

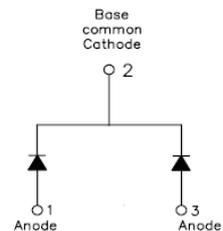
## MBRB3045CT SCHOTTKY RECTIFIER

### Applications:

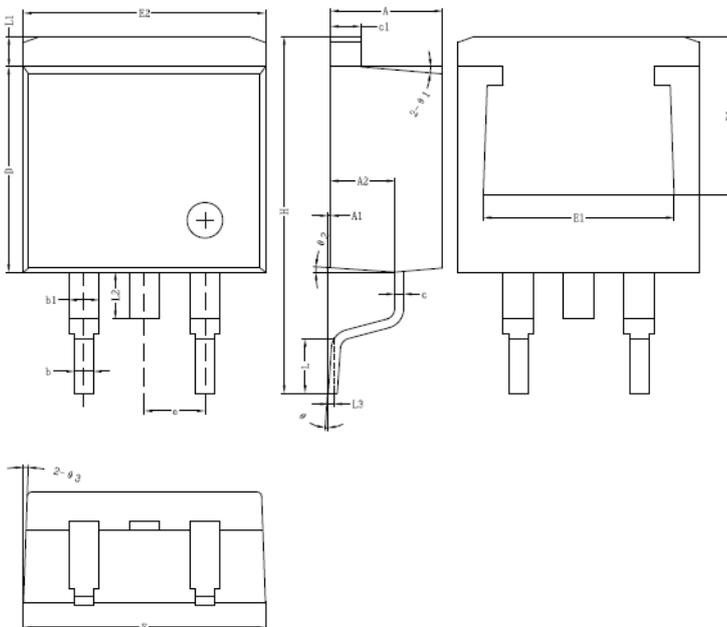
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

- 200°C T<sub>J</sub> operation
- Center tap configuration
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Pure tin plated, solderable per MIL-STD-750, Method 2026
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request



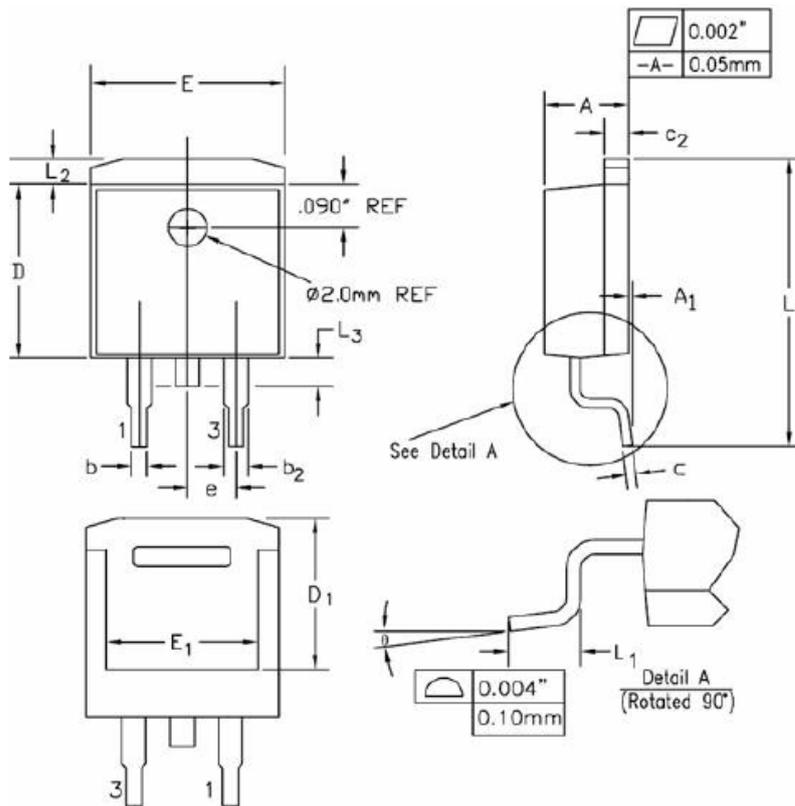
### Mechanical Dimensions (In mm):



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40
L2			2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

