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!

Contact us

FAIRCHILD™

Is Now Part of

ON Semiconductor®

To learn more about ON Semiconductor, please visit our website at
www.onsemi.com

Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.
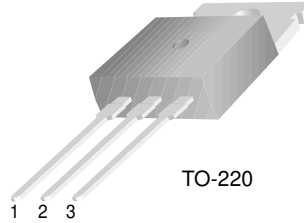
FAIRCHILD
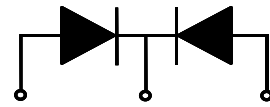### SEMICONDUCTOR®

MBRP3010N

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

Applications
- Switched mode power supply
- Freewheeling diodes

TO-220

1 2 3

1. Anode   2.Cathode   3. Anode

SCHOTTKY BARRIER RECTIFIER

Absolute Maximum Ratings T_C=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 = 105°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

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case (per diode)	1.7	°C/W

Electrical Characteristics (per diode)

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 @ rated V_R			mA
		T_C = 25 °C	1	
		T_C = 125 °C	20	

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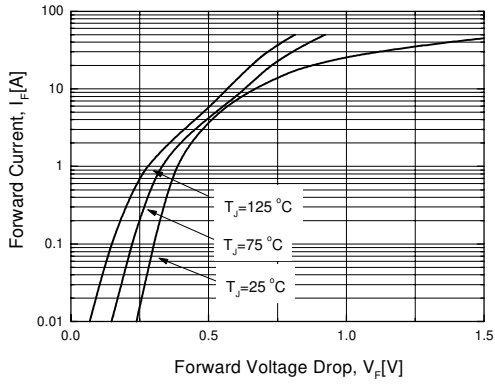
Typical Characteristics

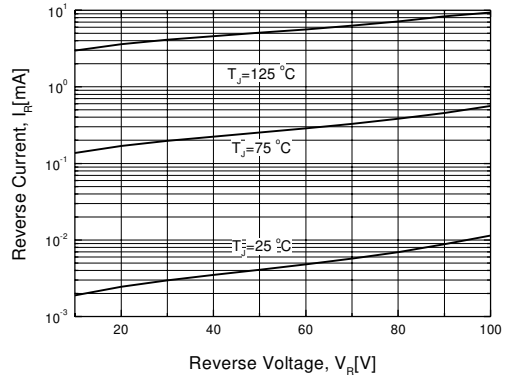Figure 1. Typical Forward Voltage Characteristics (per diode)

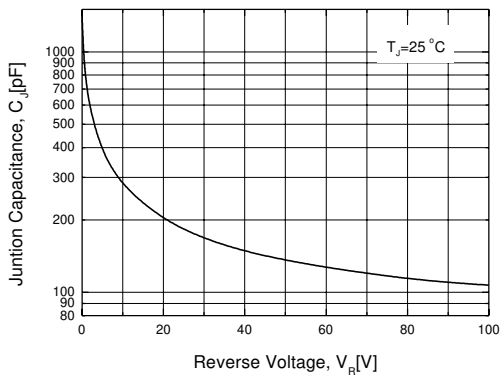Figure 2. Typical Reverse Current vs. Reverse Voltage (per diode)

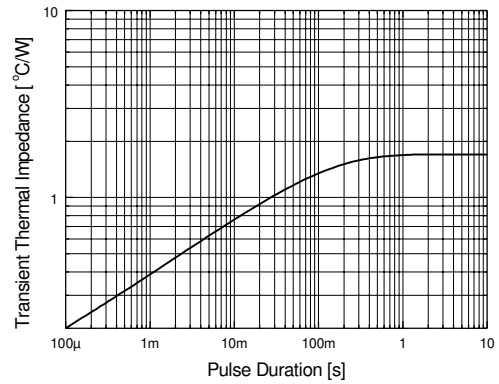Figure 3. Typical Junction Capacitance (per diode)

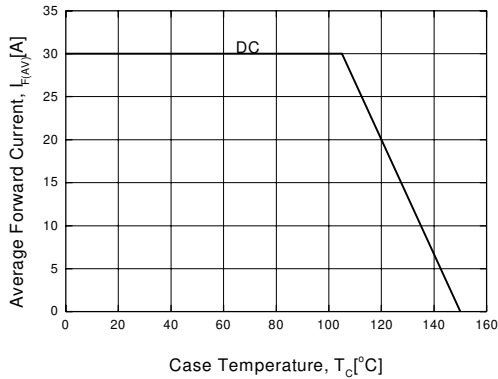Figure 4. Thermal Impedance Characteristics (per diode)
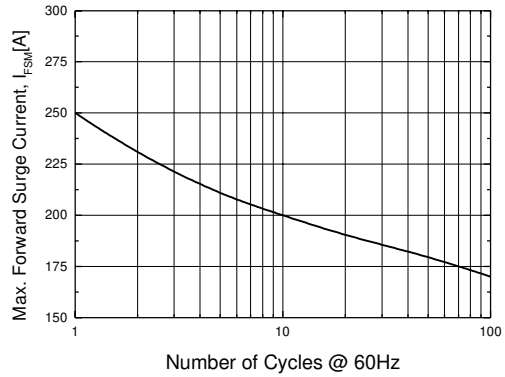

Figure 5. Forward Current Derating Curve

Figure 6. Non-Repetive Surge Current (per diode)

Package Dimensions

TO-220

9.90 ±0.20

(8.70)

(1.70)

1.30 ±0.10

ø3.60 ±0.10

2.80 ±0.10

9.20 ±0.20

(1.46)

(3.70)

15.90 ±0.20

18.95MAX.

