

HIGH VOLTAGE POWER SCHOTTKY RECTIFIER MBR10150C

General Description

High voltage dual Schottky rectifier suited for switch mode power supplies and other power converters. This device is intended for use in medium voltage operation, and particularly, in high frequency circuits where low switching losses and low noise are required.

The MBR10150C is available in standard TO-220F-3, TO-220-3 and TO-220-3 (2) packages.

Features

- High Surge Capacity
- 150°C Operating Junction Temperature
- 10A Total (5A Per Diode Leg)
- Guard-ring for Stress Protection
- Pb-free Packages are Available

Main Product Characteristics

$I_{F(AV)}$	2×5A
V_{RRM}	150V
T_J	150°C
$V_F(max)$	0.85V

Mechanical Characteristics

- Case: Epoxy, Molded
- Epoxy Meets UL 94V-0 @ 0.125in.
- Weight (Approximately):
1.9Grams (TO-220-3, TO-220-3 (2) and TO-220F-3)
- Finish: All External Surfaces Corrosion Resistant and Terminal
- Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Maximum for 10 Seconds

Applications

- Power Supply – Output Rectification
- Power Management
- Instrumentation

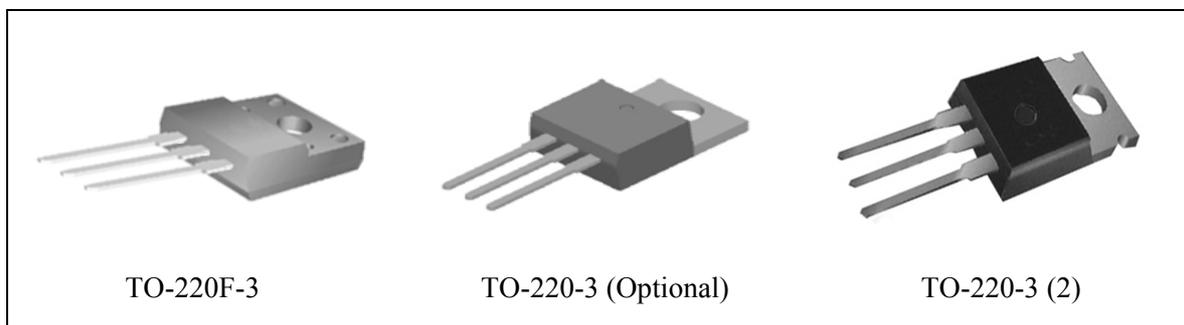


Figure 1. Package Types of MBR10150C

HIGH VOLTAGE POWER SCHOTTKY RECTIFIER MBR10150C

Pin Configuration

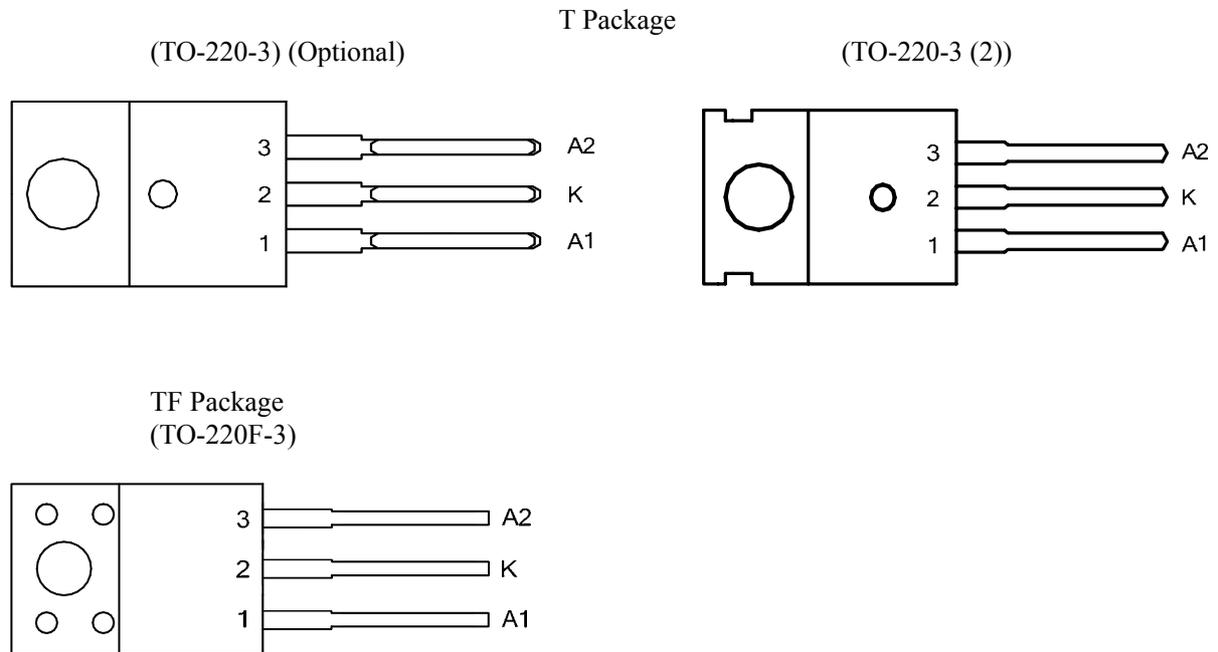


Figure 2. Pin Configuration of MBR10150C (Top View)

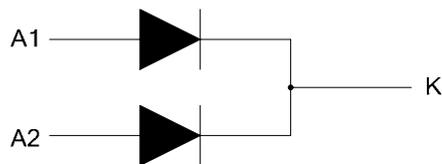
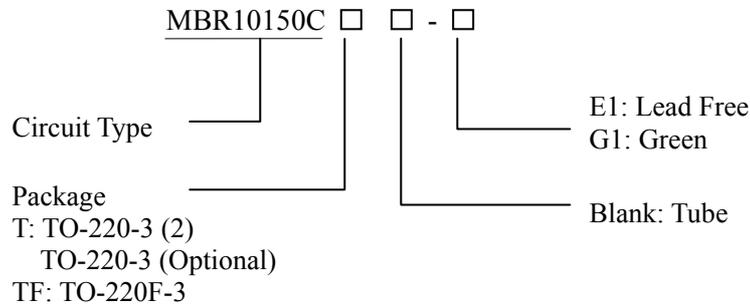


Figure 3. Internal Structure of MBR10150C

HIGH VOLTAGE POWER SCHOTTKY RECTIFIER MBR10150C

Ordering Information



Package	Part Number		Marking ID		Packing Type
	Lead Free	Green	Lead Free	Green	
TO-220-3 (2)	MBR10150CT-E1	MBR10150CT-G1	MBR10150CT-E1	MBR10150CT-G1	Tube
TO-220F-3	MBR10150CTF-E1	MBR10150CTF-G1	MBR10150CTF-E1	MBR10150CTF-G1	Tube

