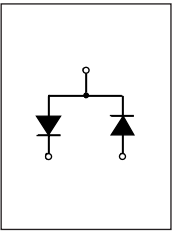


International
IOR Rectifier

SAFEIR Series
30DPS..

GLASS PASSIVATED
PLASTIC RECTIFIER

- 150° C T_J operation
- Glass Passivated chip junction
- Low forward voltage drop
- High Current Capabilities
- High Surge Current Capabilities
- SMD Series Available



$I_{F(AV)}$ = 30 Amp

I_{FSM} = 300 Amp

V_{RRM} up to 1200V

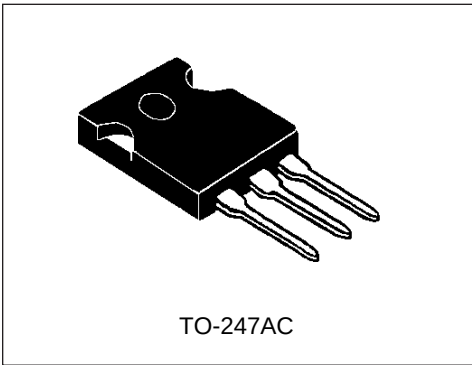
Description/Features

The 30DPS 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. Typical applications are in input rectification.

Major Ratings and Characteristics

Characteristics	30DPS..	Units
$I_{F(AV)}$ Sinusoidal waveform	30	A
V_{RRM}	800 to 1200	V
I_{FSM}	300	A
V_{FM} @ 30 A _{pk} , T _J = 25°C	1.15	V
T _J	-40 to 150	°C

Package Outline



TO-247AC

30DPS.. *SAFEIR* Series

Bulletin I2103 rev. B 07/97

International
IOR Rectifier

Voltage Ratings

Type number	Code -	V_{RRM} , maximum peak reverse voltage V	V_{RSM} , maximum peak reverse voltage V	I_{RRM} 150°C mA
30DPS..	08	800	900	1
	12	1200	1300	

Provide terminals coating for voltages above 1200V

Absolute Maximum Ratings

Parameters	30DPS..	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current	30	A	@ $T_C = 90^\circ\text{C}$, 180° conduction half sine wave
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current Per Junction	250	A	10ms Sine pulse, rated V_{RRM} applied
	300		10ms Sine pulse, no voltage reappplied
I^2t Max. I^2t for fusing	316	A^2s	10ms Sine pulse, rated V_{RRM} applied
	442		10ms Sine pulse, no voltage reappplied
$I^2\sqrt{t}$ Max. $I^2\sqrt{t}$ for fusing	4420	$A^2\sqrt{s}$	$t = 0.1$ to 10ms, no voltage reappplied

Electrical Specifications

Parameters	30DPS..	Units	Conditions
V_{FM} Max. Forward Voltage Drop	1.15	V	@ 30A, $T_J = 25^\circ\text{C}$
r_t Forward slope resistance	9.28	mΩ	$T_J = 150^\circ\text{C}$
$V_{F(TO)}$ Threshold voltage	0.78	V	
I_{RM} Max. Reverse Leakage Current	0.1	mA	$T_J = 25^\circ\text{C}$
	1.0		$T_J = 150^\circ\text{C}$

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

Thermal-Mechanical Specifications

Parameters	30DPS..	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 Ambient	40	$^\circ\text{C/W}$	
R_{thJA} Max. Thermal Resistance Junction to Case	0.95	$^\circ\text{C/W}$	DC operation, per junction
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 (10)	
Case Style	TO-247AC		JEDEC

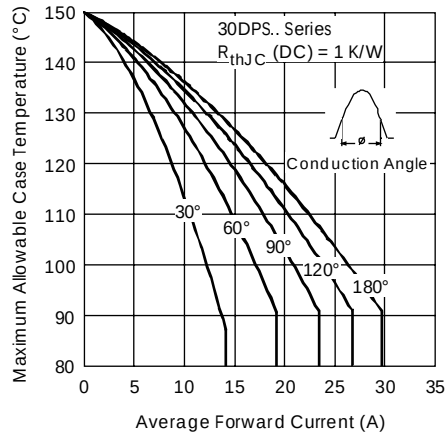


Fig.1-CurrentRatingCharacteristics(PerJunction)

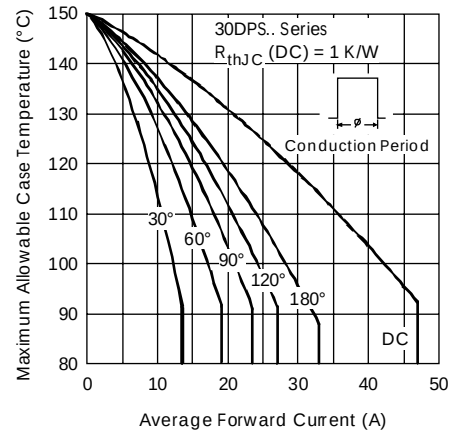


Fig.2-CurrentRatingCharacteristics(PerJunction)

