YENYO

HFR8A12D

Glass Passivated Hyperfast Recovery Rectifier

Features

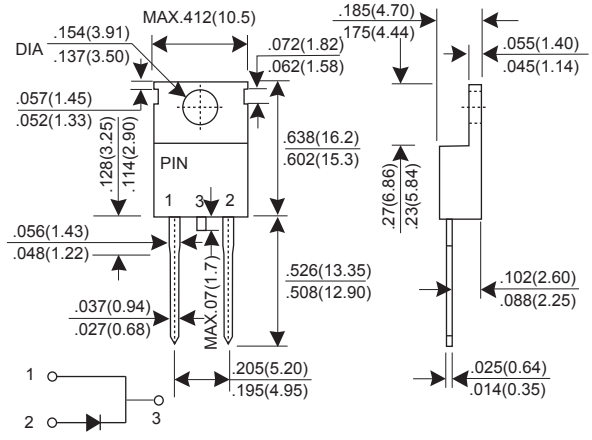
- ✶ Fast switching for high efficiency
- ✶ Low noise
- ✶ Trr = 25ns
- ✶ Low reverse leakage current
- ✶ High voltage super FRD
- ✶ PFC application

Mechanical Data

- ✶ Case: Molded plastic TO-220AC
- ✶ Epoxy: UL 94V-0 rate flame retardant
- ✶ Terminals: Solderable per MIL-STD-202 method 208
- ✶ Mounting position: Any
- ✶ Weight: 2.07 grams

Voltage Range 1200 V
Current 8.0 Ampere

TO-220AC



Dimensions in inches and (millimeters)

Maximum Ratings $T_C = 25^\circ C$, Unless Otherwise Specified

Item	Symbol	Conditions	UNIT
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=140°C	$I_{F(AV)}$	8.0	A
Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	100	A
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-65 ~ +175	°C

Electrical/Thermal Characteristics $T_C = 25^\circ C$, Unless Otherwise Specified

Item	Symbol	Conditions	Min.	Typ.	Max.	UNIT
Instantaneous Forward Voltage	V_F	I_F = 8A	-	-	4.5	V
DC Reverse Current At Rated DC Blocking Voltage	I_R	V_R = 1200V V_R = 1200V T_J=150°C	-	-	10.0 500	uA uA
Maximum Reverse Recovery Time	Trr	I_F = 0.5A, I_R = 1.0A, Irr = 0.25A	-	-	25	nS
Typical junction Capacitance	C_J	V_R = 10V, I_F = 0A	-	25	-	pF
Typical Thermal Resistance	$R_{\theta JC}$	Junction to Case	-	-	2	°CW