BCD Semiconductor's Pb-free products, as designated with "E1" suffix in the part number, are RoHS compliant. Products with "G1" suffix are available in green packages.

Absolute Maximum Ratings (Per Diode Leg) (Note 1)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	150	V
Average Rectified Forward Current (Rated V_R) $T_C=142^\circ\text{C}$	$I_{F(AV)}$	5	A
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20kHz) $T_C=142^\circ\text{C}$	I_{FRM}	10	A
Non Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Half Wave, Single Phase, 60Hz)	I_{FSM}	100	A
Operating Junction Temperature Range (Note 2)	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$
Voltage Rate of Change (Rated V_R)	dv/dt	10000	V/ μs
ESD (Machine Model=C)		>400	V
ESD (Human Body Model=3B)		>8000	V

Note 1: Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "Recommended Operating Conditions" is not implied. Exposure to "Absolute Maximum Ratings" for extended periods may affect device reliability.

Note 2: The heat generated must be less than the thermal conductivity from Junction-to-Ambient: $dP_D/dT_J < 1/\theta_{JA}$.

**HIGH VOLTAGE POWER SCHOTTKY RECTIFIER****MBR10150C****Recommended Operating Conditions**

Parameter	Symbol	Condition	Value		Unit
Maximum Thermal Resistance	θ_{JC}	Junction to Case	TO-220-3/ TO-220-3 (2)	3.0	°C/W
			TO-220F-3	4.5	
	θ_{JA}	Junction Ambient	TO-220-3/ TO-220-3 (2)	60	
			TO-220F-3	60	

Electrical Characteristics

Parameter	Symbol	Conditions	Value	Unit
Maximum Instantaneous Forward Voltage Drop (Note 3)	V_F	$I_F=5A, T_C=25^\circ C$	0.92	V
		$I_F=5A, T_C=125^\circ C$	0.82	
Maximum Instantaneous Reverse Current (Note 3)	I_R	Rated DC Voltage, $T_C=25^\circ C$	0.1	mA
		Rated DC Voltage, $T_C=125^\circ C$	15.0	

Note 3: Pulse Test: Pulse Width=300 μ s, Duty Cycle \leq 2.0%.

