

10CTF & 10JTF SERIES

10 Amp Ultrafast Recovery Dual Center Tap Rectifiers

Major Ratings and Characteristics

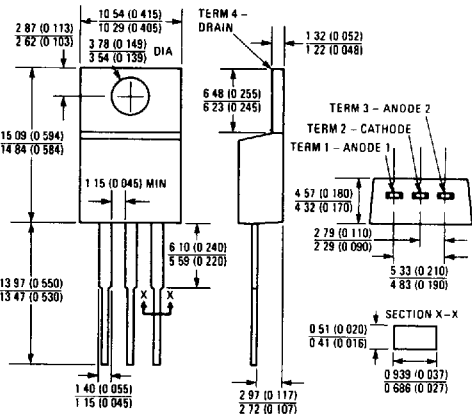
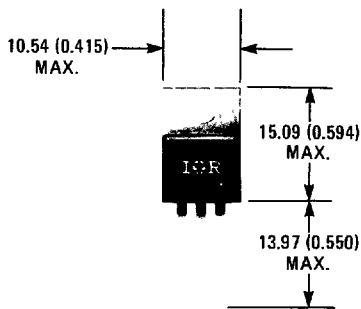
	10CTF10 10CTF20 10JTF10 10JTF20	10CTF30 10CTF40 10JTF30 10JTF40	Units
I_o	10		A
I_{FSM}	@ 50 Hz	80	A
	@ 60 Hz	84	
V_{RWM}	100 & 200	300 & 400	V
T_J	-40 ~ 150		°C

Description/Features

The 10CTF and 10JTF series of ultrafast recovery rectifiers are rated at 10 amperes and together provide both positive and negative output. They are designed for applications in switching and inverter power supplies and as free wheeling diodes (both sides tied together).

- Ultrafast 35 and 45 nanosecond recovery time
- 150°C operating junction temperature
- Popular TO-220 package
- Glass passivated junctions
- Reverse voltage to 400V
- Low forward voltage
- Supplied in both positive and negative output versions for single-phase bridge applications.

CASE STYLE AND DIMENSIONS



Conforms to JEDEC Outline TO-220AB
Dimensions in Millimeters and (Inches).

VOLTAGE RATINGS

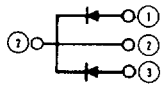
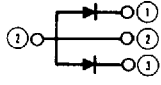
Part Numbers	V_{RRM} – Max. Repetitive Peak Reverse Voltage (V)	V_{RSM} – Max. Non-Repetitive Peak Reverse Voltage (V)
10CTF10	100	110
10JTF10		
10CTF20	200	220
10JTF20		
10CTF30	300	330
10JTF30		
10CTF40	400	440
10JTF40		

ELECTRICAL SPECIFICATIONS

		10CTF10 10CTF20 10JTF10 10JTF20	10CTF30 10CTF40 10JTF30 10JTF40	Units	Conditions
I_O	Max. average output current from center tap circuit	10	10	A	$T_C = 117^\circ\text{C}$ $T_C = 112^\circ\text{C}$
I_{FSM}	Max. peak one cycle, non- repetitive surge current, per diode	80	84	A	50 Hz half cycle sine wave or 6 ms rectangular pulse 60 Hz half cycle sine wave or 5 ms rectangular pulse
I^2_t	Max. I^2_t for fusing, per diode	32	33.5	A^2s	$t = 10 \text{ ms}$ $t = 8.3 \text{ ms}$
V_{FM}	Max. peak forward voltage per diode	0.98	1.25	V	$T_J = 25^\circ\text{C}$ $I_{FM} = 5\text{A}$
I_{RM}	Max. peak reverse current per diode	20	30	μA	$T_J = 25^\circ\text{C}$ $I_{RM} = V_{RRM}$
t_{rr}	Max. reverse recovery time	35	45	ns	$T_J = 25^\circ\text{C}$ $I_{FM} = 5\text{A}$ $-di/dt = 50\text{A}/\mu\text{s}$

THERMAL-MECHANICAL SPECIFICATIONS

T_J	Max. operating 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, dc, junction-to-case	3	deg. C/W	Based on power dissipated in both junctions
wt	Approximate weight	2.8 (0.1)	g (oz)	
	Case Style	TO-220AB		

