

INTERNATIONAL RECTIFIER 

# 5TF SERIES

## 5 Amp

### Ultrafast Recovery Rectifiers

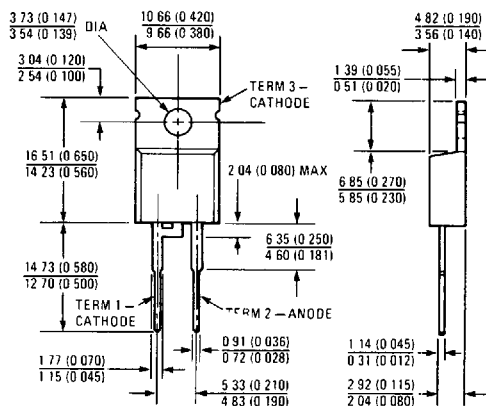
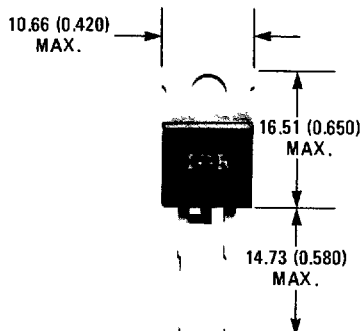
**Major Ratings and Characteristics**

	5TF10 5TF20	5TF30 5TF40	Units
$I_o$	5		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 5TF series of ultrafast recovery rectifiers are rated at 5 amperes and are designed for use in switching power supplies, inverters and as free wheeling diodes.

- Ultrafast 35 and 45 nanosecond recovery time
- 150°C operating junction temperature
- Popular TO-220 package
- Low forward voltage
- Glass passivated junction
- Reverse voltage up to 400 volts

**CASE STYLE AND DIMENSIONS**

Conforms to JEDEC Outline TO-220AC

All Dimensions in Millimeters and (Inches)

## 5TF Series

## VOLTAGE RATINGS

Part Numbers	$V_{RRM}$ - Max. Repetitive Peak Reverse Voltage (V)	$V_{RSM}$ - Max. Non-Repetitive Peak Reverse Voltage (V)
5TF10	100	110
5TF20	200	220
5TF30	300	330
5TF40	400	440

## ELECTRICAL SPECIFICATIONS

	5TF10 5TF20	5TF30 5TF40	Units	Conditions
$I_O$ Max. average output current	5	5	A	$T_C = 121^\circ\text{C}$ $T_C = 118^\circ\text{C}$
$I_{FSM}$ Max. peak one cycle, non-repetitive surge current,	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,	32	34	$\text{A}^2\text{s}$	$t = 10\text{ ms}$ $t = 8.3\text{ ms}$
$V_{FM}$ Max. peak forward voltage	0.98	1.25	V	$T_J = 25^\circ\text{C}$ $I_{FM} = 5\text{ A}$
$I_{RM}$ Max. peak reverse current	20	30	$\mu\text{A}$	$T_J = 25^\circ\text{C}$ $I_{RM} = V_{RRM}$
$t_{rr}$ 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	5	deg. C/W	
wt Approximate weight	2.8 (0.1)	g (oz)	
Case Style	TO-220AC		