Typical Performance Characteristics

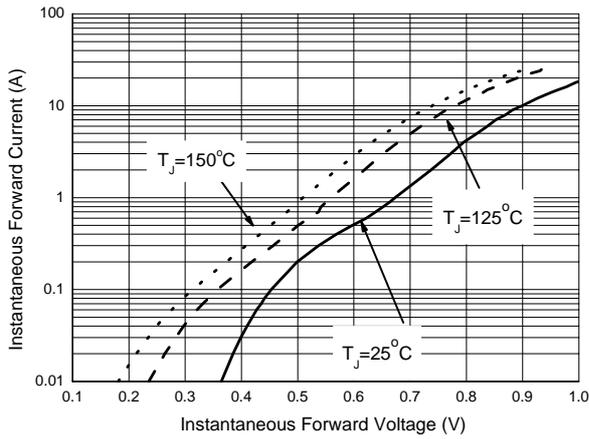


Figure 4. Typical Forward Voltage Per Diode

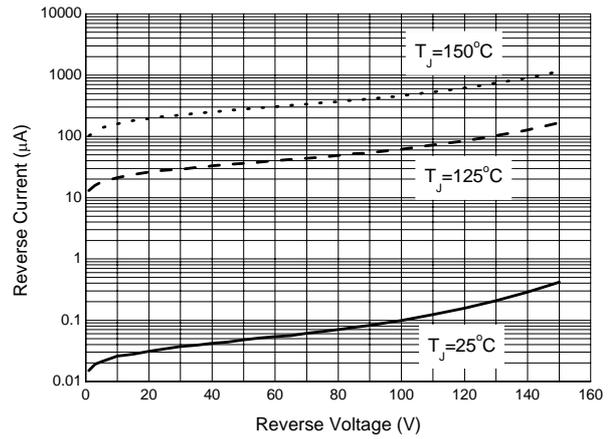


Figure 5. Typical Reverse Current Per Diode

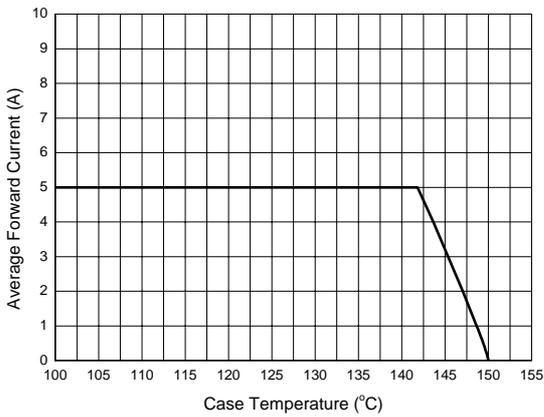


Figure 6. Average Forward Current vs. Case Temperature (Square, Per Diode)

