FAIRCHILD SEMICONDUCTOR®

July 2005

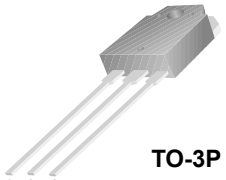
FYA3010DN
Schottky Barrier Rectifier

Features

- Low forward voltage drop
- High frequency properties and switching speed
- Guard ring for over-voltage protection

Applications

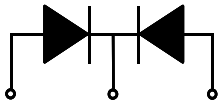
- Switched mode power supply
- Freewheeling diodes



1 2 3

TO-3P

Marking: Y3010DN



1. Anode 2.Cathode 3. Anode

Absolute Maximum Ratings (per diode) T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{RRM}	Maximum Repetitive Reverse Voltage	100	V
V_R	Maximum DC Reverse Voltage	100	V
$I_{F(AV)}$	Average Rectified Forward Current @ T_C = 135°C	30	A
I_{FSM}	Non-repetitive Peak Surge Current (per diode) 60Hz Single Half-Sine Wave	250	A
T_J, T_{STG}	Operating Junction and Storage Temperature	- 65 to +150	°C

Thermal Characteristics T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case (per diode)	0.78	°C/W
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case (per PKG)	0.48	°C/W
$R_{\theta JC}$	Maximum Thermal Resistance, Case to Heatsink	0.2	°C/W

Electrical Characteristics (per diode) T_a = 25°C unless otherwise noted

Symbol	Parameter		Value	Units
V_{FM} *	Maximum Instantaneous Forward Voltage			V
	I_F = 15A	T_C = 25 °C	0.85	
	I_F = 15A	T_C = 125 °C	0.67	
	I_F = 30A	T_C = 25 °C	1.05(Typ.)	
	I_F = 30A	T_C = 125 °C	0.80	
I_{RM} *	Maximum Instantaneous Reverse Current			mA
	@ rated V_R	T_C = 25 °C	1	
		T_C = 125 °C	20	

* Pulse Test: Pulse Width=300μs, Duty Cycle=2%

Typical Performance Characteristics

Figure 1. Typical Forward Voltage Characteristics (per diode)

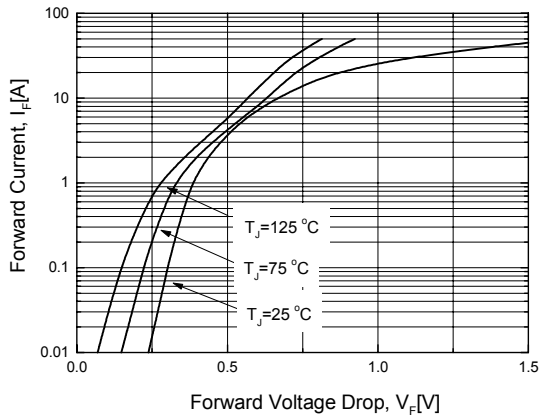


Figure 2. Typical Reverse Current vs. Reverse Voltage (per diode)

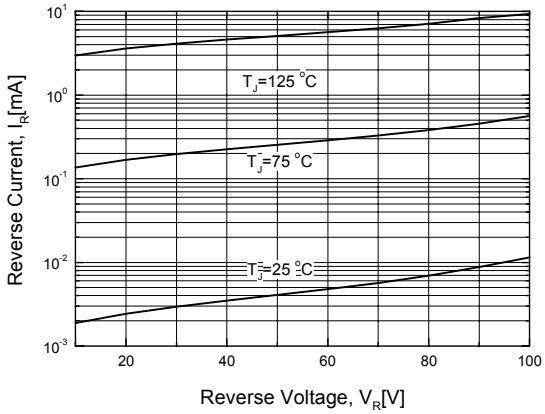


Figure 3. Typical Junction Capacitance (per diode)

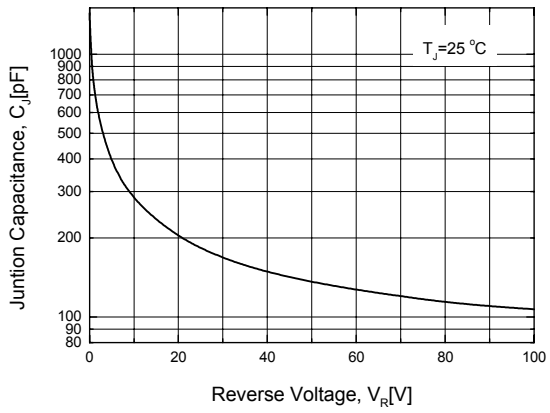


Figure 4. Forward Current Derating Curve

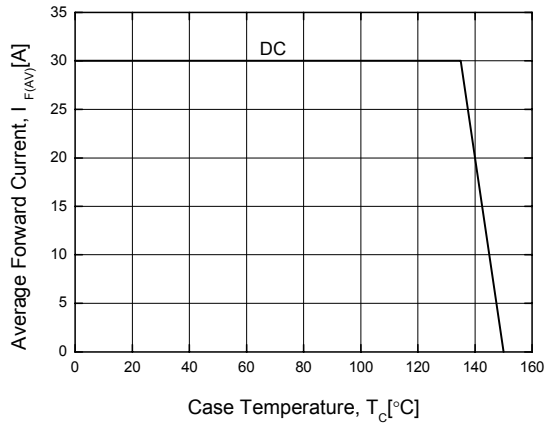


Figure 5. Non-Repetive Surge Current (per diode)