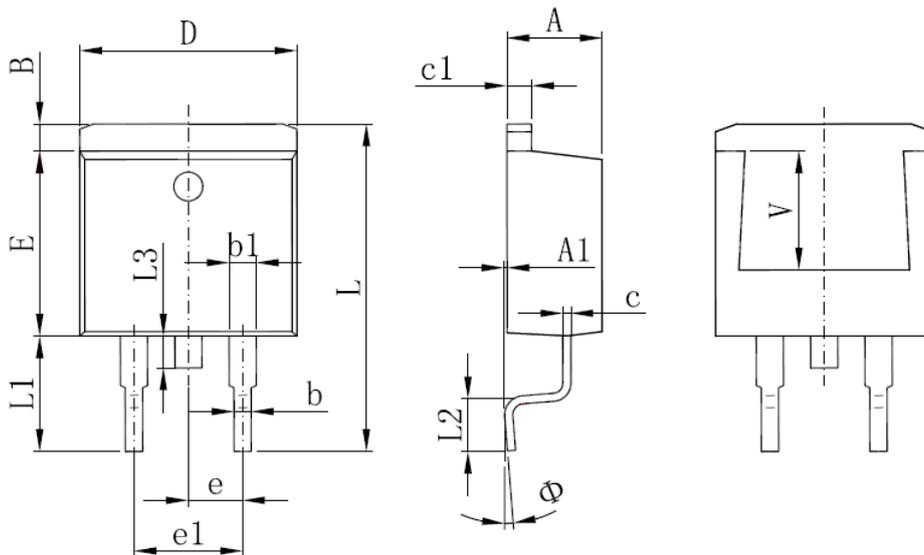
### OPTION 1(HD)

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •



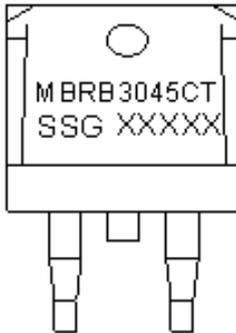
SYMBOL	MILLIMETERS	
	MIN.	MAX.
A	4.32	4.57
A <sub>1</sub>	0	0.25
b	0.71	0.91
b <sub>2</sub>	1.15	1.40
c	0.46	0.61
c <sub>2</sub>	1.22	1.40
D	8.89	9.40
D <sub>1</sub>	8.01	8.23
E	10.04	10.28
E <sub>1</sub>	7.88	8.08
e	2.54 BSC.	
L	14.73	15.75
L <sub>1</sub>	2.29	2.79
L <sub>2</sub>	1.15	1.39
L <sub>3</sub>	1.27	1.77
θ	0°	8°

**OPTION 2(MX)**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.120	1.420	0.044	0.056
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
L	14.940	15.500	0.588	0.610
L1	4.950	5.450	0.195	0.215
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
Φ	0°	8°	0°	8°
V	5.600 REF.		0.220 REF.	

**OPTION 3(CJ)**
**D<sup>2</sup> PAK**

**Marking Diagram:**


Where XXXXX is YYWWL

MBR	= Device Type
B	= Package type
30	= Forward Current (30A)
45	= Reverse Voltage (45V)
CT	= Configuration
SSG	= SSG
YY	= Year
WW	= Week
L	= Lot Number

**Cautions:** Molding resin  
 Epoxy resin UL:94V-0

**Ordering Information:**

Device	Package	Shipping
MBRB3045CT	D <sup>2</sup> PAK (Pb-Free)	800pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	$V_{RRM}$	-	45	
Working Peak Reverse Voltage	$V_{RWM}$			
DC Blocking Voltage	$V_R$			
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 123\text{ }^\circ\text{C}$ , rectangular wave form	15(per leg) 30(per device)	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	240	A



**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg) *	V <sub>F1</sub>	@ 15 A, Pulse, T <sub>J</sub> = 25 °C	0.60	0.65	V
	V <sub>F2</sub>	@ 15 A, Pulse, T <sub>J</sub> = 125 °C	0.56	0.62	V
Reverse Current (per leg) *	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>C</sub> = 25 °C	0.06	0.2	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>C</sub> = 125 °C	20	40	mA
Junction Capacitance (per leg)	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	300	800	pF
Series Inductance (per leg)	L <sub>S</sub>	Measured lead to lead 5 mm from package body	8.0	-	nH
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