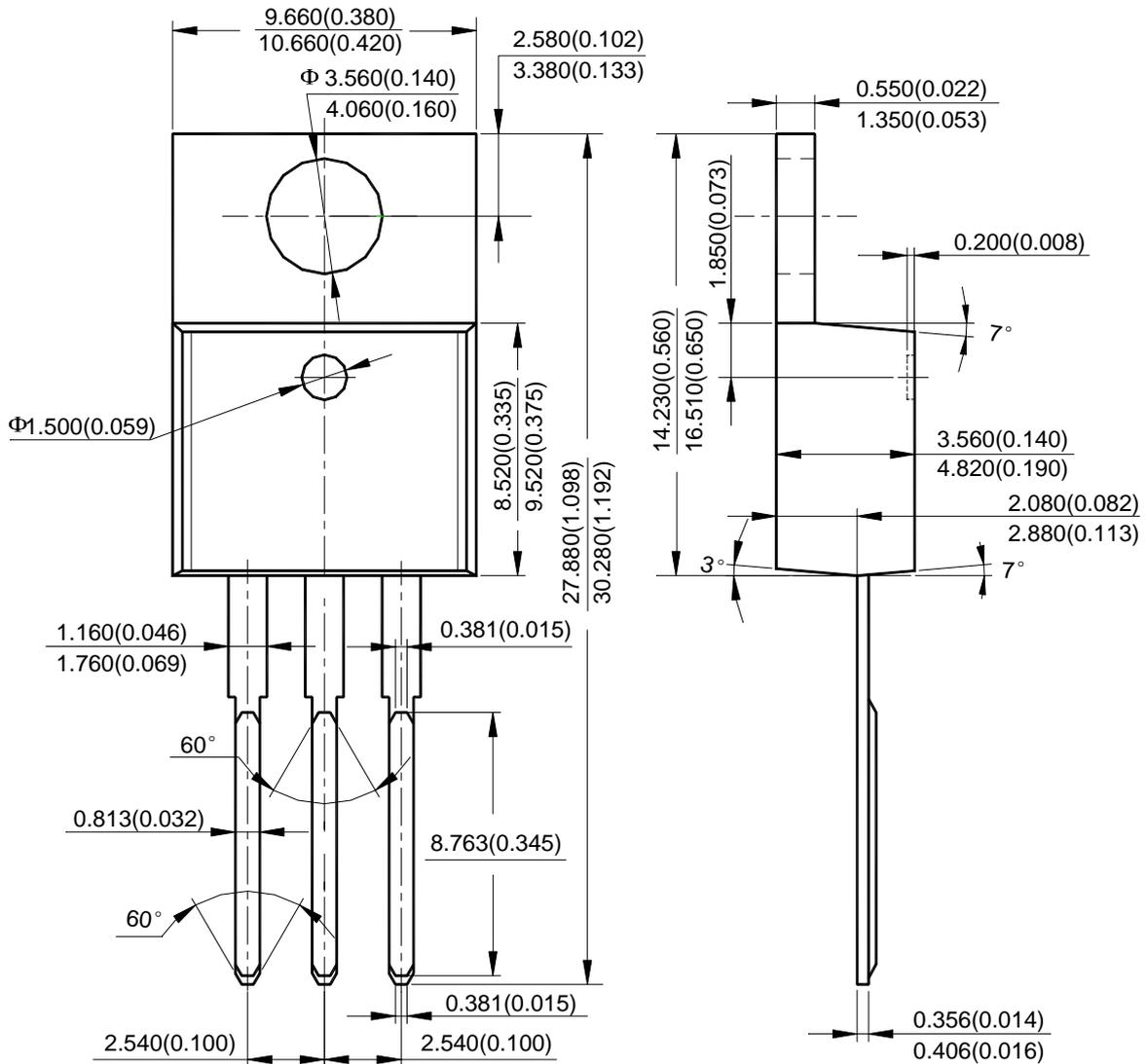
HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

MBR10150C

Mechanical Dimensions

TO-220-3
(Optional)

Unit: mm(inch)



