Voltage Range 1200 V
Current 60.0 Ampere

Features

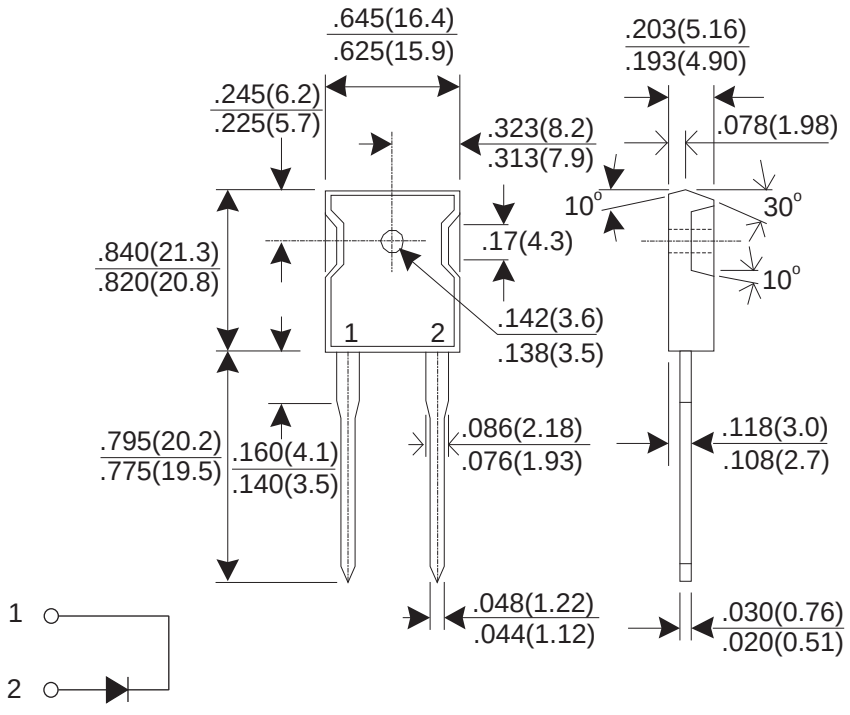
- Fast switching for high efficiency
- Low noise
- Low reverse leakage current
- High voltage super FRD
- PFC application

Mechanical Data

- Case: Molded plastic TO-247-2L
- Epoxy: UL 94V-0 rate flame retardant ,
- Terminals: Solderable per MIL-STD-202 method 208
- Mounting position: Any
- Weight : 6.2 grams

Dimensions in inches and (millimeters)

TO-247-2L



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

PARAMTER	SYMBOL	THFR60A12PD			UNIT
		Min.	Typ.	Max.	
Recurrent Peak Reverse Voltage	V_{RRM}	-	-	1200	V
RMS Voltage	V_{RMS}	-	-	840	V
DC Blocking Voltage	V_{DC}	-	-	1200	V
Average Forward Rectified Current T_C= 80 °C	$I_{F(AV)}$	-	-	60.0	A
Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	-	-	480	A
Instantaneous Forward Voltage @60A(25°C) @60A(150°C)	V_F	-	-	3.5 2.8	V
DC Reverse Current @T_J=25°C At Rated DC Blocking Voltage @T_J=150°C	I_R	-	-	250 1000	uA uA
Maximum Reverse Recovery Time (Note 1)	Trr	-	-	60	nS
Maximum Reverse Recovery Time (Note 2)	Trr			80	nS
Typical junction Capacitance (Note 3)	C_J	-	80	-	pF
Typical Thermal Resistance (Note 4)	$R_{\theta JC}$	-	-	1.0	°CW
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-65	-	175	°C

NOTES : (1) Reverse recovery test conditions I_F =0.5A ,I_R = 1A , Irr = 0.25A
(2) Reverse recovery test conditions I_F = 15A, dI_F/dt = 100A/us.
(3) Junction Capacitance test conditions : V_R = 10V,I_F = 0A.
(4) Thermal Resistance junction to case.

