


INPUT RECTIFIER DIODE

	$I_{F(RMS)} = 135A$ $V_F < 1.15V @ 70A$ $I_{FSM} = 900A$ $V_{RRM} 800 \text{ to } 1200V$
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Major Ratings and Characteristics



Characteristics	70EPS..	Units
$I_{F(AV)}$ Sine waveform @ $T_C = 103^\circ C$	70	A
$I_{F(RMS)}$	135	A
V_{RRM} range(*)	800 to 1200	V
I_{FSM}	900	A
V_F @ 70A, $T_J = 25^\circ C$	1.12	V
T_J range	-40 to 150	$^\circ C$

Description/ Features

The 70EPS.. rectifier **SAFEIR** 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.

Available in the new **PowIRtab™** package, this new series is suitable for a large range of applications combining excellent die to footprint ratio and sturdiness connectivity for use in high current environments.

Case Styles	
<p>70EPS..</p> 	<p>70EPS..J</p> 

(*) for higher voltage up to 1600V contact factory

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
70EPS08	800	900	5
70EPS12	1200	1300	

Absolute Maximum Ratings

Parameters	70EPS..	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current	70	A	@ $T_C = 103^\circ\text{C}$, 180° conduction half sine wave
$I_{F(RMS)}$	135	A	
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current	800	A	10ms Sine pulse, rated V_{RRM} applied
	950		10ms Sine pulse, no voltage reapplied
I^2t Max. I^2t for fusing	3200	A^2s	10ms Sine pulse, rated V_{RRM} applied
	4500		10ms Sine pulse, no voltage reapplied
$I^2\sqrt{t}$ Max. $I^2\sqrt{t}$ for fusing	32000	$A^2\sqrt{s}$	$t = 0.1$ to 10ms, no voltage reapplied

Electrical Specifications

Parameters	70EPS..	Units	Conditions
V_{FM} Max. Forward Voltage Drop	1.12	V	@ 70A, $T_J = 25^\circ\text{C}$
r_t Forward slope resistance	3.075	m Ω	$T_J = 150^\circ\text{C}$
$V_{F(TO)}$ Threshold voltage	0.829	V	
I_{RM} Max. Reverse Leakage Current	0.1	mA	$T_J = 25^\circ\text{C}$
	5.0		$T_J = 150^\circ\text{C}$

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

Thermal-Mechanical Specifications

Parameters	70EPS..	Units	Conditions
T_J Max. Junction Temperature Range	-40 to 150	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-40 to 150	$^\circ\text{C}$	
R_{thJC} Max. Thermal Resistance Junction to Case	0.35	$^\circ\text{C/W}$	DC operation
R_{thJA} Max. Thermal Resistance Junction to Ambient	40	$^\circ\text{C/W}$	
R_{thCS} Typical Thermal Resistance, Case to Heatsink	0.2	$^\circ\text{C/W}$	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(12)	
Case Style	<i>PowerTab™</i>		

