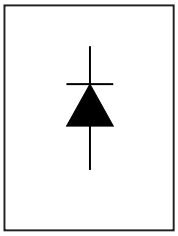
Bulletin I2202 rev. A 03/06

International
IOR Rectifier

*SAFE**IR*** Series
80EPS..PbF

INPUT RECTIFIER DIODE
Lead-Free ("PbF" suffix)



V_F < 1.17V @ 80A
I_{FSM} = 1450A
V_{RRM} = 800 -1200V

Major Ratings and Characteristics

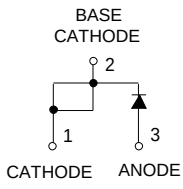
Characteristics	Values	Units
$I_{F(AV)}$ Sinusoidal waveform	80	A
V_{RRM} range	800-1200	V
I_{FSM}	1450	A
V_F @80A, T_J=25°C	1.17	V
T_J	-40 to 150	°C

Description/ Features

The 80EPS..PbF rectifier *SAFE**IR*** series has been optimized for very low forward voltage drop, with moderate leakage. The glass passivation technology used has reliable operation up to 150° C junction temperature. Typical applications are in input rectification and these products are designed to be used with International Rectifier Switches and Output Rectifiers which are available in identical package outlines.

Case Styles





TO-247AC

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
80EPS08PbF	800	900	1
80EPS12PbF	1200	1300	

Absolute Maximum Ratings

	Parameters	80EPS..	Units	Conditions
$I_{F(AV)}$	Max. Average Forward Current	80	A	@ T_C = 100° C, 180° conduction half sine wave
I_{FSM}	Max. Peak One Cycle Non-Repetitive Surge Current	1450	A	10ms Sine pulse, rated V_{RRM} applied
		1500		10ms Sine pulse, no voltage reapplied
I^2t	Max. I^2t for fusing	10500	A^2s	10ms Sine pulse, rated V_{RRM} applied
		14000		10ms Sine pulse, no voltage reapplied
$I^2\sqrt{t}$	Max. $I^2\sqrt{t}$ for fusing	105000	$A^2\sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied

Electrical Specifications

	Parameters	80EPS..	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop	1.17	V	@ 80A, T_J = 25°C	
r_t	Forward slope resistance	3.17	mΩ	T_J = 150°C	
$V_{F(TO)}$	Threshold voltage	0.73	V		
I_{RM}	Max. Reverse Leakage Current	0.1	mA	T_J = 25 °C	V_R = rated V_{RRM}
		1.0		T_J = 150 °C	

Thermal-Mechanical Specifications

	Parameters		80EPS..	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		0.35	°C/W	DC operation
R_{thJA}	Max. Thermal Resistance Junction to Ambient		40	°C/W	
R_{thCS}	Typical Thermal Resistance, Case to Heatsink		0.2	°C/W	Mounting surface, smooth and greased
wt	Approximate Weight		6 (0.21)	g (oz.)	
T	Mounting Torque	Min.	6 (5)	Kg-cm (lbf-in)	
		Max.	12 (10)		
	Case Style		TO-247AC		JEDEC
	Marking Device		80EPS12		

