

# MBR1045CD-AU

## Surface Mount Schottky Barrier Rectifier

**Voltage** 45 V **Current** 10 A

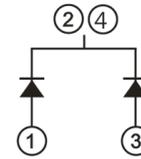
### Features

- Low power loss, high efficiency
- High surge current capability
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : TO-252AA Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.3217 grams

### TO-252AA



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	45	V
Maximum RMS Voltage	V <sub>RMS</sub>	32	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	45	V
Maximum Average Forward Current	I <sub>F(AV)</sub>	10	A
per device per diode		5	
Peak Forward Surge Current : 8.3 ms Single Half Sine-Wave Superimposed On Rated Load	I <sub>FSM</sub>	130	A
Typical Junction Capacitance Measured at 1 MHz And Applied V <sub>R</sub> = 4 V	C <sub>J</sub>	235	pF
Typical Thermal Resistance per diode	(Note 1) R <sub>θJA</sub>	50	°C/W
	(Note 2) R <sub>θJC</sub>	5.3	
	(Note 2) R <sub>θJL</sub>	3.9	
Operating Junction Temperature Range	T <sub>J</sub>	-55~175	°C
Storage Temperature Range	T <sub>STG</sub>	-55~175	°C

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## Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward Voltage Per Diode	$V_F$	$I_F = 1\text{ A}, T_J = 25^\circ\text{C}$	-	0.42	0.47	V
		$I_F = 3\text{ A}, T_J = 25^\circ\text{C}$	-	0.49	0.54	
		$I_F = 5\text{ A}, T_J = 25^\circ\text{C}$	-	0.54	0.6	
		$I_F = 1\text{ A}, T_J = 125^\circ\text{C}$	-	0.3	0.35	
		$I_F = 3\text{ A}, T_J = 125^\circ\text{C}$	-	0.41	0.46	
		$I_F = 5\text{ A}, T_J = 125^\circ\text{C}$	-	0.49	0.54	
Reverse Current Per Diode <sup>(Note 3)</sup>	$I_R$	$V_R = 36\text{ V}, T_J = 25^\circ\text{C}$	-	2.6	30	$\mu\text{A}$
		$V_R = 45\text{ V}, T_J = 25^\circ\text{C}$	-	4.3	50	
		$V_R = 45\text{ V}, T_J = 125^\circ\text{C}$	-	3.6	40	mA

NOTES :

1. Mounted on a FR4 PCB, single-sided copper, standard footprint.
2. Mounted on a FR4 PCB, single-sided copper, with 100 cm<sup>2</sup> copper pad area.
3. Short duration pulse test used to minimize self-heating effect.

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## TYPICAL CHARACTERISTIC CURVES

