



# SMUR1060(F)

Ultrafast Recovery Planar Diode  
Reverse Voltage 600 Volts Forward Current 10 Amperes

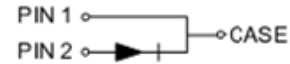
## Features

- FRED (Planar) wafer construction
- Ultrafast recovery time
- Low forward voltage drop, low power losses
- High efficiency operation
- Plastic package has underwriters Laboratory Flammability Classification 94V-0



Package: TO-220-AC

Package: ITO-220-AC



## Mechanical Data

- Case: Epoxy, Molded
- Weight: 1.9grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 50 units per plastic tube

## Maximum Ratings & Electrical Characteristics

( $T_A=25^\circ\text{C}$  unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	SMUR1060(F)	UNIT
Maximum repetitive peak reverse voltage			$V_{RRM}$	600	V
Working peak reverse voltage			$V_{RWM}$	600	V
Maximum DC blocking voltage			$V_{DC}$	600	V
Maximum average forward rectified current at $T_c=105^\circ\text{C}$ total device per diode			$I_{F(AV)}$	10	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode			$I_{FSM}$	100	A
Voltage rate of change (rated $V_R$ )			$DV/dt$	10000	V/us
Operating junction temperature range			$T_J$	-55 to +150	$^\circ\text{C}$
Storage temperature range			$T_{STG}$	-55 to +150	$^\circ\text{C}$
Maximum Reverse Recover Time ( $I_f=0.5\text{Amp}$ , $I_R=1.0\text{Amp}$ , $I_{rec}=0.25\text{Amp}$ )	$T_{rr}$		$T_{rr}$	25	ns
Maximum instantaneous forward voltage per leg	$I_f=10\text{A}$ $I_f=10\text{A}$	$T_c=25^\circ\text{C}$ $T_c=125^\circ\text{C}$	$V_F$	2.20 2.10	V
Maximum reverse current per leg at working peak Reverse voltage		$T_J=25^\circ\text{C}$ $T_J=100^\circ\text{C}$	$I_R$	10 500	$\mu\text{A}$
<b>Thermal Characteristics <math>T_A=25^\circ\text{C}</math> unless otherwise noted</b>					
<b>Symbol</b>	<b>Parameter</b>		<b>TYP (TO-220-AC)</b>	<b>TYP (ITO-220-AC)</b>	<b>Unit</b>
R $\theta$ JC	Thermal Resistance, Junction to Case per Leg		2.0	4.0	$^\circ\text{C}/\text{W}$
R $\theta$ JA	Thermal Resistance, Junction to Ambient per Leg		62.5	62.5	$^\circ\text{C}/\text{W}$

**Note:** Pulse test: 300us pulse width, duty cycle=2%



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## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

