



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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FFPF15UP20S

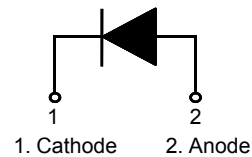
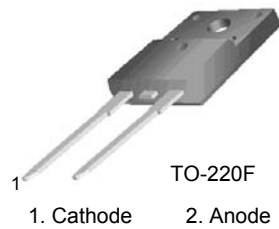
Ultrafast Recovery Power Rectifier

Features

- Ultrafast with Soft Recovery : < 45ns (@ $I_F = 15A$)
- High Reverse Voltage : $V_{RRM} = 200V$
- Avalanche Energy Rated
- Planar Construction

Applications

- Output Rectifiers
- Switching Mode Power Supply
- Free-wheeling diode for motor application
- Power switching circuits



Absolute Maximum Ratings $T_C = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{RRM}	Peak Repetitive Reverse Voltage	200	V
V_{RWM}	Working Peak Reverse Voltage	200	V
V_R	DC Blocking Voltage	200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 105^\circ C$	15	A
I_{FSM}	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	150	A
T_J, T_{STG}	Operating Junction and Storage Temperature	- 65 to +150	$^\circ C$

Thermal Characteristics

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	3.8	$^\circ C/W$

Package Marking and Ordering Information

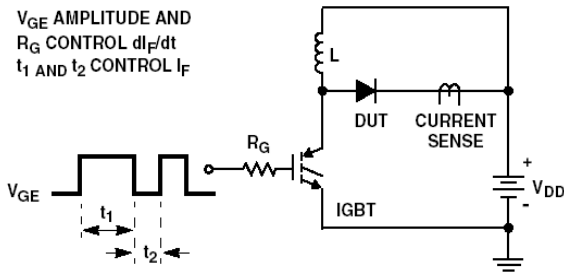
Device Marking	Device	Package	Reel Size	Tape Width	Quantity
F15UP20S	FFPF15UP20STU	TO-220F	-	-	50

Electrical Characteristics T_C = 25°C unless otherwise noted

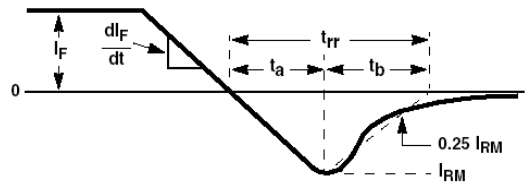
Symbol	Parameter	Min.	Typ.	Max.	Units
V _{FM} *	I _F = 15A	-	-	1.15	V
	I _F = 15A	-	-	1.0	V
I _{RM} *	V _R = 200V	-	-	100	μA
	V _R = 200V	-	-	500	μA
t _{rr}	I _F = 1A, di/dt = 100A/μs, V _{CC} = 30V	-	-	35	ns
	I _F = 15A, di/dt = 200A/μs, V _{CC} = 130V	-	-	45	ns
t _a t _b Q _{rr}	I _F = 15A, di/dt = 200A/μs, V _{CC} = 130V	T _C = 25 °C	-	13	ns
		T _C = 25 °C	-	11	ns
		T _C = 25 °C	-	24	nC
W _{AVL}	Avalanche Energy (L = 40mH)	20	-	-	mJ