RATING AND CHARACTERISTIC CURVES

FIG.1 - FORWARD CURRENT DERATING CURVE

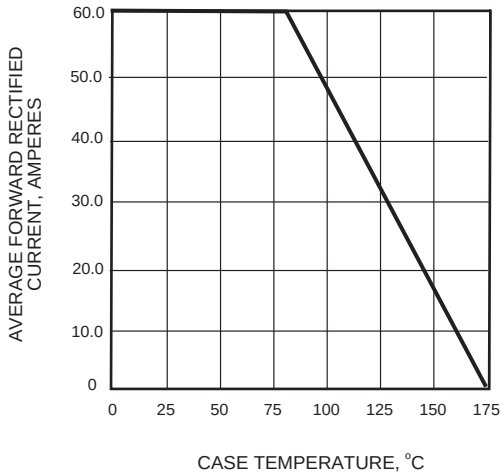


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

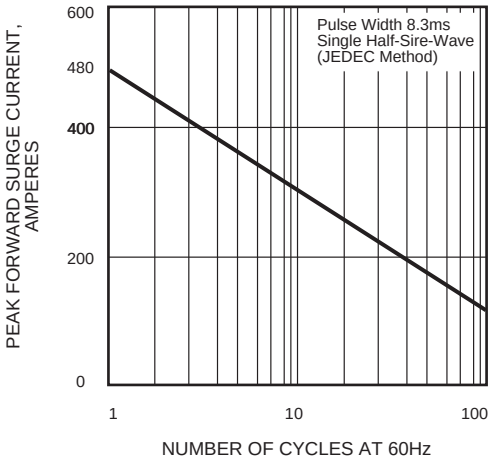


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

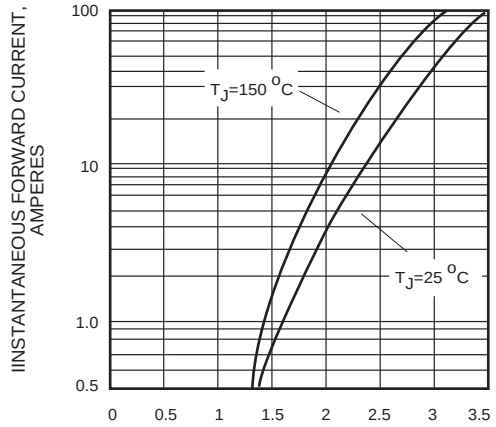


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

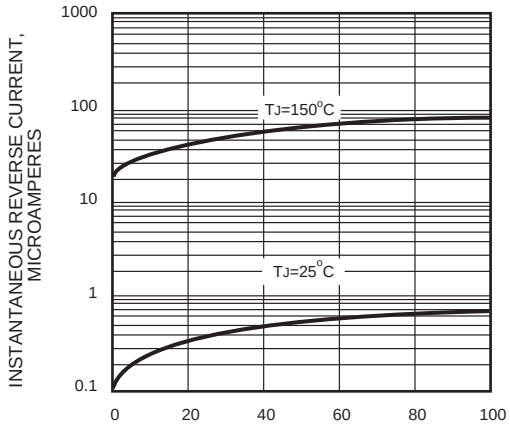


FIG.5 - T_{rr} , t_a AND t_b CURVES vs FORWARD CURRENT

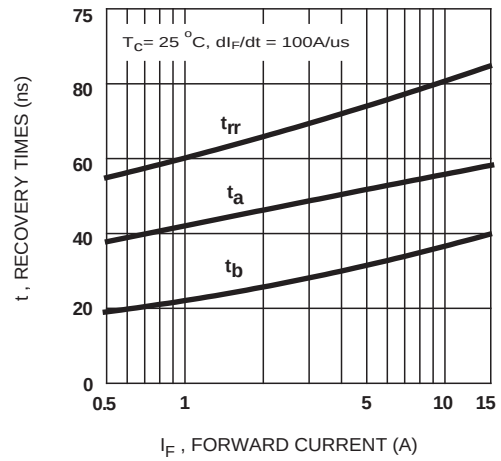
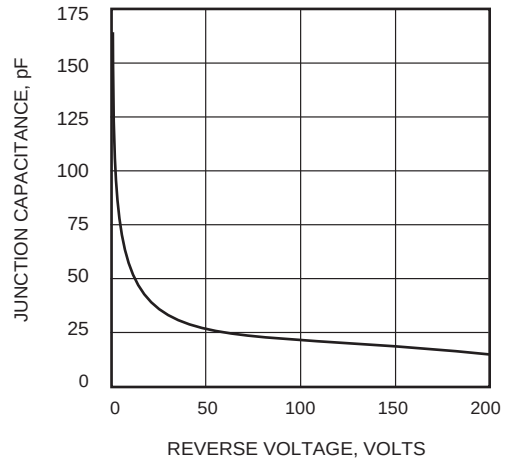


FIG.6 - TYPICAL JUNCTION CAPACITANCE



Test Circuits and Waveforms

FIG.7 - t_{rr} TEST CIRCUIT

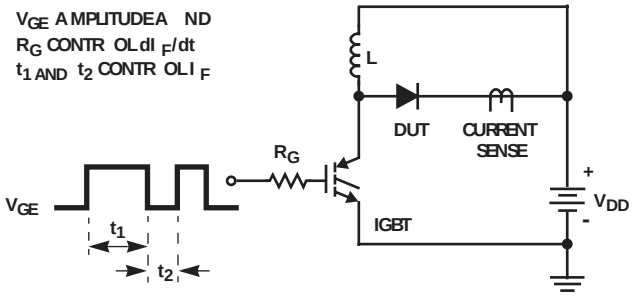


FIG. 8 - t_{rr} WAVEFORMS AND DEFINITIONS

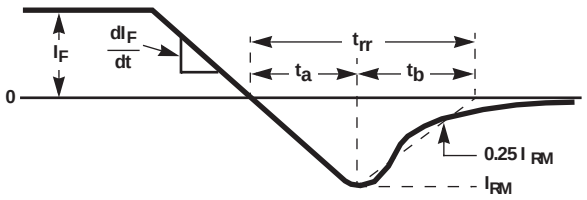


FIG. 9 - AVALANCHE ENERGY TEST CIRCUIT

I_{MAX} = 1A
L = 40mH
R< 0.1
$E_{AVL} = 1/2LI^2 [V_{R(AVL)} /(V_{R(AVL)} - V_{DD})]$
Q_1 = IGBT (BV_{CES} > DUT $V_{R(AVL)}$)

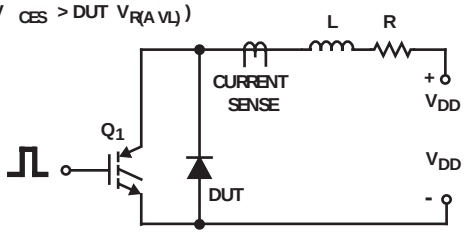


FIG. 10 - AVALANCHE CURRENT AND VOLTAGE WAVEFORMS