SERIES	POLARITY	
10CTF	FORWARD	
10JTF	REVERSE	

10CTF10 & 20, 10JTF10 & 20 Series

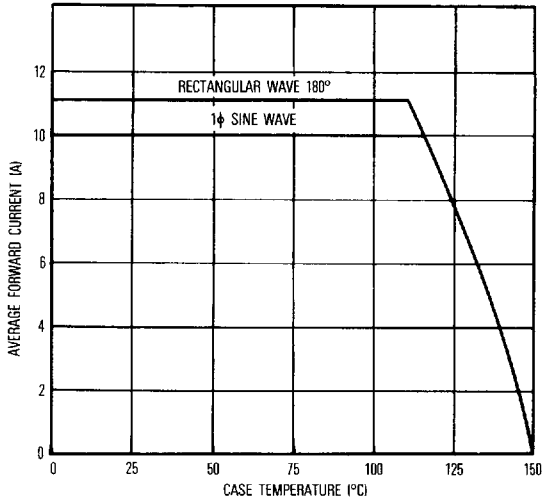


Fig. 1 – Average Forward Current Vs. Maximum Allowable Case Temperature

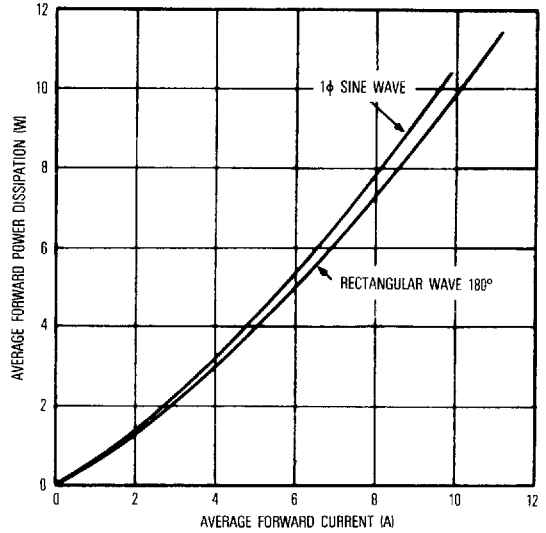


Fig. 2 – Average Forward Power Dissipation Vs. Average Forward Current

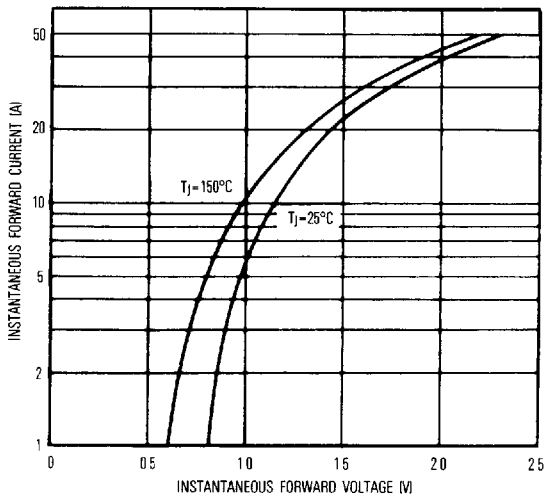


Fig. 3 – Maximum Instantaneous Forward Voltage Vs. Instantaneous Forward Current

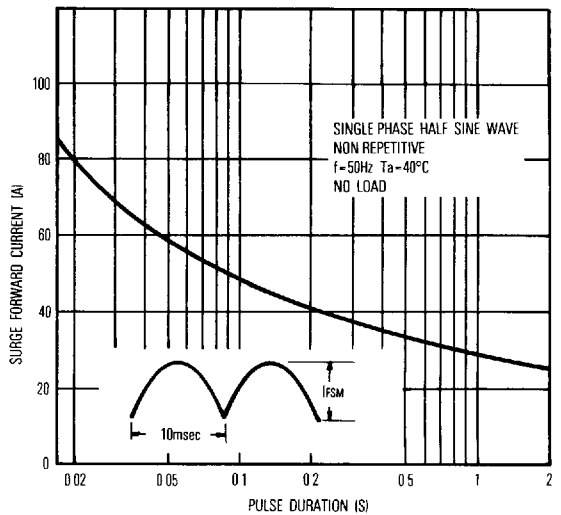


Fig. 4 – Maximum Non-Repetitive Surge Current Vs. Pulse Duration

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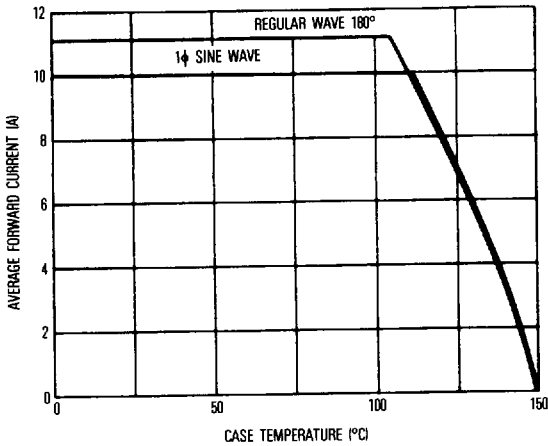


