

FAST RECOVERY EPITAXIAL DIODE

600V / 60A

$V_F=1.9V@I_F=60A$, $t_{rr}=35ns$

FEATURES

- UltraFast Recovery Time
- Soft Recovery Characteristic
- Low Forward Voltage
- Low Recovery Loss
- High Surge Current Capability
- RoHS Compliant

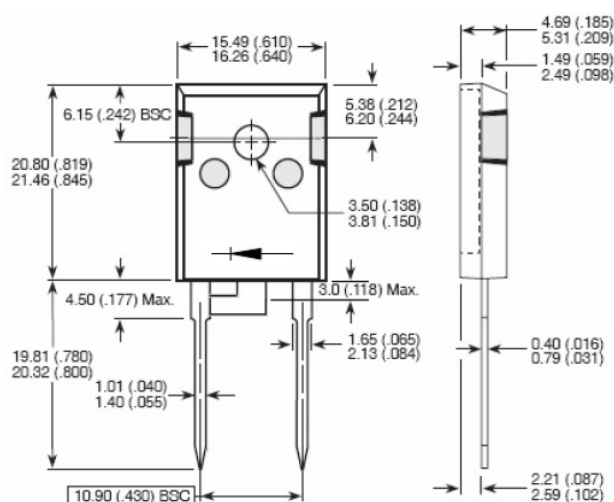
APPLICATION

- Converter, PFC
- Freewheeling, Snubber
- UPS, Plating Power Supply
- Inversion Welder

MECHANICAL DATA

- Case : TO - 247AC Modified Molded plastic
- Epoxy : UL94-0 rate flame retardant
- Polarity : As marked

TO - 247AC Modified



Dimensions in millimeters (inches)

Absolute Maximum Ratings ($T_J=25^{\circ}C$ unless otherwise noted)

PARAMETER		SYMBOL	HY60FR060EP	UNITS
		MARKING	60FR060EP	
Repetitive Peak Reverse Voltage		V _{RRM}	600	V
Average Rectified Forward Current	T _J =105°C	I _{F(AV)}	60	A
Non-Repetitive Surge Forward Current T _p =10ms(50HZ) Sine Wave	T _J =25°C	I _{FSM}	600	A
Avalanche Energy with Single Pulse (L=40mH)		E _{AS}	220	mJ
Maximum Power Dissipation		P _D	225	W
Operating Junction and Storage Temperatures		T _J , T _{Stg}	-55 to 150	°C

Thermal & Mechanical Specifications

PARAMETER	SYMBOL	HY60FR060EP	UNITS
Junction-to-Case Thermal Resistance	$R_{\theta JC}$	0.55	$^{\circ}C/W$
Junction-to Ambient Thermal Resistance	$R_{\theta JA}$	40	$^{\circ}C/W$
Weight		6.0	g
Mounting Torque		1.1	Nt.m

COMPANY RESERVES THE RIGHT TO IMPROVE PRODUCT DESIGN,FUNCTIONS AND RELIABILITY WITHOUT NOTICE

Electrical Characteristics & Curves ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	Min.	Typ.	Max.	Units
Breakdown Voltage	V_{BR}	$I_R=100\mu\text{A}$	600	-	-	V
Forward Voltage	V_F	$I_F=60\text{A}$	-	1.5	1.9	V
		$I_F=60\text{A}, T_J=125^{\circ}\text{C}$	-	1.3	1.6	V
Reverse Leakage Current	I_R	$V_R=600\text{V}$	-	-	10	μA
		$V_R=600\text{V}, T_J=125^{\circ}\text{C}$	-	-	250	μA

DYNAMIC RECOVERY CHARACTERISTICS

Reverse Recovery Time	t_{rr}	$I_F=1\text{A}, V_R=30\text{V}, dI_F/dt=-200\text{A/us}$	-	30	36	ns
Reverse Recovery Time	t_{rr}	$I_F=60\text{A}, V_R=300\text{V}$ $dI_F/dt=-200\text{A/us}$	-	35	45	ns
Peak Recovery Current	I_{RRM}		-	4.3	-	A
Reverse Recovery Charge	Q_{rr}		-	75	-	nC
Reverse Recovery Time	t_{rr}	$I_F=60\text{A}, V_R=300\text{V}$ $dI_F/dt=-200\text{A/us}, T_J=125^{\circ}\text{C}$	-	92	-	ns
Peak Recovery Current	I_{RRM}		-	8.8	-	A
Reverse Recovery Charge	Q_{rr}		-	405	-	nC

FIG. 1 - Typical Forward Voltage Drop Characteristics

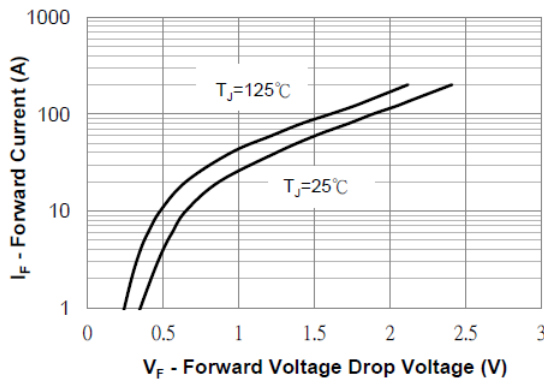


FIG. 2 - Typical Value of Reverse Current vs. Reverse Voltage

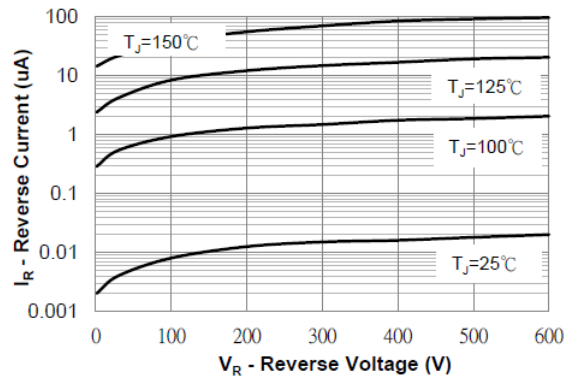


FIG. 3 - Typical Junction Capacitance vs. Reverse Voltage

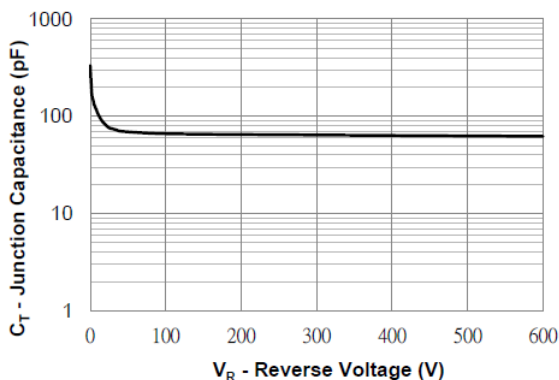


FIG. 4 - Average Forward Current vs. Maximum Allowable Case Temperature

