FAIRCHILD

SEMICONDUCTOR ™

FFA30U20DN

Features

- Ultrafast with soft recovery
- Low forward voltage

Applications

- Power switching circuits
- Output rectifiers
- Freewheeling diodes
- Switching mode power supply

TO-3P

1 2 3

1. Anode   2. Cathode   3. Anode

ULTRA FAST RECOVERY POWER RECTIFIER

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

Symbol	Parameter	Value	Units
V_{RRM}	Peak Repetitive Reverse Voltage	200	V
$I_{F(AV)}$	Average Rectified Forward Current @ T_C = 100°C	30	A
I_{FSM}	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	300	A
T_J, T_{STG}	Operating Junction and Storage Temperature	- 65 to +150	°C

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	1.4	°C/W

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

Symbol	Parameter		Min.	Typ.	Max.	Units
V_{FM} *	Maximum Instantaneous Forward Voltage					V
	I_F = 30A	T_C = 25 °C	-	-	1.2	
	I_F = 30A	T_C = 100 °C	-	-	1.0	
I_{RM} *	Maximum Instantaneous Reverse Current					µA
	@ rated V_R	T_C = 25 °C	-	-	30	
		T_C = 100 °C	-	-	300	
t_{rr}	Maximum Reverse Recovery Time		-	-	40	ns
I_{rr}	Maximum Reverse Recovery Current		-	-	4.0	A
Q_{rr}	Maximum Reverse Recovery Charge		-	-	80	nC
	(I_F =30A, di/dt = 200A/µs)					
W_{AVL}	Avalanche Energy		0.5	-	-	mJ

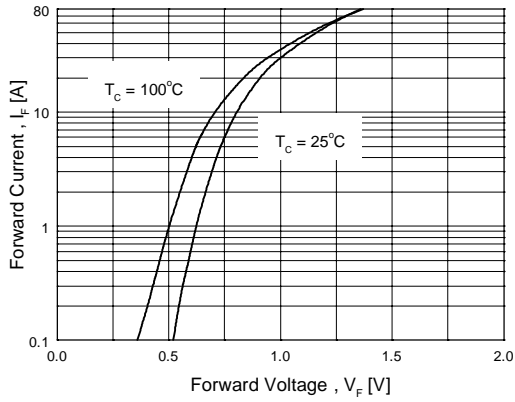* Pulse Test: Pulse Width=300µs, Duty Cycle=2%

Typical Characteristics

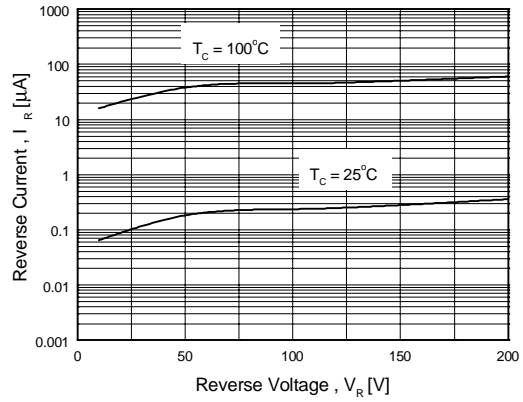Figure 1. Typical Forward Voltage Drop
vs. Forward Current

Figure 2. Typical Reverse Current
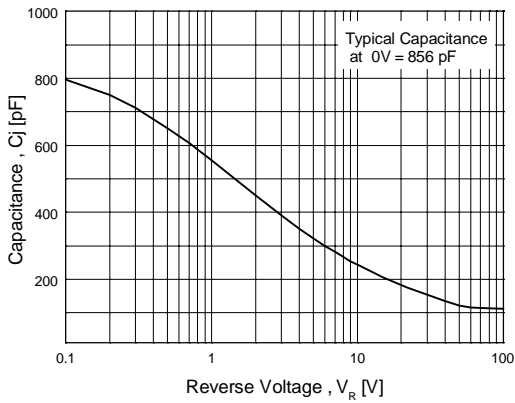vs. Reverse Voltage
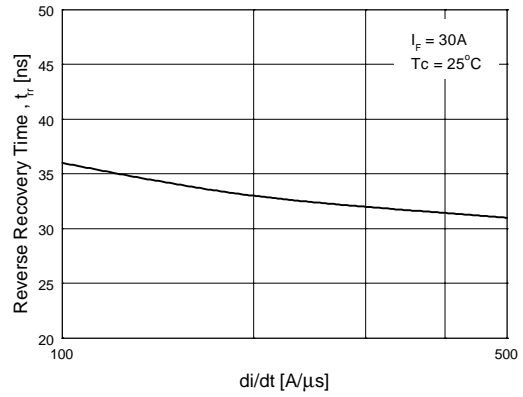
Figure 3. Typical Junction Capacitance
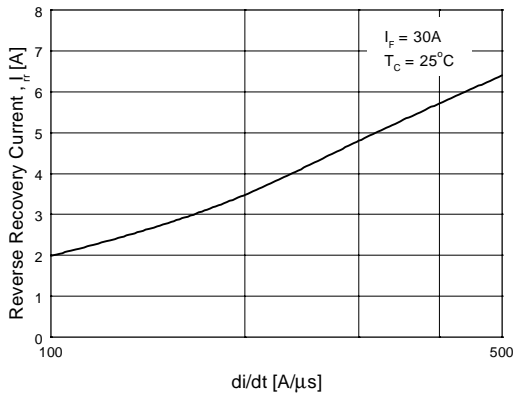
Figure 4. Typical Reverse Recovery Time
vs. di/dt