RATINGS AND CHARACTERISTIC CURVES HFR8A12D

FIG.1 - FORWARD CURRENT DERATING CURVE

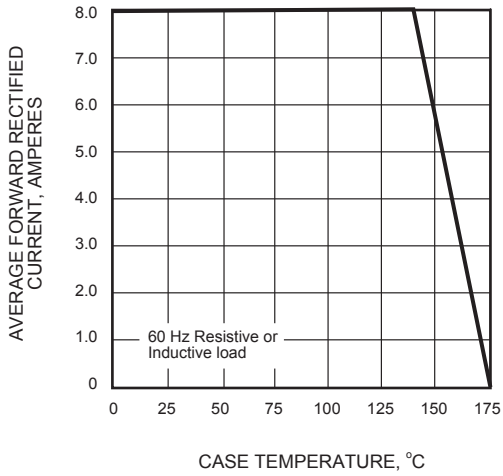


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

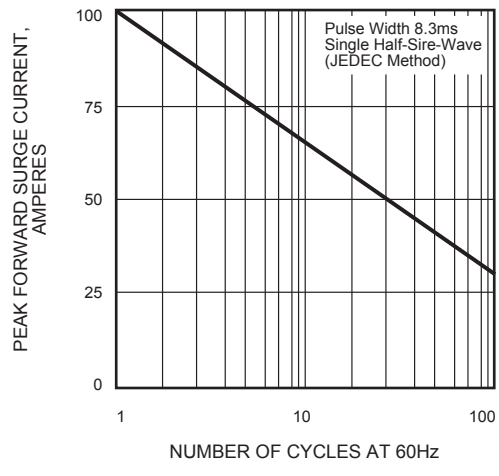


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

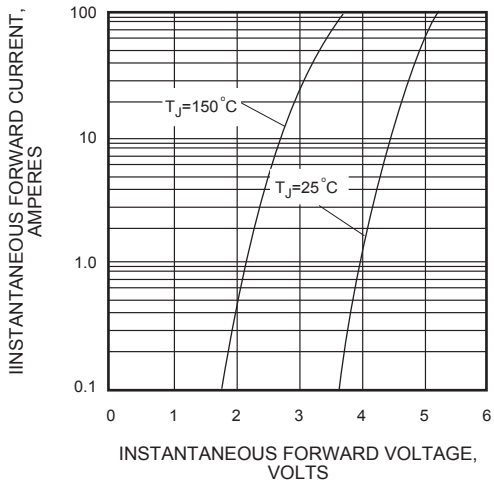


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

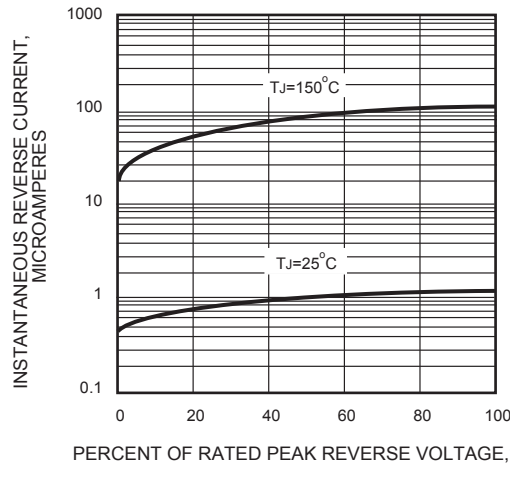
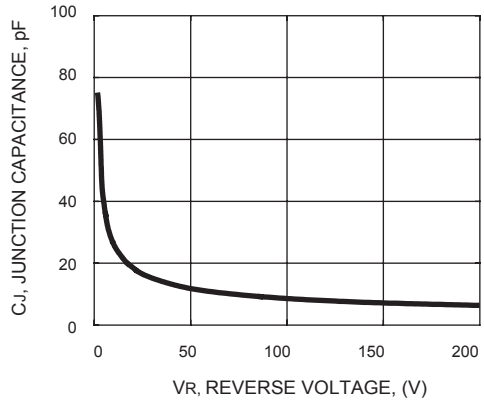


FIG.5 - JUNCTION CAPACITANCE VS REVERSE VOLTAGE



Test Circuits and Waveforms

FIG.6 -t_{rr} TEST CIRCUIT

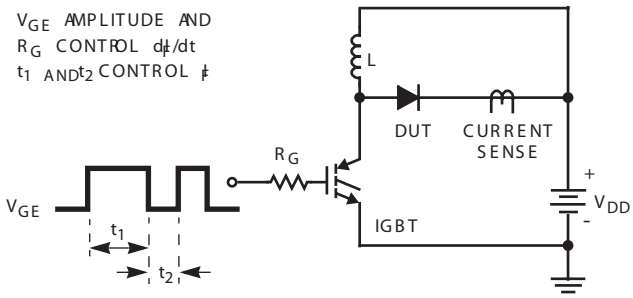


FIG. 7 t_{rr} WAVEFORMS AND DEFINITIONS

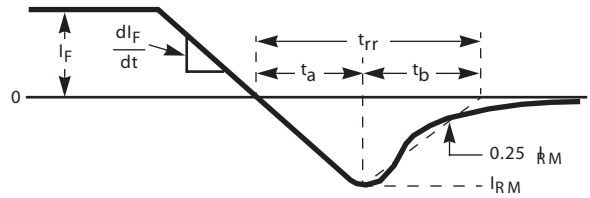


FIG. 8 AVALANCHE ENERGY TEST CIRCUIT

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 $V_{R(AVL)}$)

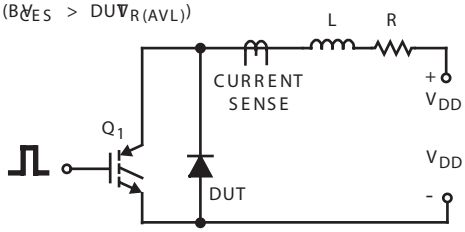


FIG.9 -AVALANCHE CURRENT AND VOLTAGE WAVEFORMS