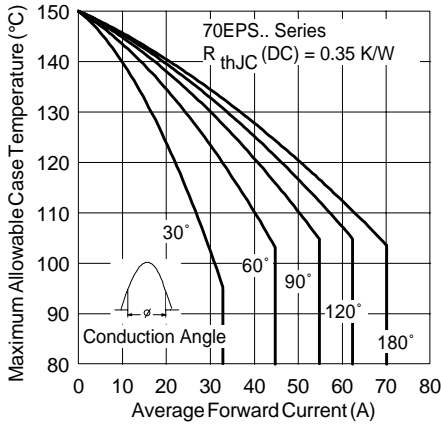


Fig. 1 - Current Rating Characteristics

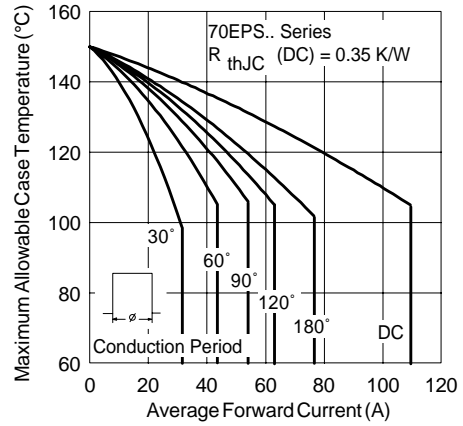


Fig. 2 - Current Rating Characteristics

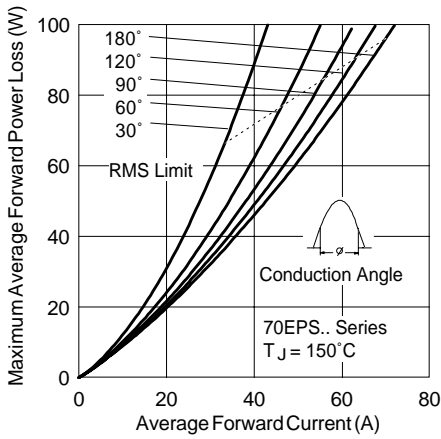


Fig. 3 - Forward Power Loss Characteristics

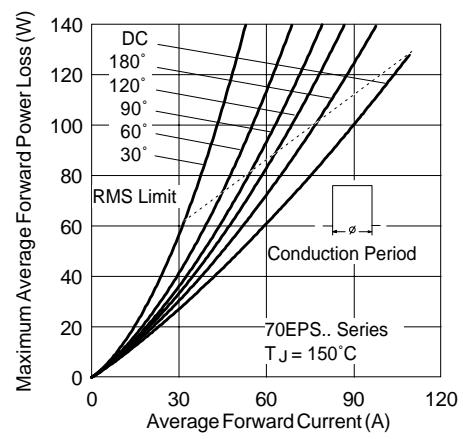


Fig. 4 - Forward Power Loss Characteristics

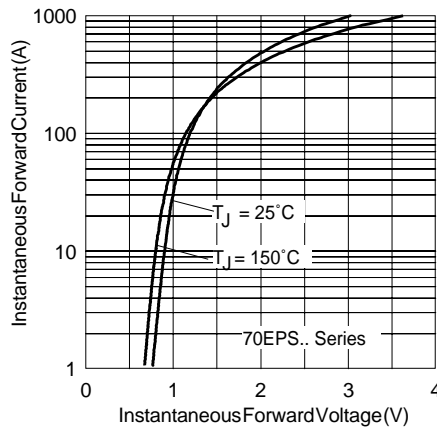


Fig. 5 - Forward Voltage Drop Characteristics

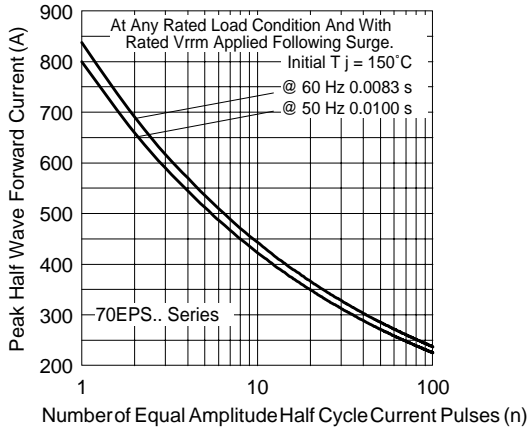


Fig. 5 - Maximum Non-Repetitive Surge Current

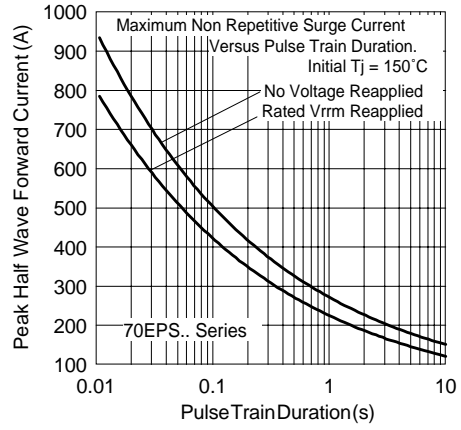


Fig. 6 - Maximum Non-Repetitive Surge Current