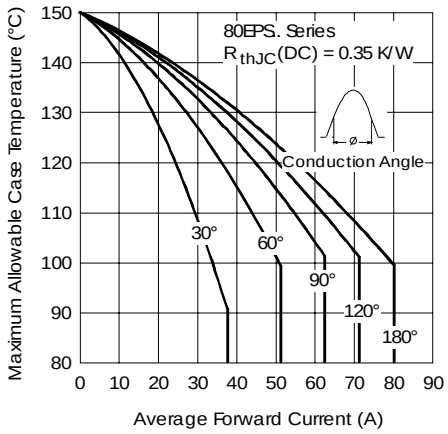


Fig. 1 - Current Rating Characteristics

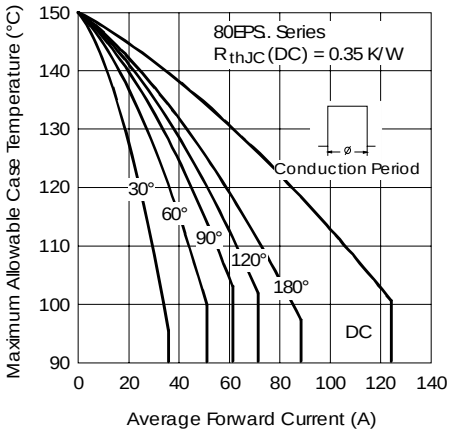


Fig. 2 - Current Rating Characteristics

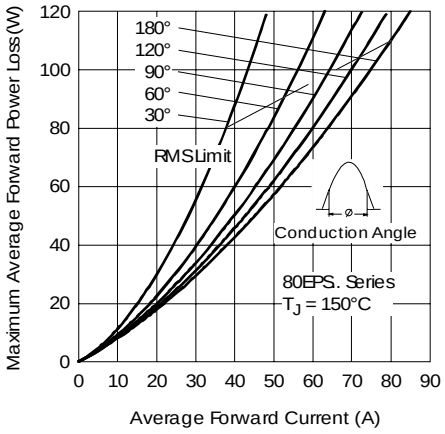


Fig. 3 - Forward Power Loss Characteristics

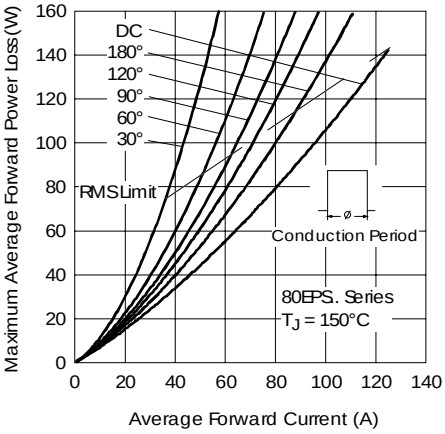


Fig. 4 - Forward Power Loss Characteristics

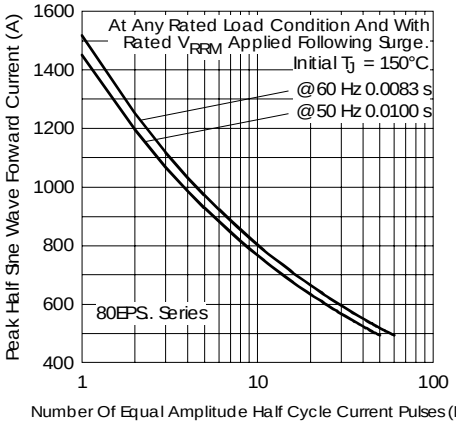


Fig. 5 - Maximum Non-Repetitive Surge Current

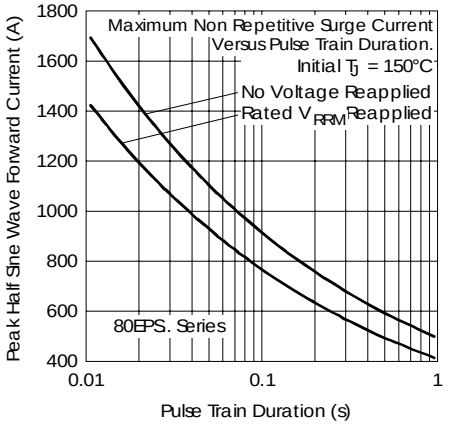


Fig. 6 - Maximum Non-Repetitive Surge Current

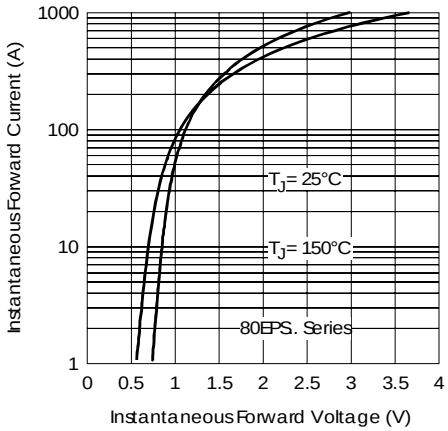


Fig. 7 - Forward Voltage Drop Characteristics

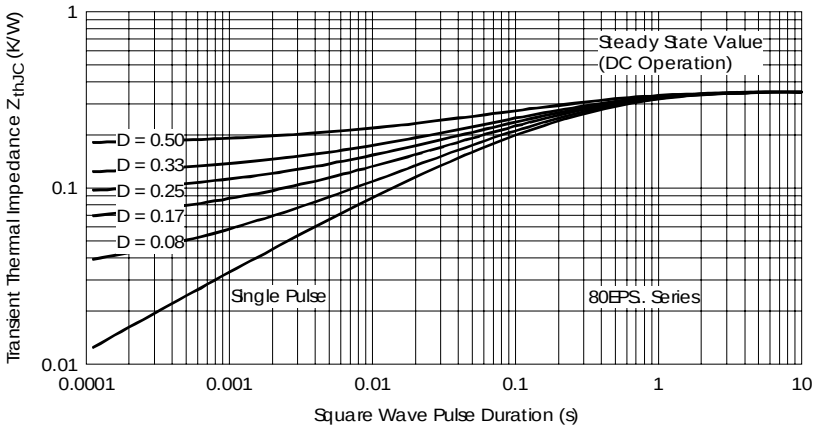
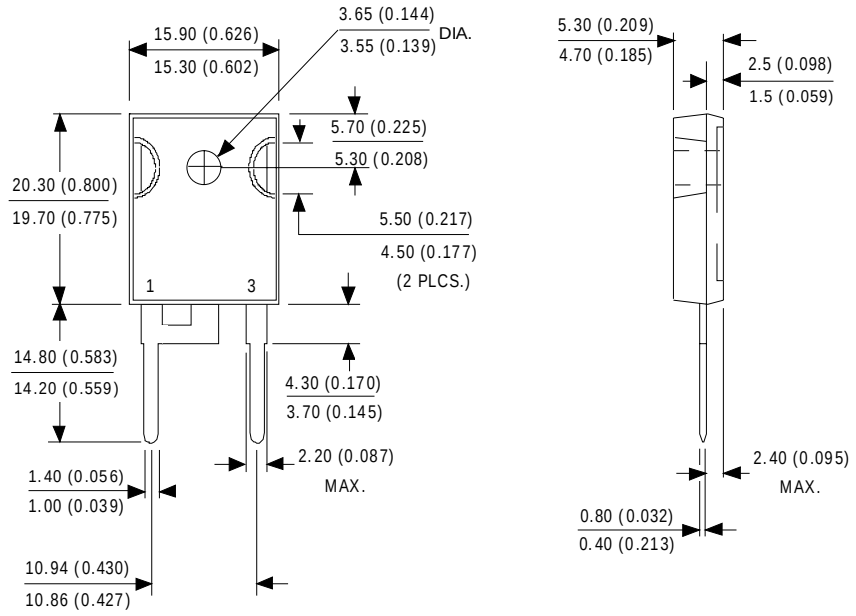


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics

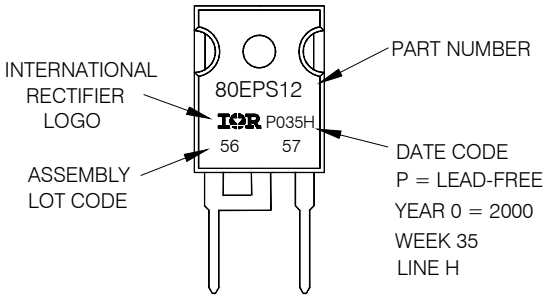
Outline Table



Dimensions in millimeters and inches

Marking Information

EXAMPLE: THIS IS A 80EPS12
WITH ASSEMBLY
LOT CODE 5657
ASSEMBLED ON WW 35, 2000
IN ASSEMBLY LINE "H"



Ordering Information Table

Device Code

80	E	P	S	12	PbF
1	2	3	4	5	6

1 - Current Rating (80 = 80A)

2 - Circuit Configuration:
E = Single Diode

3 - Package:
P = TO-247AC (Modified)

4 - Type of Silicon:
S = Standard Recovery Rectifier

5 - Voltage Ratings
- 12 = 1200V
- 08 = 800V

6 -
- none = Standard Production
- PbF = Lead-Free

Data and specifications subject to change without notice.
This product has been designed and qualified for Industrial Level and Lead-Free.
Qualification Standards can be found on IR's Web site.

International IOR Rectifier

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