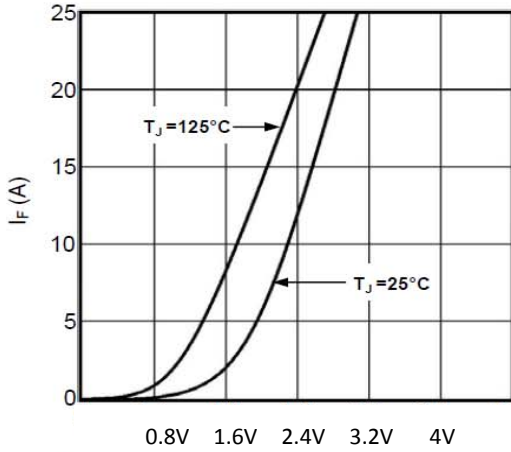


Fig1. Forward Voltage Drop vs Forward Current

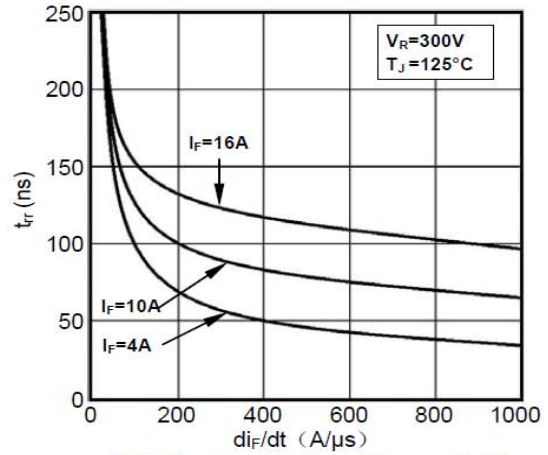


Fig2. Reverse Recovery Time vs  $di_F/dt$

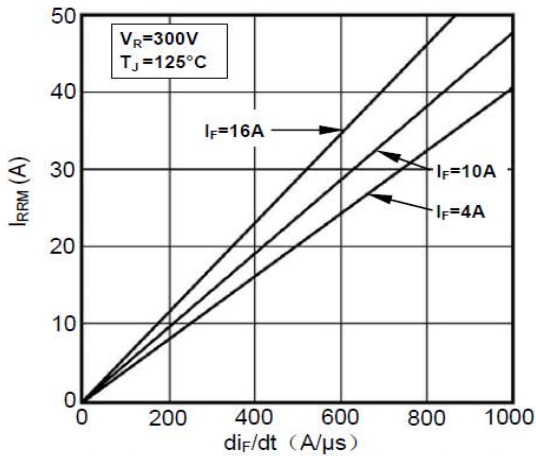


Fig3. Reverse Recovery Current vs  $di_F/dt$

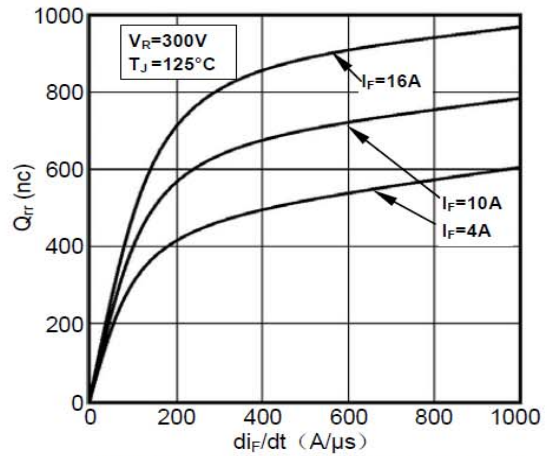


Fig4. Reverse Recovery Charge vs  $di_F/dt$

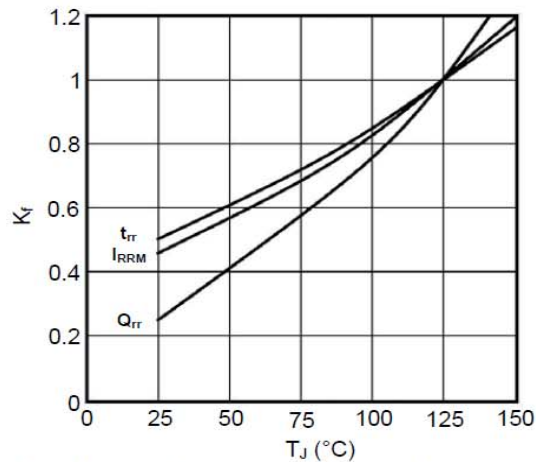


Fig5. Dynamic Parameters vs Junction Temperature

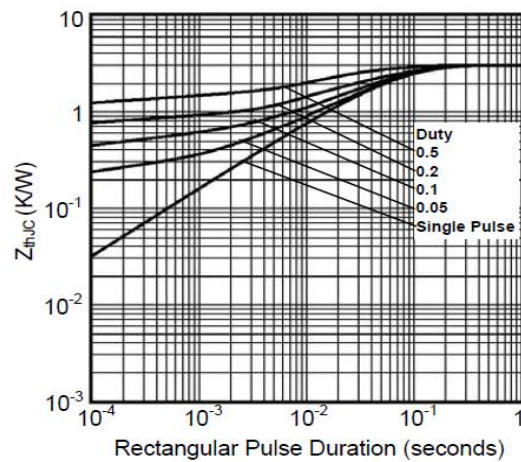


Fig6. Transient Thermal Impedance



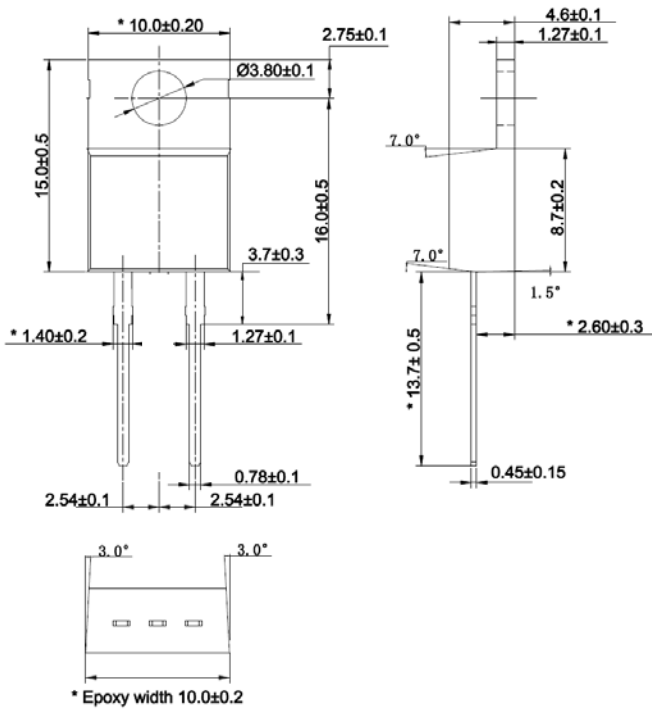
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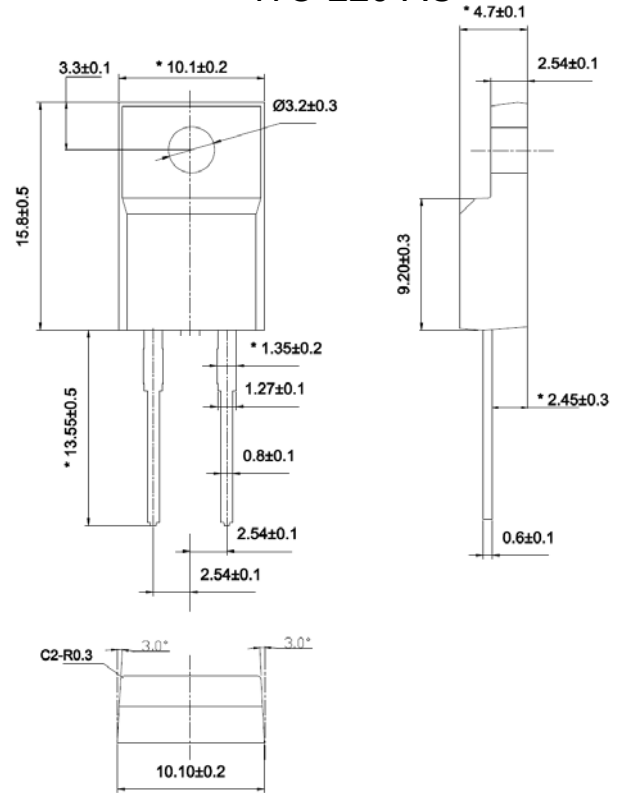
## Package Outline Dimensions

Unit: millimeters

### TO-220-AC



### ITO-220-AC





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