5TF10 & 20 Series

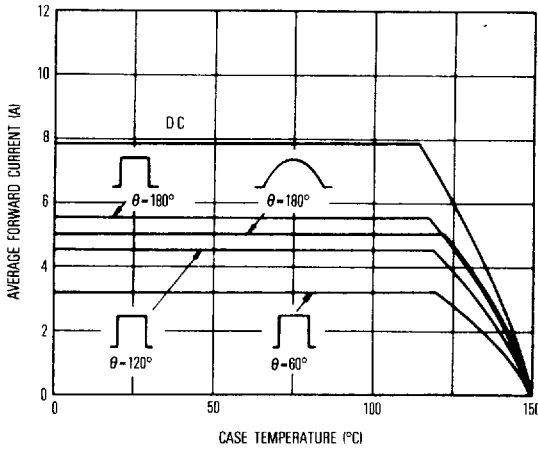


Fig. 1 - Average Forward Current Vs. Maximum Allowable Case Temperature

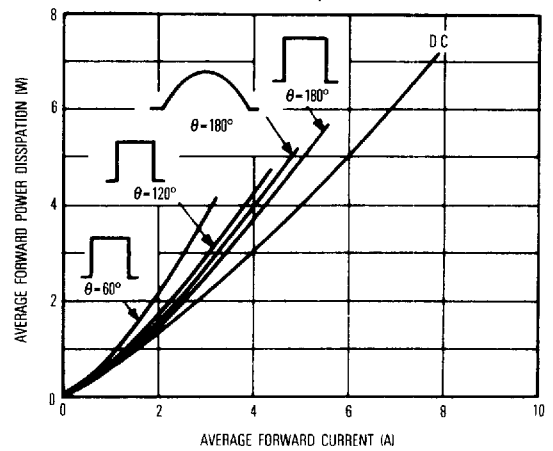


Fig. 2 - Average Forward Power Dissipation Vs. Average Forward Current

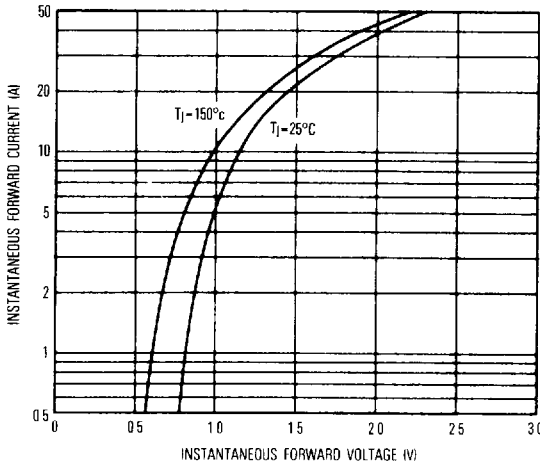


Fig. 3 - Maximum Instantaneous Forward Voltage Vs. Instantaneous Forward Current

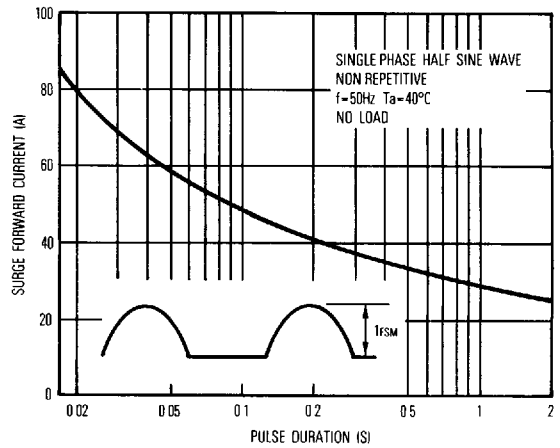


Fig. 4 - Maximum Non-Repetitive Surge Current Vs. Pulse Duration

5TF 30 & 40 Series

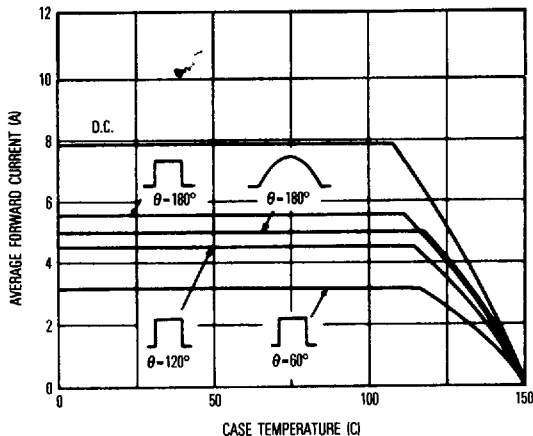


Fig. 5 - Average Forward Current Vs. Maximum Allowable Case Temperature

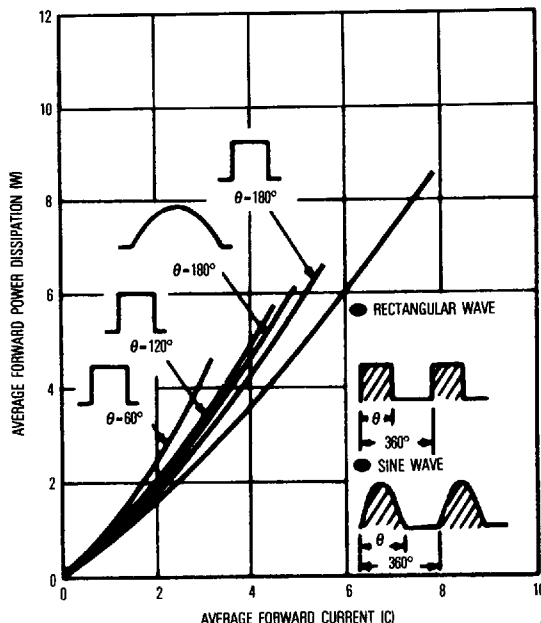


Fig. 6 - Average Forward Power Dissipation Vs. Average Forward Current

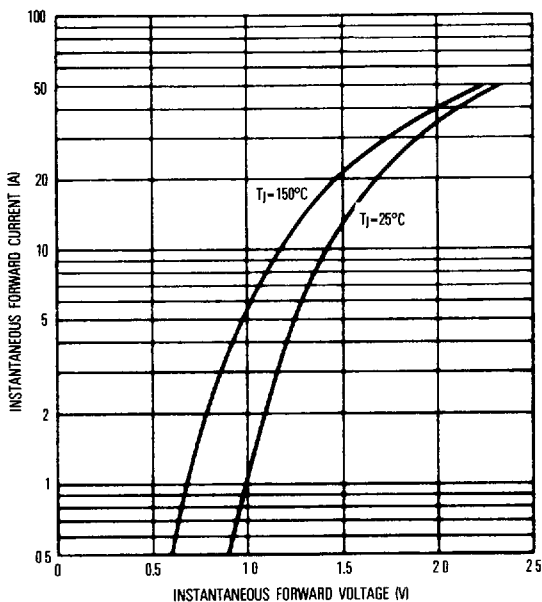


Fig. 7 - Maximum Instantaneous Forward Voltage Vs. Instantaneous Forward Current

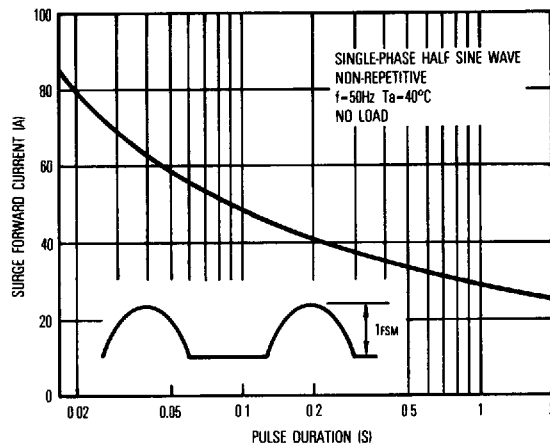


Fig. 8 - Maximum Non-Repetitive Surge Current Vs. Pulse Duration

**International Rectifier**

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Date and specifications subject to change without notice