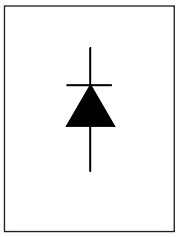
Bulletin I2120 rev. A 07/97

International
IOR Rectifier

*SAFE**IR*** Series
10ETS..

INPUT RECTIFIER DIODE



V_F < 1.1V @ 10A
I_{FSM} = 200A
V_{RRM} 800 to 1600V

Description/Features

The 10ETS.. 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.
The ***High Reverse Voltage*** range available allows design of input stage primary rectification with ***Outstanding Voltage Surge*** capability.
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.

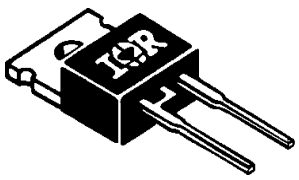
Output Current in Typical Applications

Applications	Single-phase Bridge	Three-phase Bridge	Units
Capacitive input filter T_A=55°C, T_J=125°C common heatsink of 1°C/W	12.0	16.0	A

Major Ratings and Characteristics

Characteristics	10ETS..	Units
$I_{F(AV)}$ Sinusoidal waveform	10	A
V_{RRM}	800 to 1600	V
I_{FSM}	200	A
V_F @10A, T_J=25°C	1.1	V
T_J	-40 to 150	℃

Package Outline



TO-220AC

Also available in D-pak (8EWS Series)

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
10ETS08	800	900	0.5
10ETS12	1200	1300	
10ETS16	1600	1700	

Provide terminal coating for voltages above 1200V

Absolute Maximum Ratings

	Parameters	10ETS..	Units	Conditions
$I_{F(AV)}$	Max. Average Forward Current	10	A	@ T_C = 105°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	130	A^2s	10ms Sine pulse, rated V_{RRM} applied
		145		10ms Sine pulse, no voltage reapplied
$I^2\sqrt{t}$	Max. $I^2\sqrt{t}$ for fusing	1450	$A^2\sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied

Electrical Specifications

	Parameters	10ETS..	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop	1.1	V	@ 10A, T_J = 25°C	
r_t	Forward slope resistance	20	mΩ	T_J = 150°C	
$V_{F(TO)}$	Threshold voltage	0.82	V		
I_{RM}	Max. Reverse Leakage Current	0.05	mA	T_J = 25 °C	V_R = rated V_{RRM}
		0.50		T_J = 150 °C	

Thermal-Mechanical Specifications

	Parameters		10ETS..	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		2.5	°C/W	DC operation
R_{thJA}	Max. Thermal Resistance Junction to Ambient		62	°C/W	
R_{thCS}	Typical Thermal Resistance, Case to Heatsink		0.5	°C/W	Mounting surface , smooth and greased
wt	Approximate Weight		2(0.07)	g(oz.)	
T	Mounting Torque	Min.	6(5)	Kg-cm (lbf-in)	
		Max.	12(10)		
	Case Style		TO-220AC		

