

FAST RECOVERY EPITAXIAL DIODE	600V / 60A $V_F=1.9V@I_F=60A, t_{rr}=35ns$
<p>FEATURES</p> <ul style="list-style-type: none"> UltraFast Recovery Time Soft Recovery Characteristic Low Forward Voltage Low Recovery Loss High Surge Current Capability RoHS Compliant <p>APPLICATION</p> <ul style="list-style-type: none"> Converter, PFC Freewheeling, Snubber UPS, Plating Power Supply Inversion Welder <p>MECHANICAL DATA</p> <ul style="list-style-type: none"> Case : TO - 247AC Modified Molded plastic Epoxy : UL94-0 rate flame retardant Polarity : As marked 	<p>TO - 247AC Modified</p> <p style="text-align: center;">Dimensions in millimeters (inches)</p>

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

PARAMETER		SYMBOL	HY60FR060EP	UNITS
		MARKING	60FR060EP	
Repetitive Peak Reverse Voltage		V_{RRM}	600	V
Average Rectified Forward Current	$T_J=105^\circ\text{C}$	$I_{F(AV)}$	60	A
Non-Repetitive Surge Forward Current $T_p=10ms(50HZ)$ Sine Wave	$T_J=25^\circ\text{C}$	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	$^\circ\text{C}$

Thermal & Mechanical Specifications

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

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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

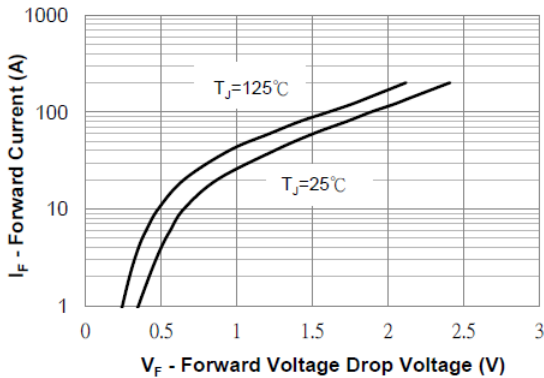


FIG. 2 - Typical Value of Reverse Current vs. Reverse Voltage

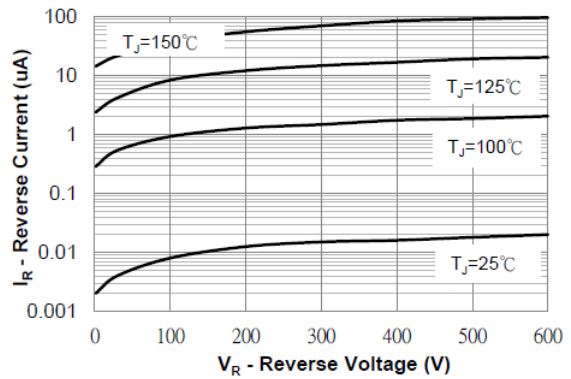


FIG. 3 - Typical Junction Capacitance vs. Reverse Voltage

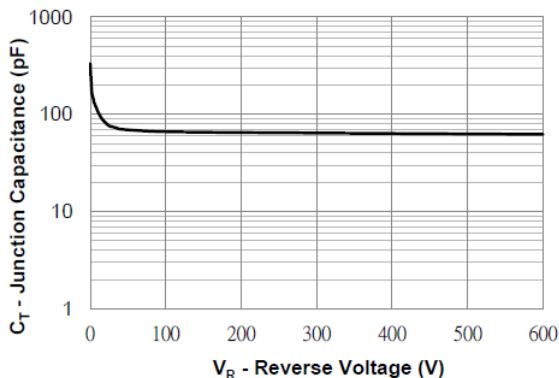


FIG. 4 - Average Forward Current vs. Maximum Allowable Case Temperature