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

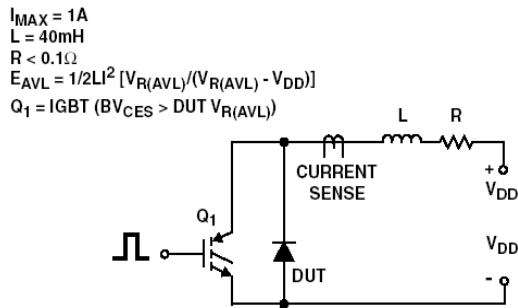
Test Circuit and Waveforms



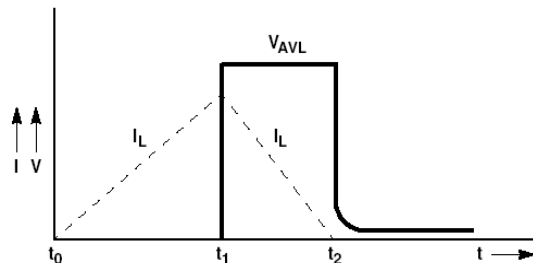
t_{rr} TEST CIRCUIT



t_{rr} WAVEFORMS AND DEFINITIONS



AVALANCHE ENERGY TEST CIRCUIT



AVALANCHE CURRENT AND VOLTAGE WAVEFORMS

Typical Performance Characteristics

Figure 1. Typical Forward Voltage Drop

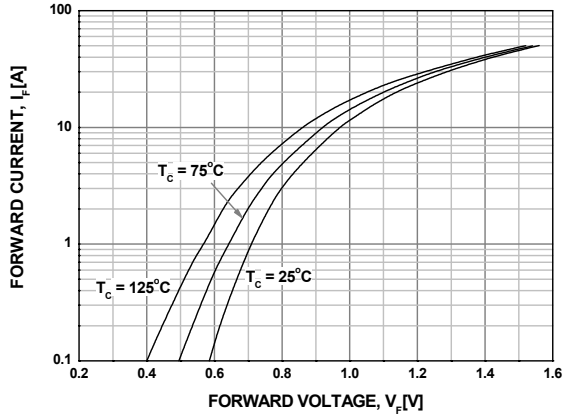


Figure 2. Typical Reverse Current

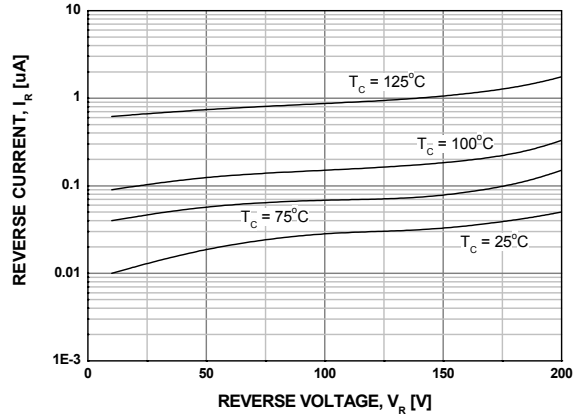


Figure 3. Typical Junction Capacitance

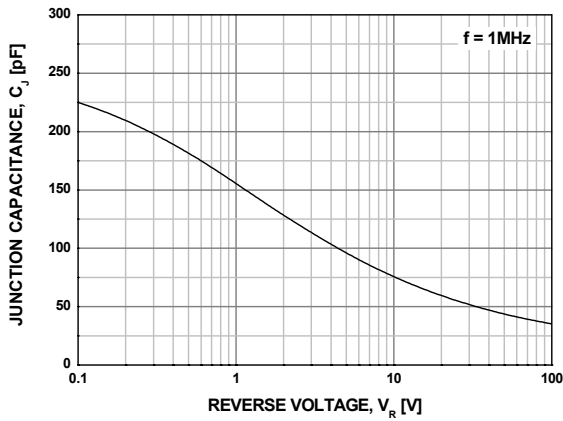


Figure 4. Typical Reverse Recovery Time

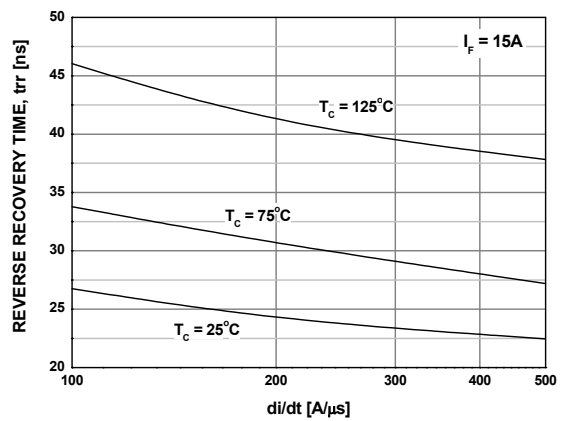


Figure 5. Typical Reverse Recovery Current

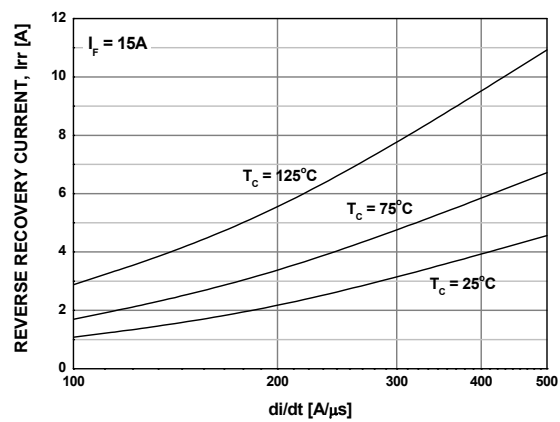
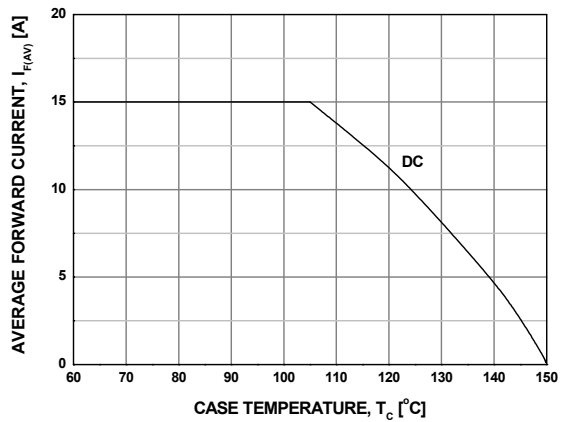


Figure 6. Forward Current Deration Curve



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E ² CMOS™	i-Lo™	OCX™	μSerDes™	UltraFET®
EnSigna™	ImpliedDisconnect™	OCXPro™	Scalar Pump™	UniFET™
FACT™	IntelliMAX™	OPTOLOGIC®	SILENT SWITCHER®	VCX™
FACT Quiet Series™		OPTOPLANAR™	SMART START™	Wire™
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The Power Franchise®		POP™	Stealth™	
Programmable Active Droop™		Power247™	SuperFET™	
		PowerEdge™	SuperSOT™-3	

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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