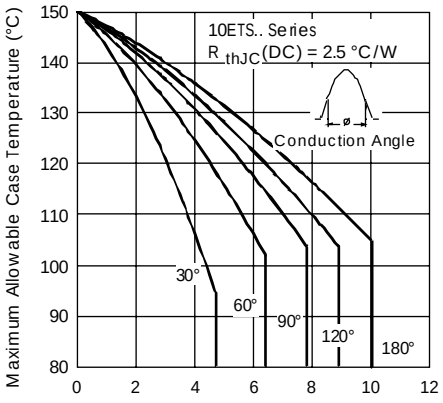


Fig. 1 - Current Rating Characteristics

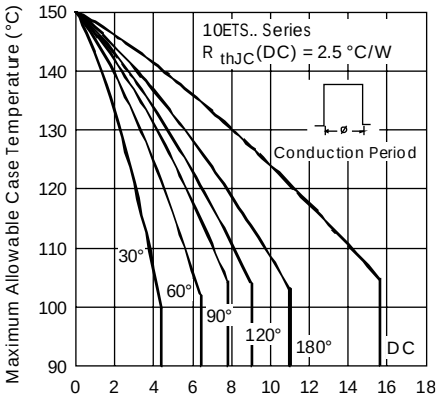


Fig. 2 - Current Rating Characteristics

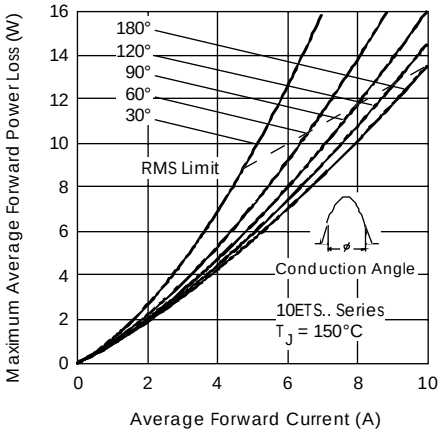


Fig. 3 - Forward Power Loss Characteristics

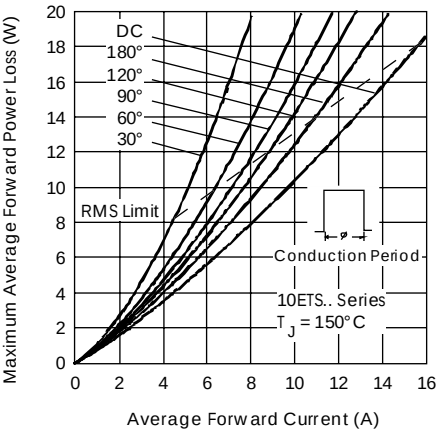


Fig. 4 - Forward Power Loss Characteristics

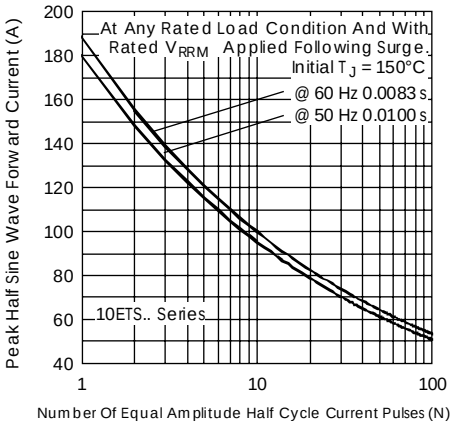


Fig. 5 - Maximum Non-Repetitive Surge Current

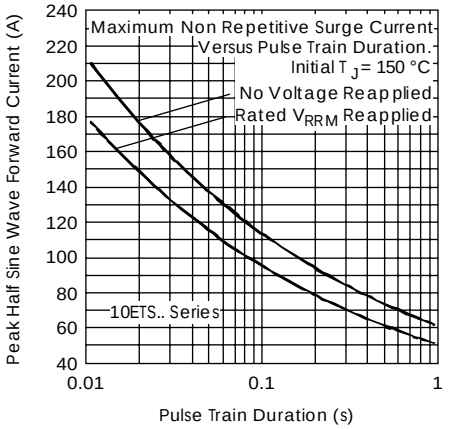


Fig. 6 - Maximum Non-Repetitive Surge Current

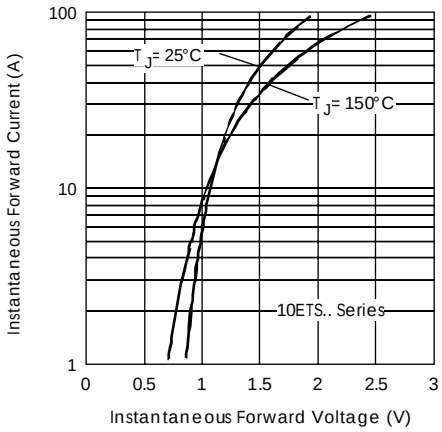


Fig.8-Forward Voltage Drop Characteristics

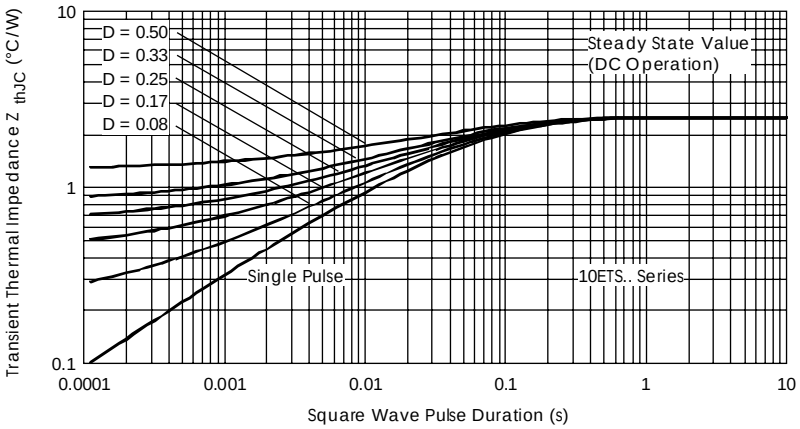
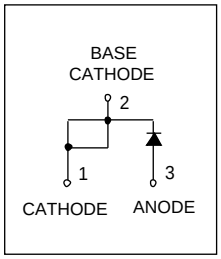


Fig.9-Thermal Impedance Z_{thJC} Characteristics

Ordering Information Table

Device Code

10	E	T	S	16
①	②	③	④	⑤



1 - Current Rating

2 - Circuit Configuration:
E = Single Diode

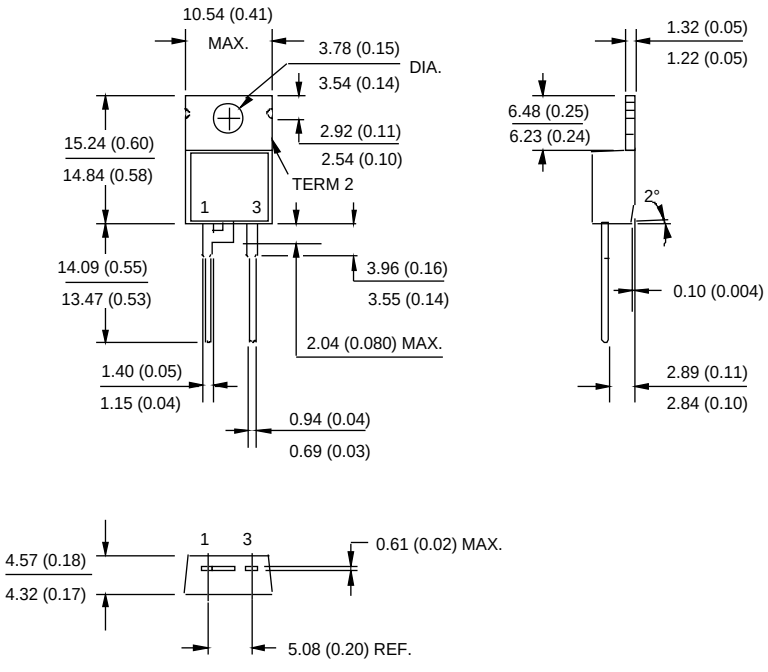
3 - Package:
T = TO-220AC

4 - Type of Silicon:
S = Standard Recovery Rectifier

5 - Voltage code: Code x 100 = V_{RRM}

08	=	800V
12	=	1200V
16	=	1600V

Outline Table



Dimensions in millimeters and inches