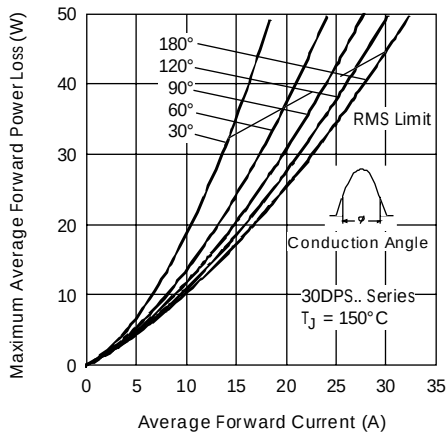


Fig.3-ForwardPowerLossCharacteristics (PerJunction)

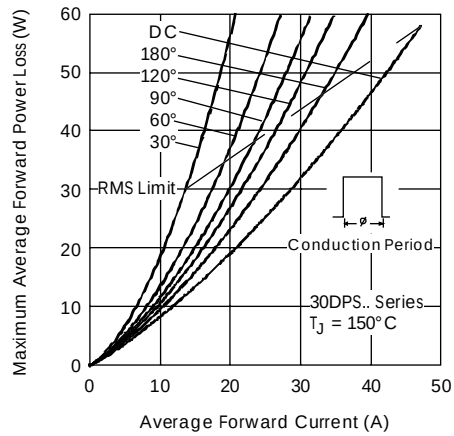


Fig.4-ForwardPowerLossCharacteristics (PerJunction)

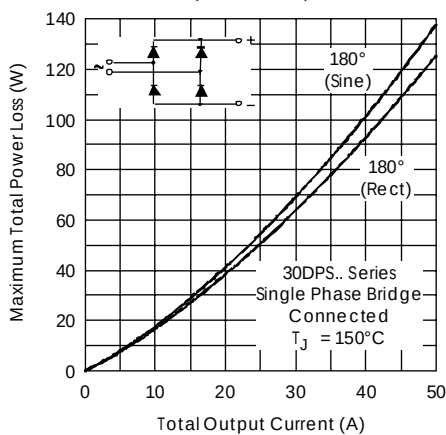


Fig.5-ForwardPowerLossCharacteristics

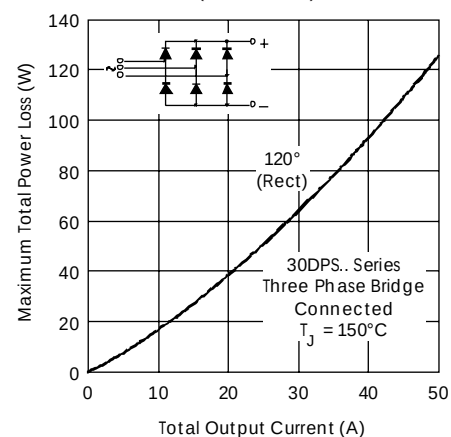


Fig.6-ForwardPowerLossCharacteristics

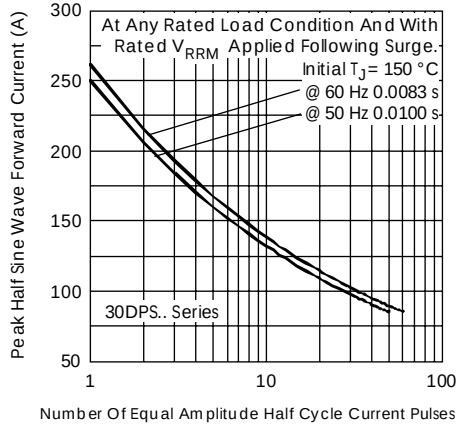


Fig. 7 - Maximum Non-Repetitive Surge Current (Per Junction)

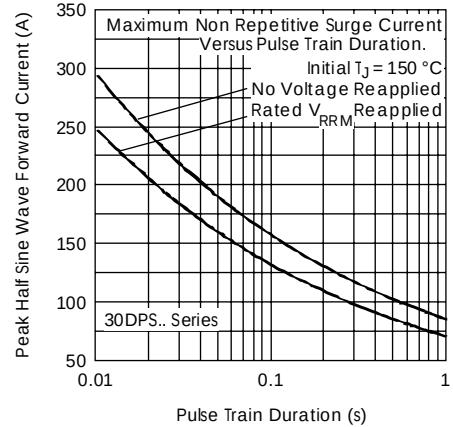


Fig. 8 - Maximum Non-Repetitive Surge Current (Per Junction)