Fig. 5 - Average Forward Current Vs. Maximum Allowable Case Temperature

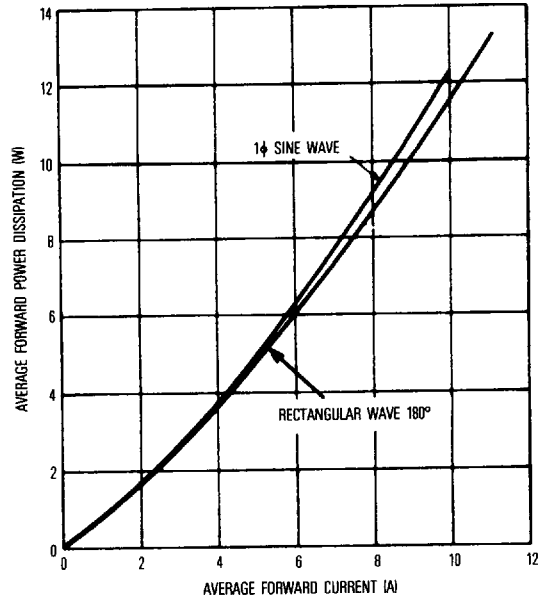


Fig. 6 - Average Forward Power Dissipation Vs. Average Forward Current

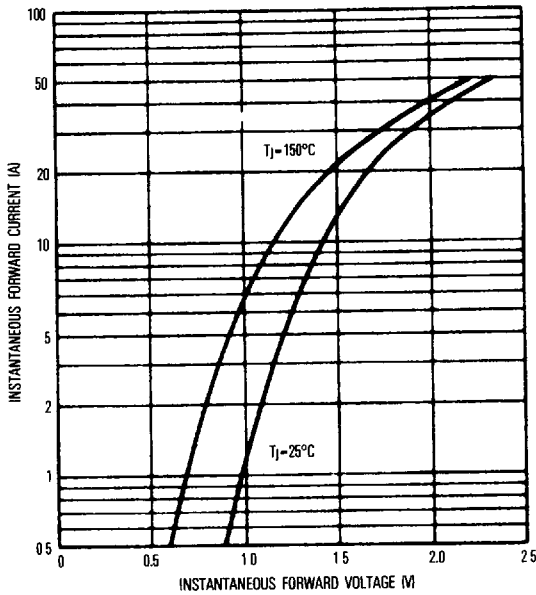


Fig. 7 - Maximum Instantaneous Forward Voltage Vs. Instantaneous Forward Current

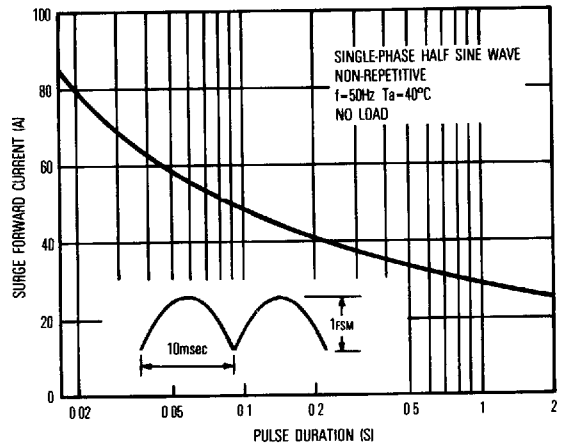


Fig. 8 - Maximum Non-Repetitive Surge Current Vs. Pulse Duration

International Rectifier

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Data and specifications subject to change without notice