Figure 5. Typical Reverse Recovery Current
vs. di/dt

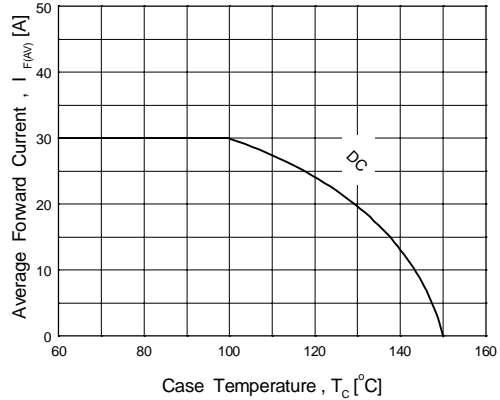Figure 6. Forward Current Derating Curve

Package Dimensions

TO-3P

15.60 ±0.20

13.60 ±0.20

9.60 ±0.20

ø3.20 ±0.10

3.80 ±0.20

13.90 ±0.20

12.76 ±0.20

19.90 ±0.20

23.40 ±0.20

2.00 ±0.20

3.00 ±0.20

1.00 ±0.20

3.50 ±0.20

16.50 ±0.30

5.45TYP
[5.45 ±0.30]

5.45TYP
[5.45 ±0.30]

4.80 ±0.20

1.50 +0.15 −0.05

18.70 ±0.20

1.40 ±0.20

0.60 +0.15 −0.05
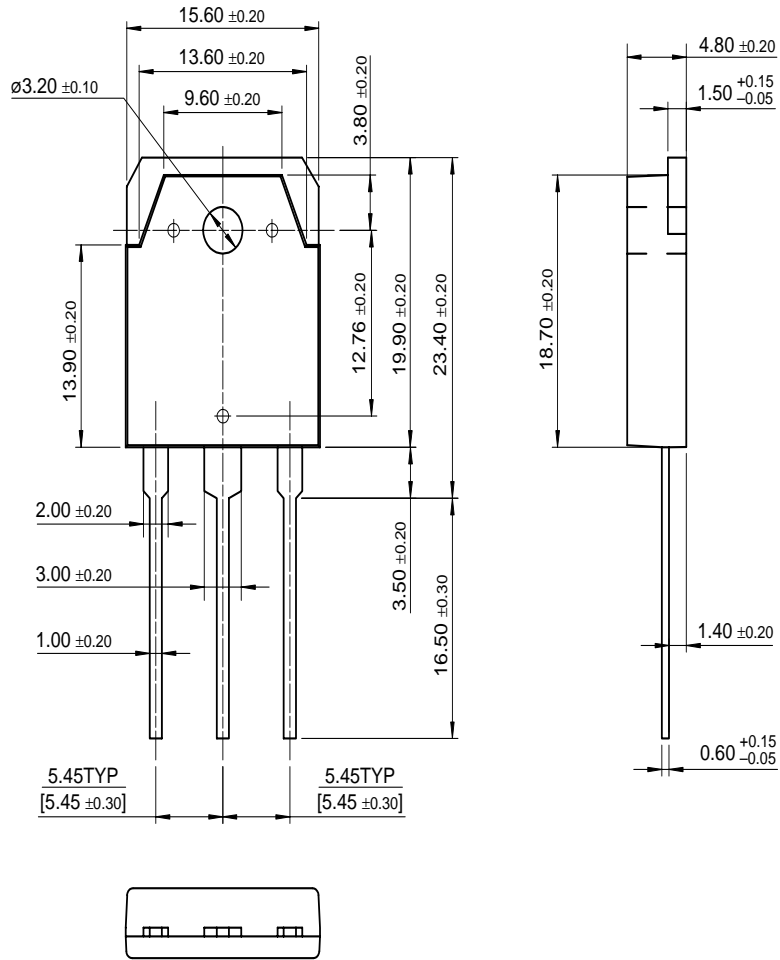
Dimensions in Millimeters

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Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
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FFA30U20DN
30A/200V Ultra Fast Recovery Rectifiers

Contents

[Features](#) | [Applications](#) | [Product status/pricing/packaging](#)

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This page [Print version](#)

Features

- Ultrafast with Soft Recovery
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[back to top](#)

Applications

- Power Switching Circuits
- Output rectifiers
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[back to top](#)

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
FFA30U20DNTU	Full Production	$1.82	TO-3P	3	RAIL

* 1,000 piece Budgetary Pricing

[back to top](#)