

## 60A 300V Fast recovery diode

### 1 Description

60A, 300V ultrafast diodes They have low forward voltage drops. These devices are intended for use as energy control/clamping diodes and rectifiers in various switching power supplies and other power switching applications. Their low storage charge and ultra-fast recovery with soft recovery characteristics minimize ringing and electrical noise in many power switching circuits, thereby reducing power losses in switching transistors

### 2 Features

- Low forward voltage drop
- Glass Passivated Die Construction
- Low leakage current
- High reliability
- High forward surge current capability

### 3 Applications

- Switching Power Supply
- Power Switching Circuits
- Inverter power supply

### 4 install

- Recommended torque value (TO-247): 0.8 N.m
- Recommended torque value (TO-3PN/3P): 0.8 N.m
- Maximum torque value (TO-247): 1.2 N.m
- Maximum torque value (TO-3PN/3P): 1.1 N.m

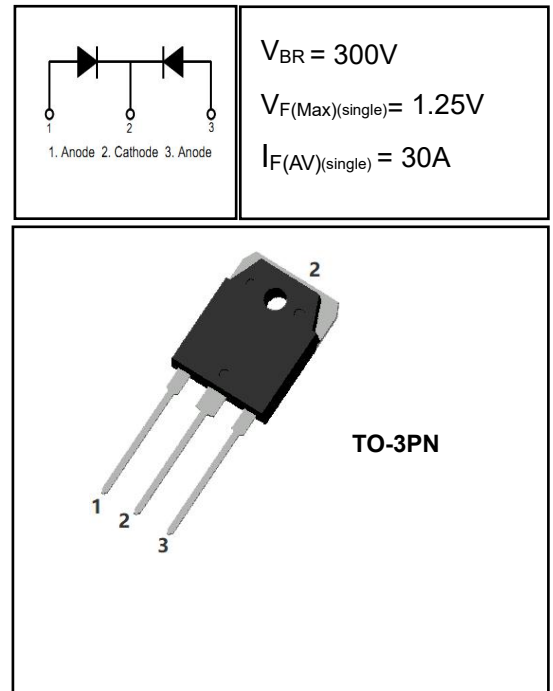
## 5 Electrical Characteristics

### 5.1 Absolute Maximum Ratings (Tc=25°C, unless otherwise noted)

PARAMETER		SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage		$V_{RRM}$	300	V
Working Peak Reverse Voltage		$V_{RWM}$	300	V
DC Blocking Voltage		$V_R$	300	V
Average Rectified Forward Current(single)	Tc=135°C	$I_{F(AV)}$	30	A
Average Rectified Forward Current(double)	Tc=135°C		60	A
Repetitive Peak Surge Current(single)		$I_{FRM}$	45	A
Nonrepetitive Peak Surge Current(single)	tp=8.3ms	$I_{FSM}$	350	A
Avalanche Energy(single)	L=1mH	$E_{AS}$	100	mJ
Operating Junction Temperature Range		$T_j$	-55~150	°C
Storage Temperature Range		$T_{stg}$	-55~150	°C

### 5.2 Thermal Characteristics

PARAMETER	SYMBOL	VALUE	UNIT
Thermal Resistance, Junction to Case-sink	$R_{thJC}$	0.75	°C/W



## 5.3 Electrical Characteristics (Tc=25°C, unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Maximum Instantaneous Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 30A	-	1.03	1.25	V
		I <sub>F</sub> = 30A, T <sub>C</sub> = 150°C	-	0.88	-	V
		I <sub>F</sub> = 40A	-	1.15	1.3	V
Maximum Instantaneous Reverse	I <sub>R</sub>	V <sub>R</sub> = 300V	-	-	10	uA
		V <sub>R</sub> = 300V, T <sub>C</sub> = 150°C	-	-	2.0	mA
Maximum Reverse Recovery Time	t <sub>rr</sub>	V <sub>R</sub> =30V I <sub>F</sub> =1A -di/dt=50A/us	-	34	45	ns
Total capacitance	C <sub>tot</sub>	V <sub>R</sub> =0V f=1MHz	-	710	-	pF
DC Blocking Voltage	V <sub>BR</sub>	I <sub>R</sub> =100uA	320	360	-	V

### DEFINITIONS

V<sub>F</sub> = Instantaneous forward voltage (pw = 300μs, D = 2%).

I<sub>R</sub> = Instantaneous reverse current.

R<sub>θJC</sub> = Thermal resistance junction to case.

pw = pulse width.

D = duty cycle.