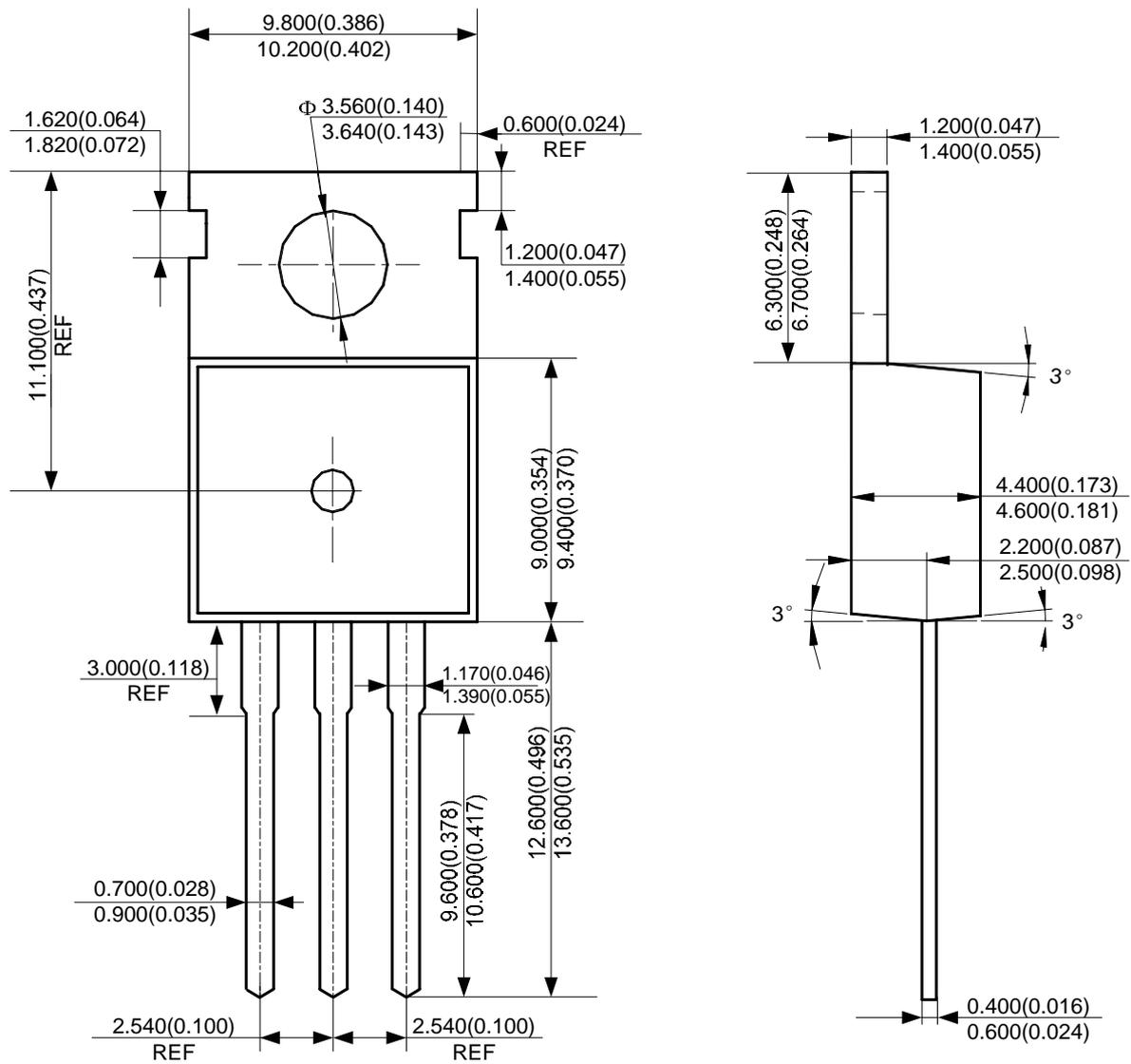
HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

MBR10150C

Mechanical Dimensions (Continued)

TO-220-3 (2)

Unit: mm(inch)