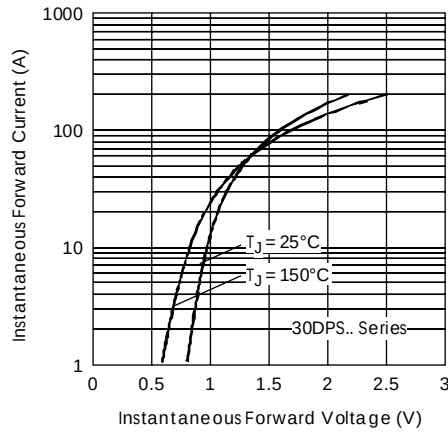


Fig. 9 - Forward Voltage Drop Characteristics (Per Junction)

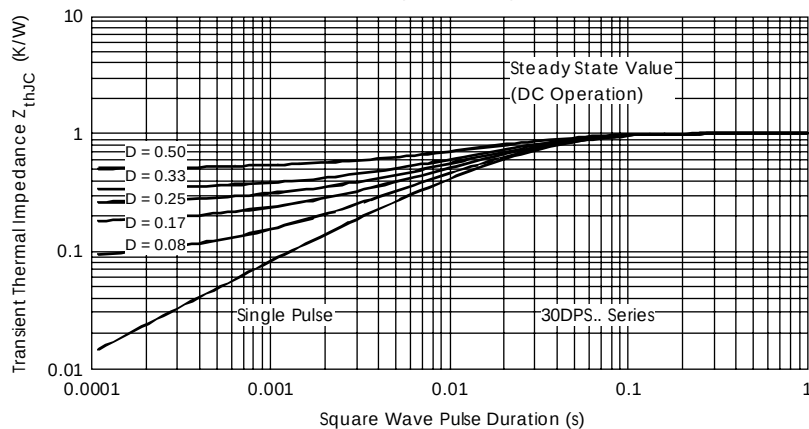
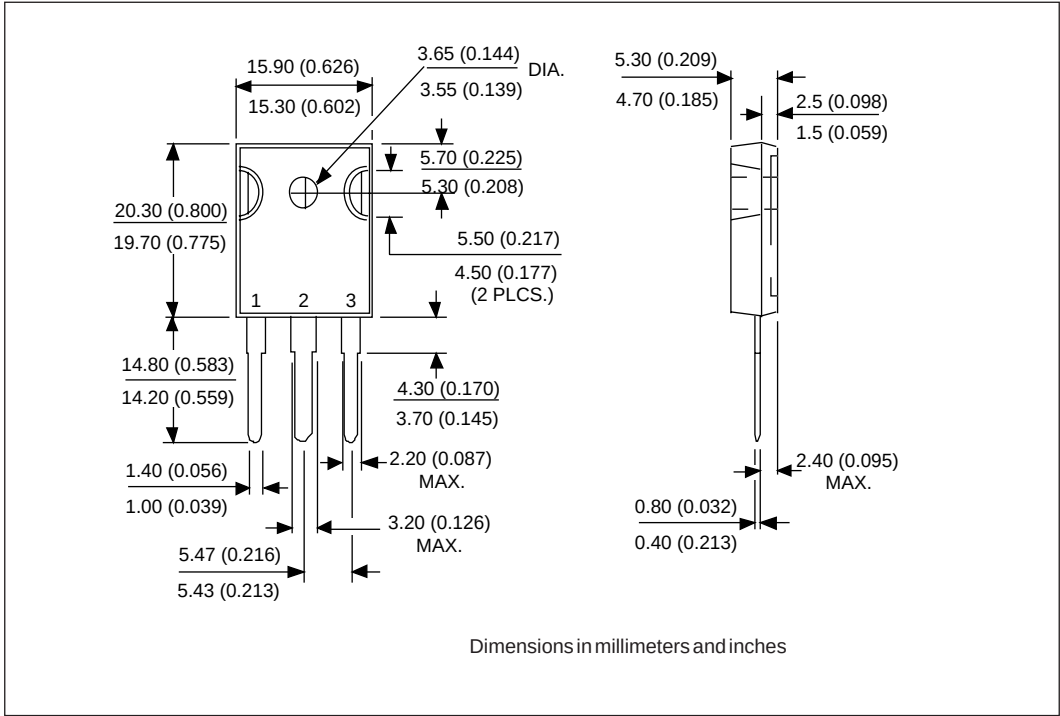


Fig. 10 - Thermal Impedance Z_{thJC} Characteristics (Per Junction)

Ordering Information Table



Ordering Information Table

