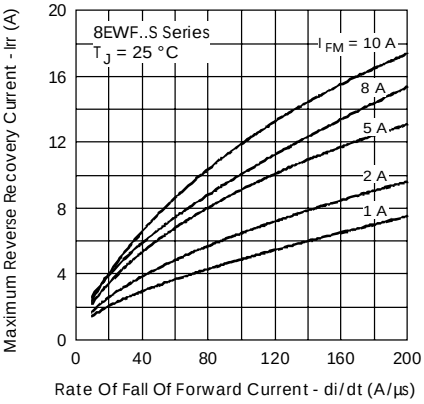


Fig. 12 - Recovery Current Characteristics, T_J=25°C

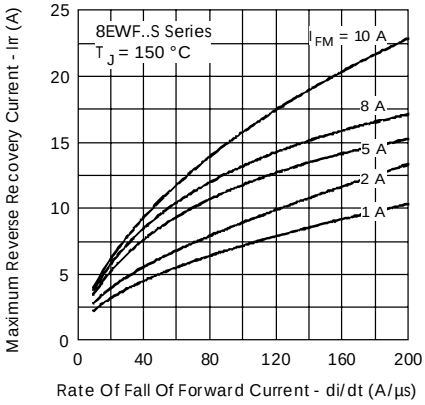


Fig. 13 - Recovery Current Characteristics, T_J=150°C

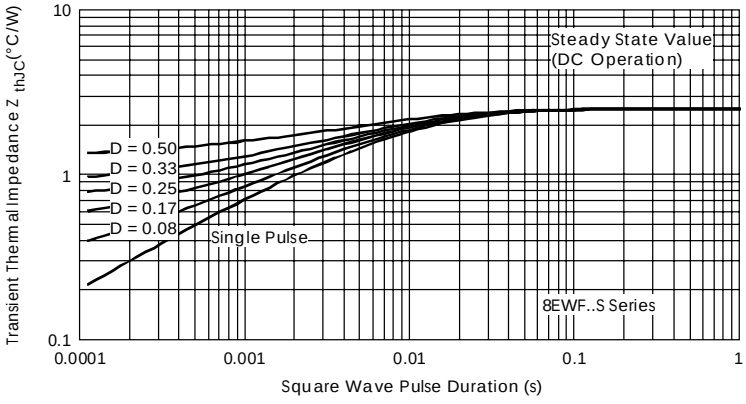


Fig. 14 - Thermal Impedance Z_{thJC} Characteristics

Ordering Information Table

Device Code

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

1 [illegible] x 100 = V

2 [illegible] Rectifier

3 [illegible]

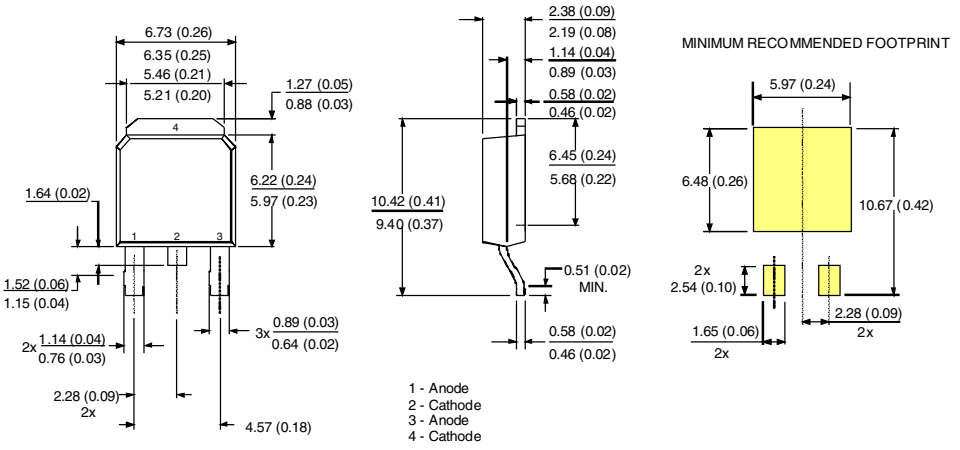
4 [illegible]

