

FAST RECOVERY EPITAXIAL DIODE	600V / 30A $V_F=1.8V@I_F=15A, t_{rr}=28ns$
<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 - 247AB Molded plastic • Epoxy : UL94-0 rate flame retardant • Polarity : As marked 	<p>TO - 247AB</p> <p style="text-align: center;">Dimensions in millimeters (inches)</p>

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

PARAMETER	SYMBOL	HY30FR060P	UNITS
	MARKING	30FR060P	
Repetitive Peak Reverse Voltage	V_{RRM}	600	V
Average Rectified Forward Current	$I_{F(AV)}$	$T_J=110^\circ C$, Per leg	15
		$T_J=110^\circ C$, Per device	30
Non-Repetitive Surge Forward Current $T_p=10ms(50HZ)$ Sine Wave	I_{FSM}	180	A
Avalanche Energy with Single Pulse ($L=40mH$)	E_{AS}	120	mJ
Maximum Power Dissipation	P_D	110	W
Operating Junction and Storage Temperatures	T_J, T_{Stg}	-55 to 150	$^\circ C$

Thermal & Mechanical Specifications

PARAMETER	SYMBOL	HY30FR060P	UNITS
Junction-to-Case Thermal Resistance, Per leg	$R_{\theta JC}$	1.1	$^\circ C/W$
Junction-to Ambient Thermal Resistance, Per leg	$R_{\theta JA}$	40	$^\circ C/W$
Weight		5.2	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	$I_F=15\text{A}$	-	1.3	1.8	V
		$I_F=15\text{A}, T_J=125^\circ\text{C}$	-	1.1	1.5	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}	$I_F=1\text{A}, V_R=30\text{V}, dI_F/dt=-200\text{A}/\mu\text{s}$	-	20	28	ns
Reverse Recovery Time	t_{rr}	$I_F=15\text{A}, V_R=300\text{V}$ $dI_F/dt=-200\text{A}/\mu\text{s}$	-	28	-	ns
Peak Recovery Current	I_{RRM}		-	3.6	-	A
Reverse Recovery Charge	Q_{rr}		-	50	-	nC
Reverse Recovery Time	t_{rr}	$I_F=15\text{A}, V_R=300\text{V}$ $dI_F/dt=-200\text{A}/\mu\text{s}, T_J=125^\circ\text{C}$	-	72	-	ns
Peak Recovery Current	I_{RRM}		-	8.2	-	A
Reverse Recovery Charge	Q_{rr}		-	295	-	nC

FIG. 1 - Typical Forward Voltage Drop Characteristics

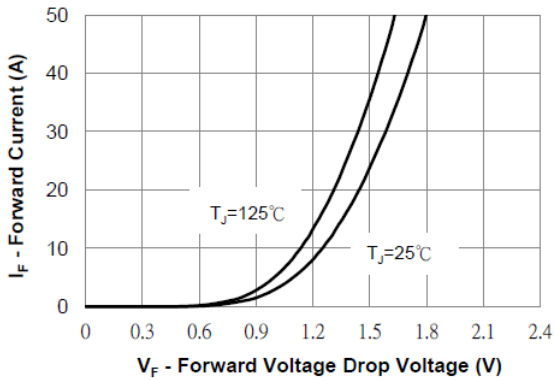


FIG. 2 - Typical Value of Reverse Current vs. Reverse Voltage

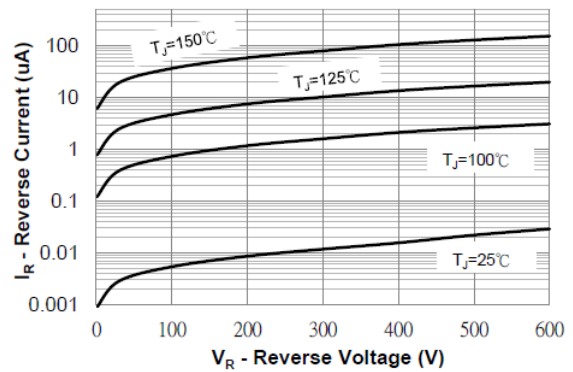


FIG. 3 - Typical Junction Capacitance vs. Reverse Voltage

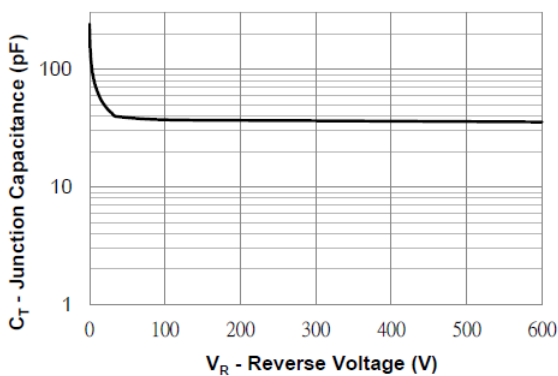


FIG. 4 - Average Forward Current vs. Maximum Allowable Case Temperature