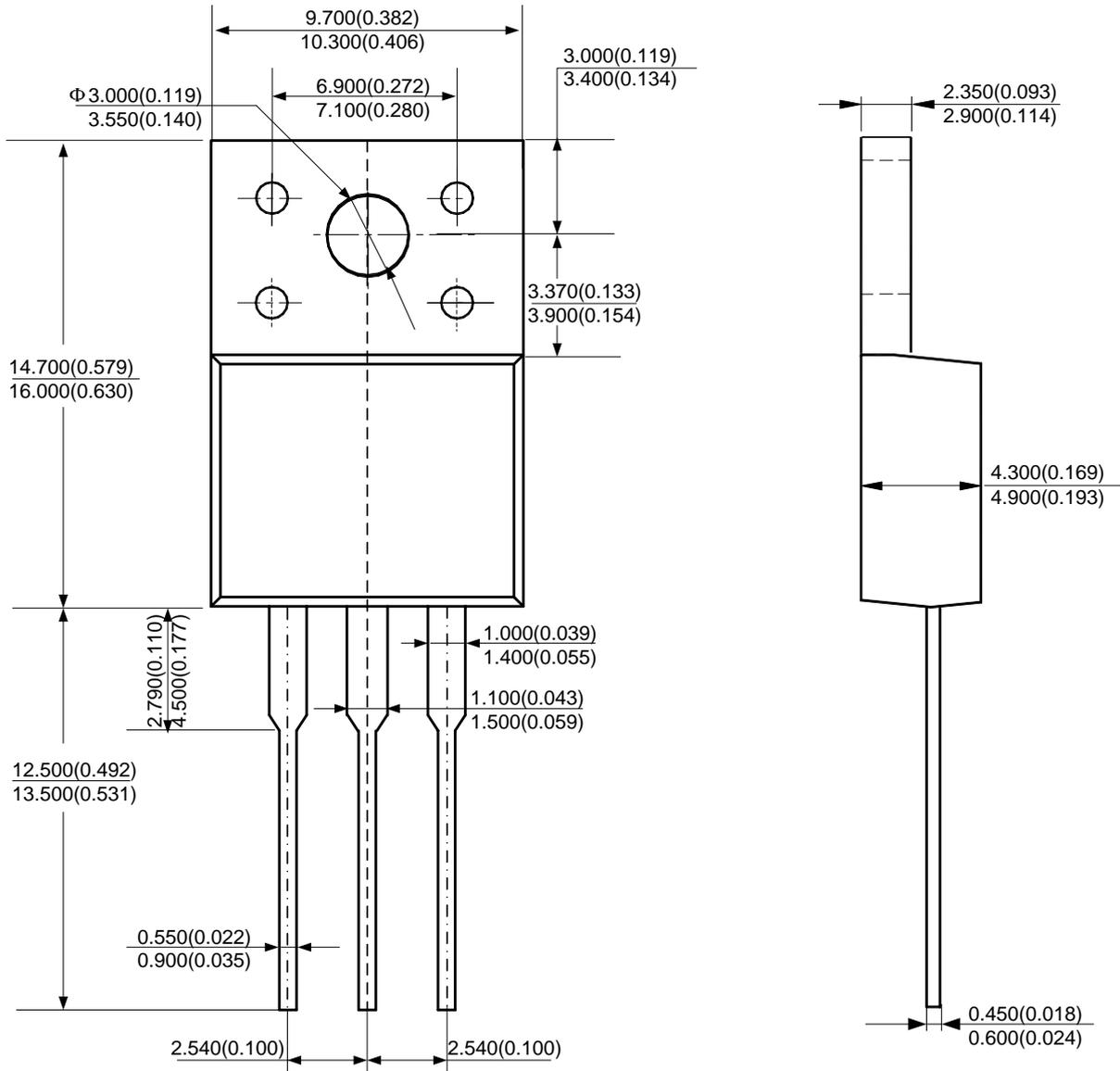
HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

MBR10150C

Mechanical Dimensions (Continued)

TO-220F-3

Unit: mm(inch)





BCD Semiconductor Manufacturing Limited

<http://www.bcdsemi.com>

IMPORTANT NOTICE

BCD Semiconductor Manufacturing Limited reserves the right to make changes without further notice to any products or specifications herein. BCD Semiconductor Manufacturing Limited does not assume any responsibility for use of any its products for any particular purpose, nor does BCD Semiconductor Manufacturing Limited assume any liability arising out of the application or use of any its products or circuits. BCD Semiconductor Manufacturing Limited does not convey any license under its patent rights or other rights nor the rights of others.

MAIN SITE

- Headquarters

BCD Semiconductor Manufacturing Limited

No. 1600, Zi Xing Road, Shanghai ZiZhu Science-based Industrial Park, 200241, China
Tel: +86-21-24162266, Fax: +86-21-24162277

- Wafer Fab

Shanghai SIM-BCD Semiconductor Manufacturing Co., Ltd.

800 Yi Shan Road, Shanghai 200233, China
Tel: +86-21-6485 1491, Fax: +86-21-5450 0008

REGIONAL SALES OFFICE

Shenzhen Office

Shanghai SIM-BCD Semiconductor Manufacturing Co., Ltd., Shenzhen Office

Unit A Room 1203, Skyworth Bldg., Gaoxin Ave. 1.S., Nanshan District, Shenzhen, China
Tel: +86-755-8826 7951
Fax: +86-755-8826 7865

Taiwan Office

BCD Semiconductor (Taiwan) Company Limited

4F, 298-1, Rui Guang Road, Nei-Hu District, Taipei, Taiwan
Tel: +886-2-2656 2808
Fax: +886-2-2656 2806

USA Office

BCD Semiconductor Corp.

30920 Huntwood Ave. Hayward, CA 94544, USA
Tel : +1-510-324-2988
Fax: +1-510-324-2788



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.