## 6 Typical characteristics diagrams

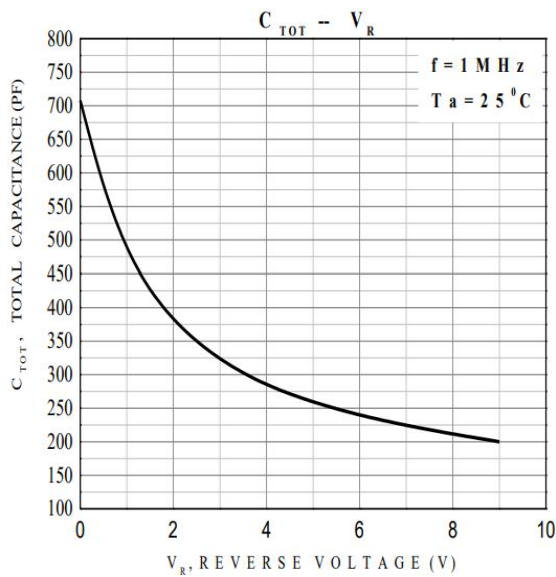


FIGURE 1. Total capacitance vs Voltage

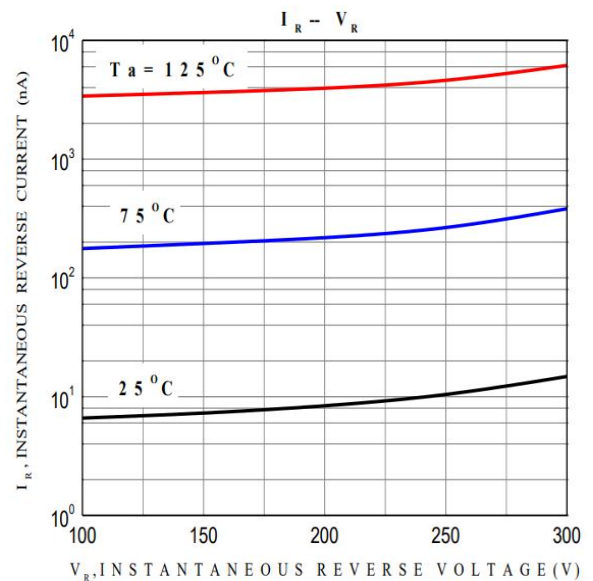


FIGURE 2. REVERSE CURRENT vs REVERSE VOLTAGE

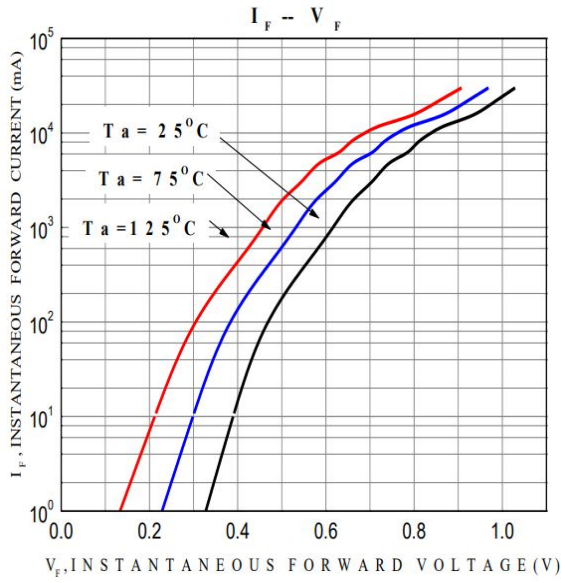


FIGURE 3. FORWARD CURRENT vs FORWARD VOLTAGE

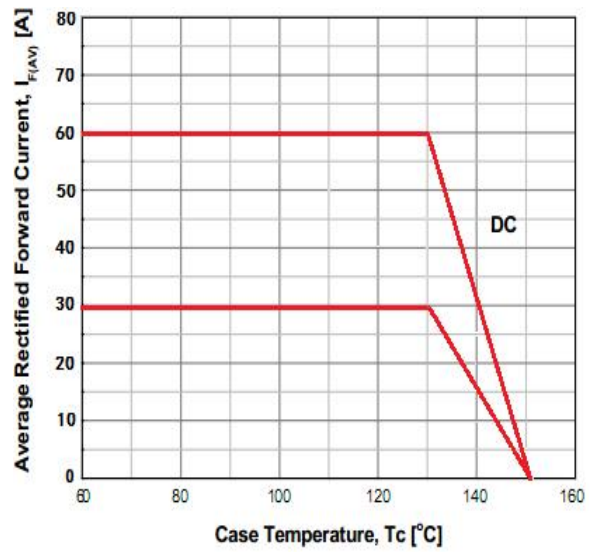


FIGURE 4. CURRENT DERATING CURVE

## 7 Typical Test Circuit and Waveform

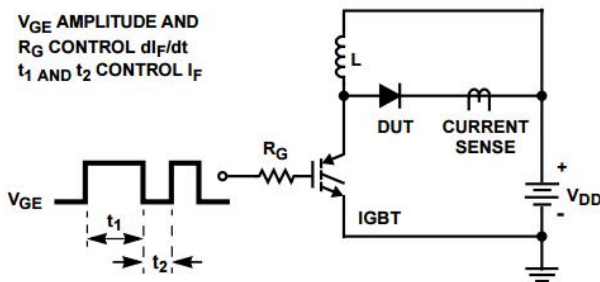


FIGURE 5. trr TEST CIRCUIT

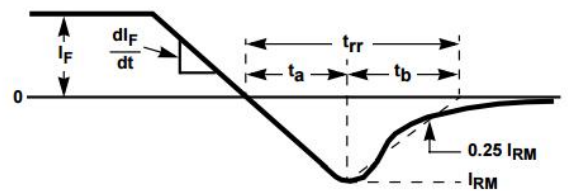


FIGURE 6. trr WAVEFORMS AND DEFINITIONS

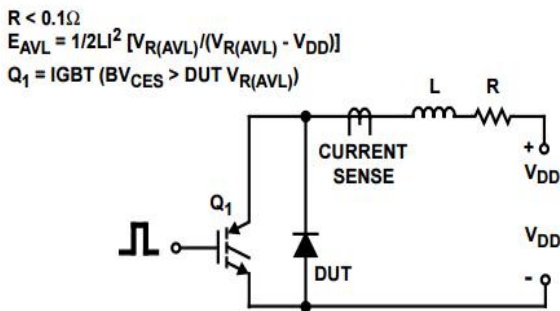


FIGURE 7. AVALANCHE ENERGY TEST CIRCUIT FIGURE

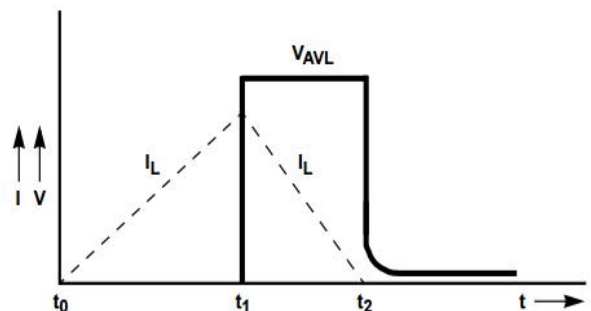


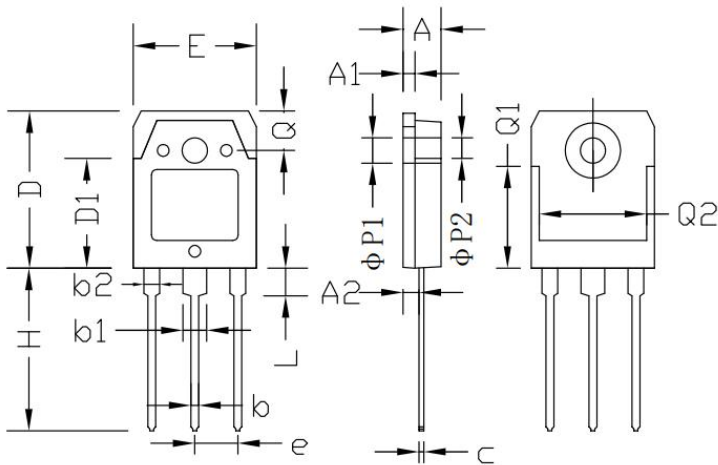
FIGURE 8. AVALANCHE CURRENT AND VOLTAGE WAVEFORMS

## 8 Product Specifications and Packaging Models

Product Model	Package Type	Mark Name	RoHS	Package	Quantity
MUR60G30NCT	TO-3PN	MUR60G30NCT	Pb-free	Tube	300/box

## 9 Dimensions

### TO-3PN PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	min.	max.	min.	max.
A	4.60	5.00	0.181	0.197
A1	1.45	1.65	0.057	0.065
A2	2.20	2.60	0.087	0.102
b	0.80	1.20	0.032	0.047
b1	2.80	3.20	0.110	0.126
b2	1.80	2.20	0.071	0.087
C	0.55	0.75	0.022	0.030
D	19.20	19.80	0.756	0.780
D1	13.10	14.70	0.516	0.578
E	15.40	15.80	0.607	0.623
e	5.45 TYP		0.215 TYP	
H	19.80	20.50	0.780	0.807
L	3.20	3.70	0.126	0.146
ΦP1	3.20 TYP		0.126 TYP	
ΦP2	3.50 TYP		0.138 TYP	
Q	5.00 TYP		0.197 TYP	
Q1	12.40 TYP		0.488 TYP	
Q2	12.6	-	0.496	-

## 10 Attentions

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- Product promotion is endless, our company will be dedicated to provide customers with better products.

## 11 Appendix

Revision history:

Date	REV.	Description	Page
2022.8.12	1.0	Original	