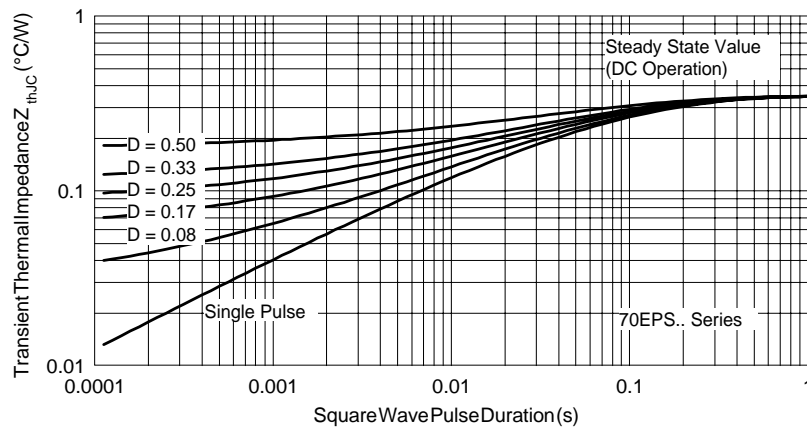
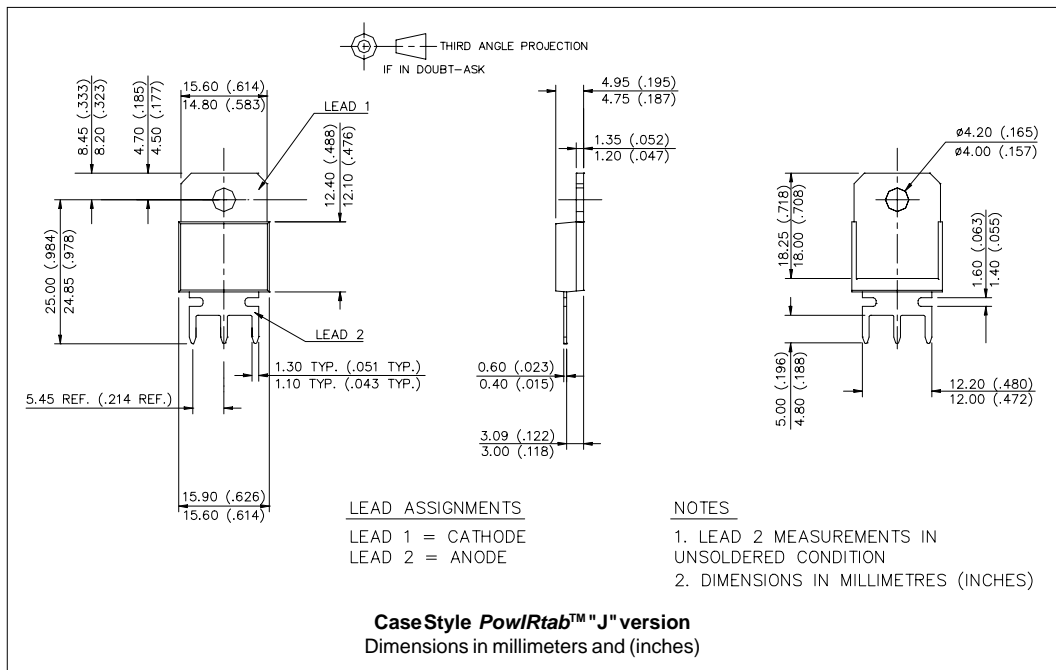
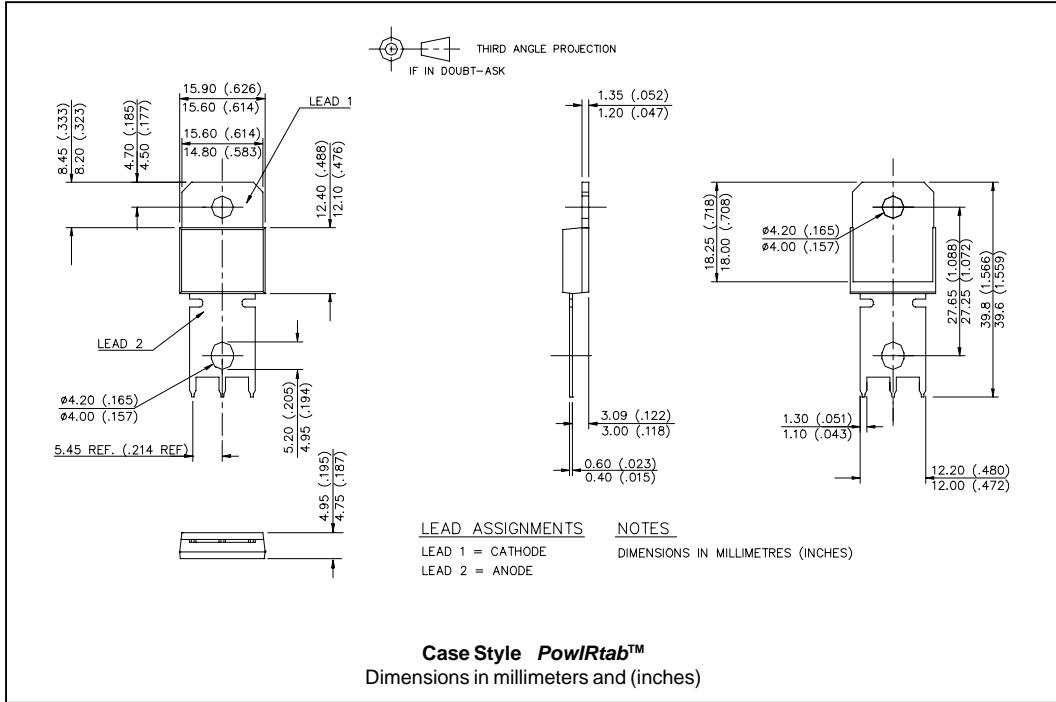


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics

Outline Table



Ordering Information Table

Device Code	
70	E P S 12
(1)	(2) (3) (4) (5)
1	- Current Rating
2	- Circuit Configuration: E = Single Diode
3	- Package: P = PowIRtab™
4	- Type of Silicon: S = Standard Recovery Rectifier
5	- Voltage code: Code x 100 = V _{RRM}
	08 = 800V 12 = 1200V

Base Cathode
2

1 Anode 3 Anode

(*) for higher voltage up to 1600V contact factory

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