13.08 ±0.20

(1.00)

(3.00)

(45°)

10.08 ±0.30

1.27 ±0.10

1.52 ±0.10

0.80 ±0.10

2.54TYP
[2.54 ±0.20]

2.54TYP
[2.54 ±0.20]

4.50 ±0.20

1.30 +0.10 −0.05

0.50 +0.10 −0.05

2.40 ±0.20

10.00 ±0.20
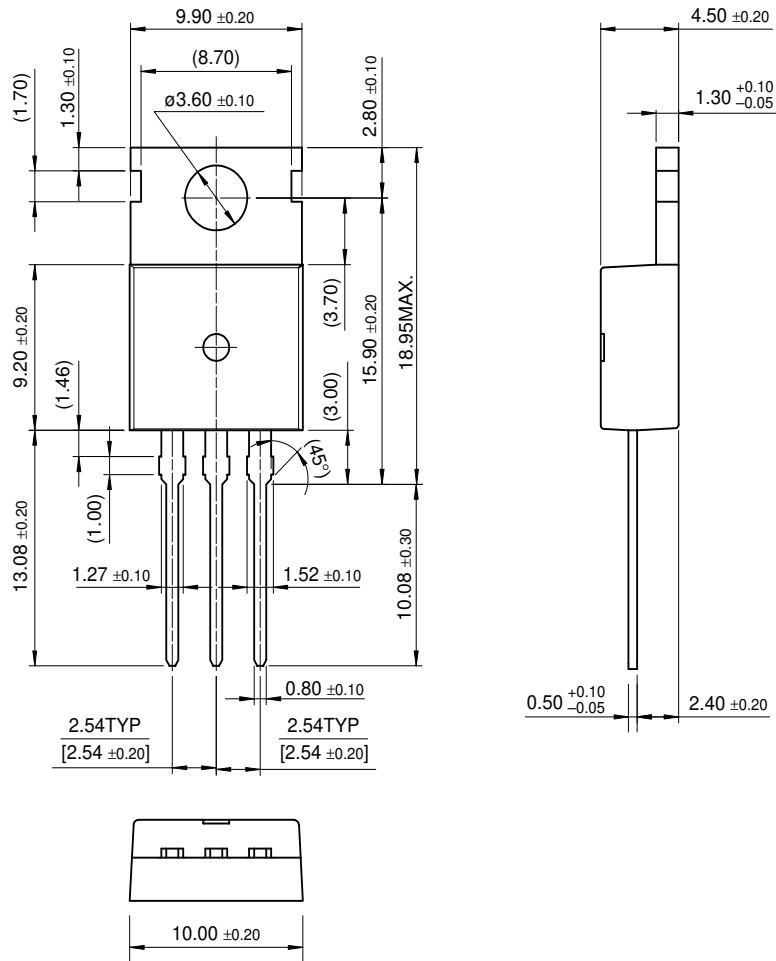
Dimensions in Millimeters

Rev. A, January 2004

TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx™	FACT Quiet series™	LittleFET™	Power247™	SuperSOT™-3
ActiveArray™	FAST®	MICROCOUPLER™	PowerTrench®	SuperSOT™-6
Bottomless™	FASTr™	MicroFET™	QFET™	SuperSOT™-8
CoolFET™	FRFET™	MicroPak™	QS™	SyncFET™
CROSSVOLT™	GlobalOptoisolator™	MICROWIRE™	QT Optoelectronics™	TinyLogic®
DOME™	GTO™	MSX™	Quiet Series™	TINYOPTO™
EcoSPARK™	HiSeC™	MSXPro™	RapidConfigure™	TruTranslation™
E^2CMOS™	I^2C™	OCX™	RapidConnect™	UHC™
EnSigna™	ImpliedDisconnect™	OCXPro™	SILENT SWITCHER®	UltraFET®
FACT™	ISOPLANAR™	OPTOLOGIC®	SMART START™	VCX™
Across the board. Around the world.™		OPTOPLANAR™	SPM™	
The Power Franchise™		PACMAN™	Stealth™	
Programmable Active Droop™		POP™	SuperFET™	

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

PUBLICATION ORDERING INFORMATION

© Semiconductor Components Industries, LLC

www.onsemi.com