

<b>FAST RECOVERY EPITAXIAL DIODE</b>	<b>600V / 30A</b> $V_F=1.8V@I_F=15A, t_{rr}=28ns$
<p><b>FEATURES</b></p> <ul style="list-style-type: none"> <li>• UltraFast Recovery Time</li> <li>• Soft Recovery Characteristic</li> <li>• Low Forward Voltage</li> <li>• Low Recovery Loss</li> <li>• High Surge Current Capability</li> <li>• RoHS Compliant</li> </ul> <p><b>APPLICATION</b></p> <ul style="list-style-type: none"> <li>• Converter, PFC</li> <li>• Freewheeling, Snubber</li> <li>• UPS, Plating Power Supply</li> <li>• Inversion Welder</li> </ul> <p><b>MECHANICAL DATA</b></p> <ul style="list-style-type: none"> <li>• Case : TO - 247AB Molded plastic</li> <li>• Epoxy : UL94-0 rate flame retardant</li> <li>• Polarity : As marked</li> </ul>	<p><b>TO - 247AB</b></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	$T_J=110^\circ C$ , Per leg	$I_{F(AV)}$	15	A
	$T_J=110^\circ C$ , Per device		30	
Non-Repetitive Surge Forward Current $T_p=10ms(50HZ)$ Sine Wave	$T_J=25^\circ C$	$I_{FSM}$	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

**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	$V_F$	$I_F=15\text{A}$	-	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	$\mu\text{A}$
		$V_R=600\text{V}, T_J=125^\circ\text{C}$	-	-	250	$\mu\text{A}$

**DYNAMIC RECOVERY CHARACTERISTICS**

Reverse Recovery Time	$t_{rr}$	$I_F=1\text{A}, V_R=30\text{V}, dI_F/dt=-200\text{A/us}$	-	20	28	ns
Reverse Recovery Time	$t_{rr}$	$I_F=15\text{A}, V_R=300\text{V}$ $dI_F/dt=-200\text{A/us}$	-	28	-	ns
Peak Recovery Current	$I_{RRM}$		-	3.6	-	A
Reverse Recovery Charge	$Q_{rr}$		-	50	-	nC
Reverse Recovery Time	$t_{rr}$	$I_F=15\text{A}, V_R=300\text{V}$ $dI_F/dt=-200\text{A/us}, T_J=125^\circ\text{C}$	-	72	-	ns
Peak Recovery Current	$I_{RRM}$		-	8.2	-	A
Reverse Recovery Charge	$Q_{rr}$		-	295	-	nC

FIG. 1 - Typical Forward Voltage Drop Characteristics

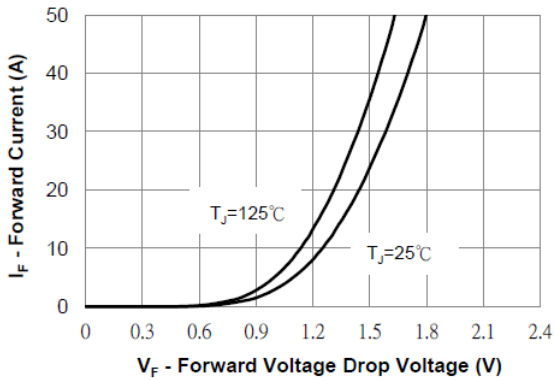


FIG. 2 - Typical Value of Reverse Current vs. Reverse Voltage

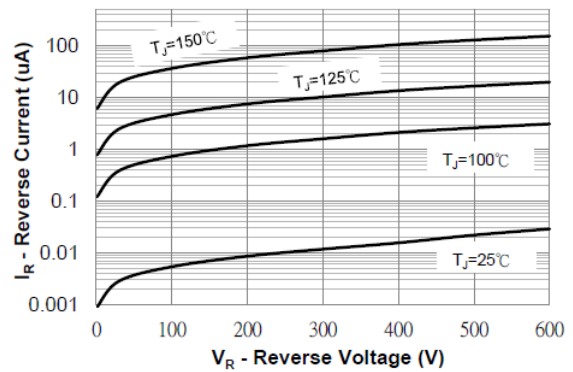


FIG. 3 - Typical Junction Capacitance vs. Reverse Voltage

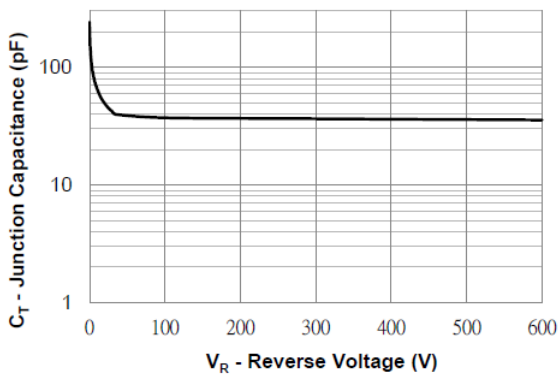


FIG. 4 - Average Forward Current vs. Maximum Allowable Case Temperature