5 [illegible]
TRL = Left Orientation Reel
TRR = Right Orientation Reel

RRM
10 = 1000V
12 = 1200V

BASE CATHODE
4
1 2 3
ANODE CATHODE ANODE

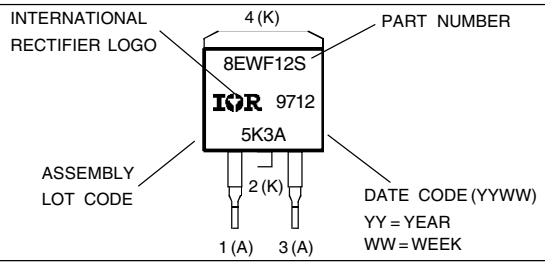
Outline Table



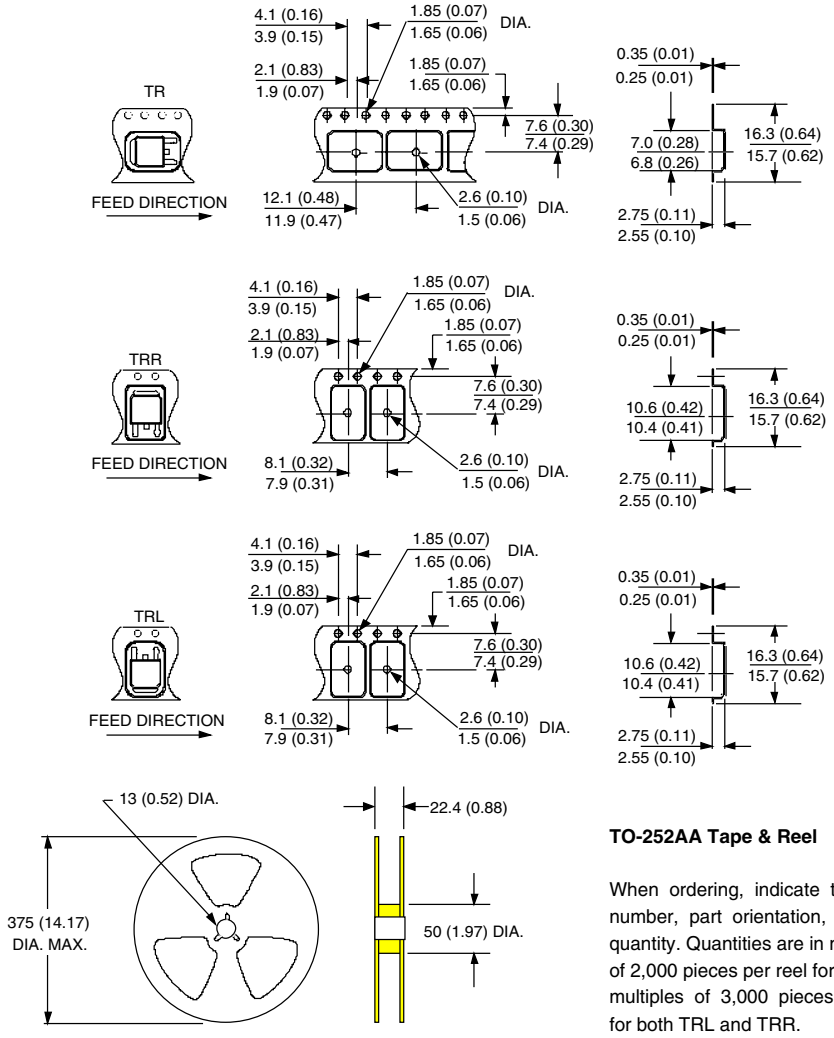
Dimensions in millimeters and (inches)

Marking Information

EXAMPLE: THIS IS AN 8EWF12S



Tape & Reel Information



TO-252AA Tape & Reel

When ordering, indicate the part number, part orientation, and the quantity. Quantities are in multiples of 2,000 pieces per reel for TR and multiples of 3,000 pieces per reel for both TRL and TRR.

International
IOR Rectifier

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IR CANADA: 15 Lincoln Court, Brampton, Markham, Ontario L6T3Z2. Tel: (905) 453 2200. Fax: (905) 475 8801.
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