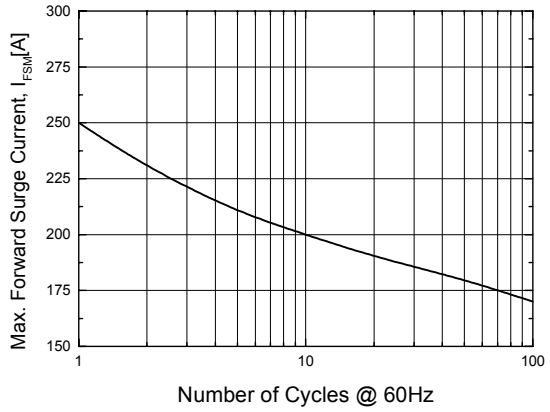
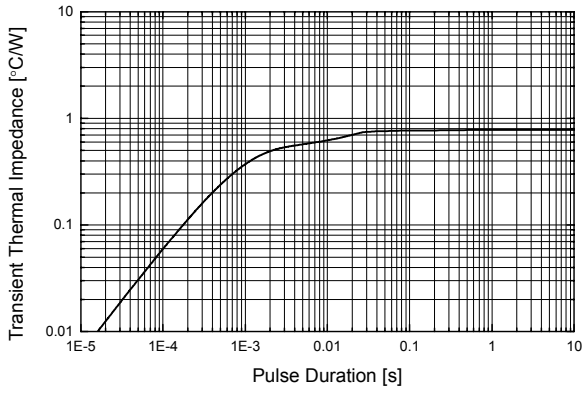
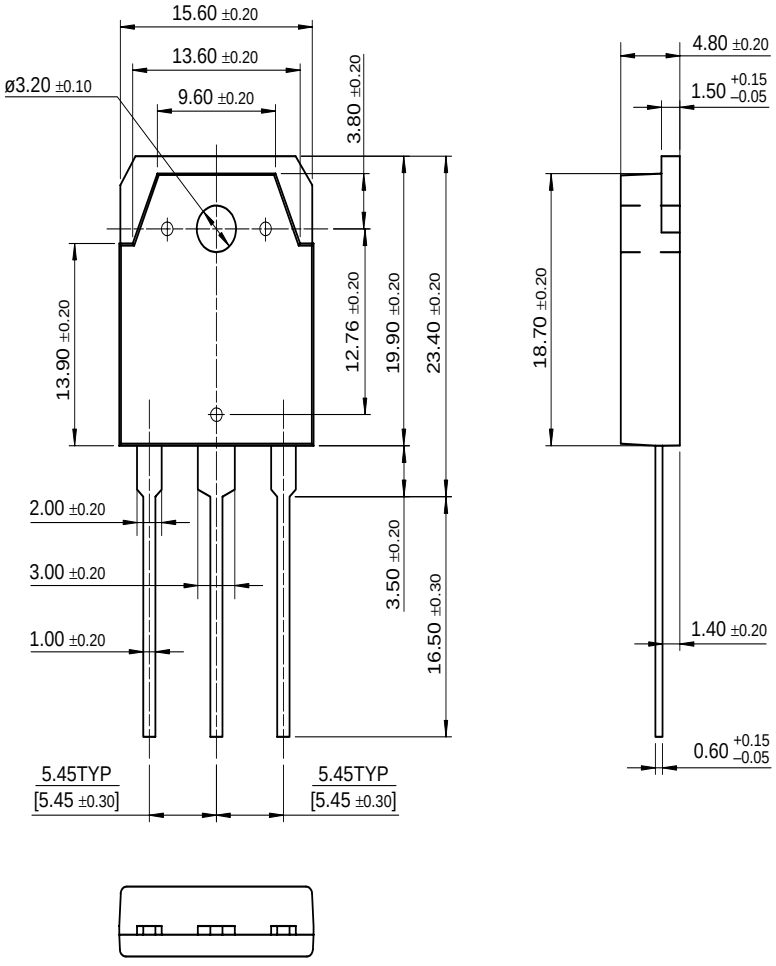


Figure 6. Thermal Impedance Characteristics (per diode)



Mechanical Dimensions

TO-3P



Package Marking and Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
Y3010DN	FYA3010DN	TO-3P	-	-	30

Dimensions in Millimeters

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