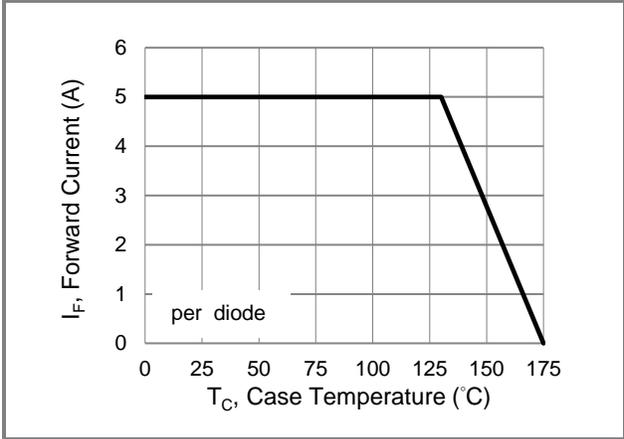


Fig.1 Typical Junction Capacitance

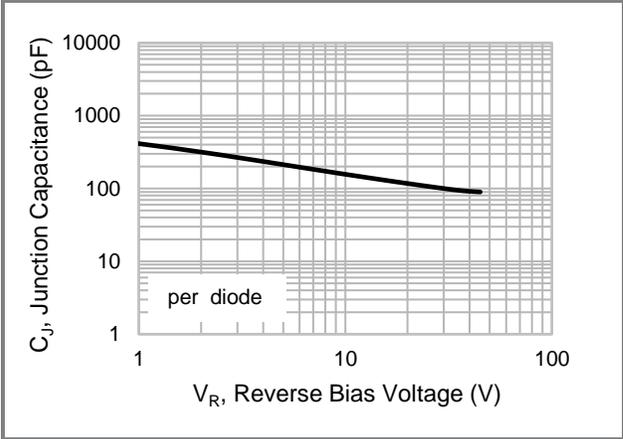


Fig.2 Typical Reverse Characteristics

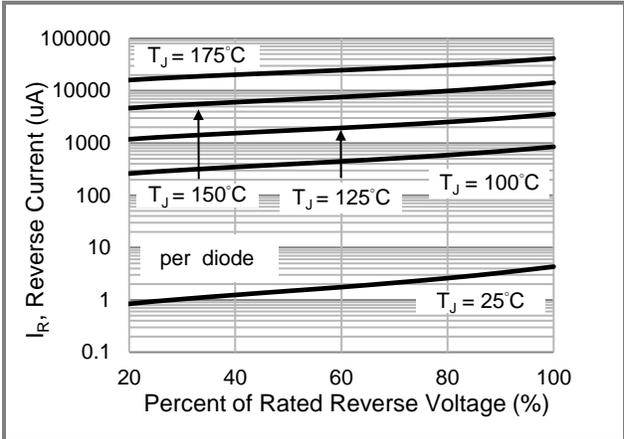


Fig.3 Typical Forward Characteristics

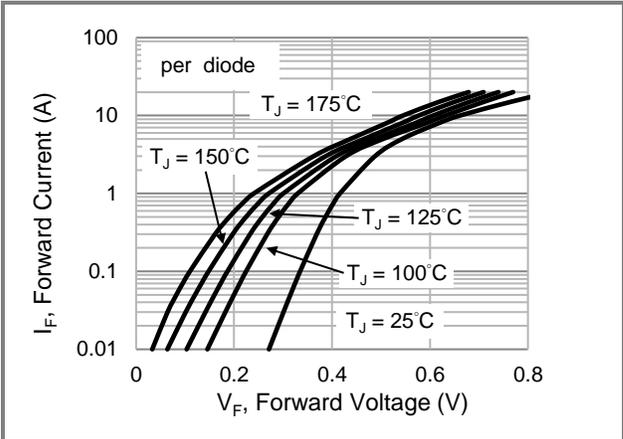


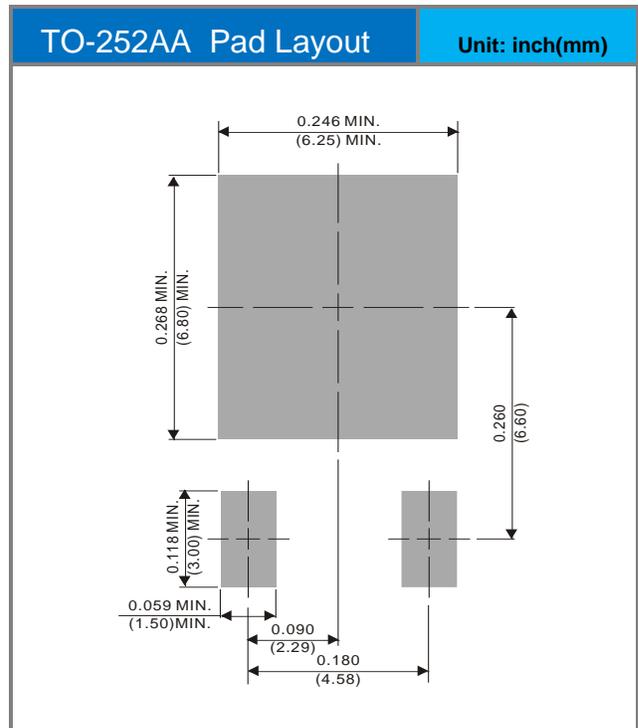
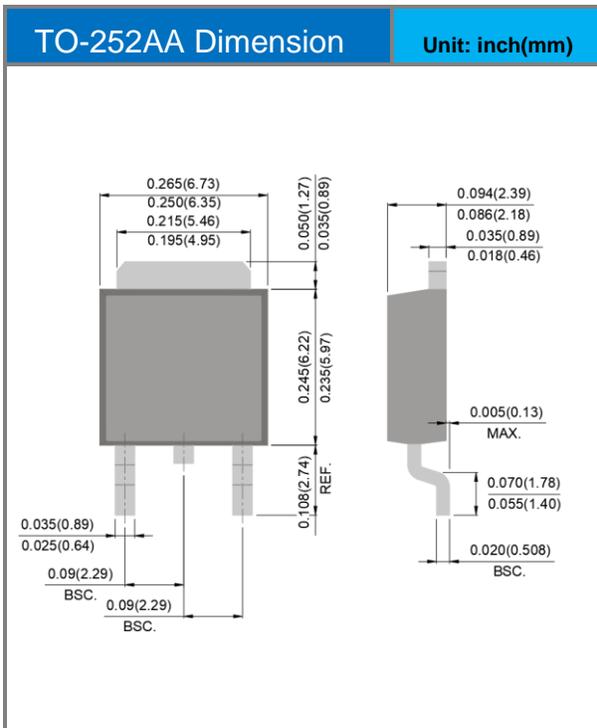
Fig.4 Typical Reverse Characteristics

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## Product and Packing Information

Part No.	Package Type	Packing Type	Marking
MBR1045CD-AU	TO-252AA	3K pcs / 13" reel	MBR1045C

## Packaging Information & Mounting Pad Layout



## **MBR1045CD-AU**

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