\* Pulse Width < 300μs, Duty Cycle <2%

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature at reduced reverse voltage at reduced reverse voltage in DC forward mode	T <sub>J</sub>	V <sub>R</sub> ≤ 80%V <sub>RRM</sub> V <sub>R</sub> ≤ 50%V <sub>RRM</sub>	-55 to +150 -55 to +180 -55 to +200	°C
Storage Temperature	T <sub>stg</sub>	-	-65 to +150	°C
Typical Thermal Resistance Junction to Case(per leg)	R <sub>θJC</sub>	DC operation	1.6	°C/W
Approximate Weight	wt	-	1.85	g
Case Style	D2PAK			

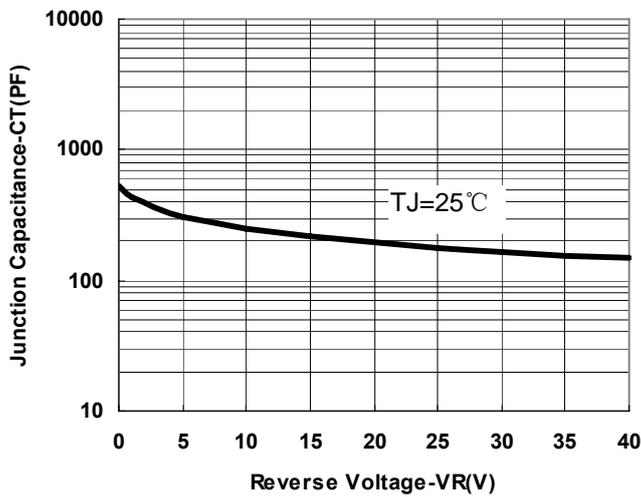


Fig.1-Typical Junction Capacitance

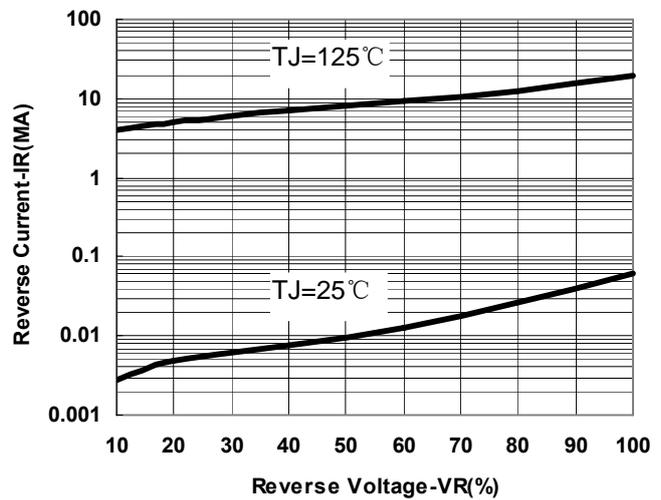


Fig.2-Typical Reverse Characteristics

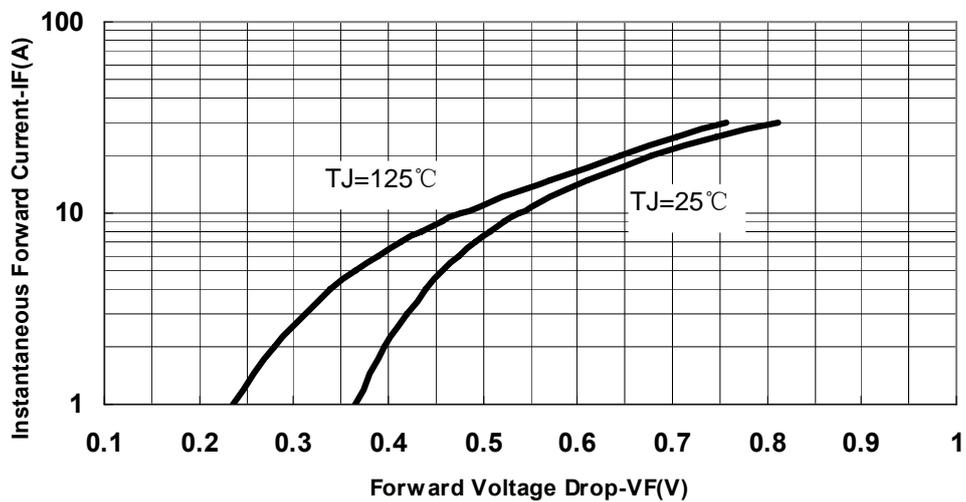


Fig.3-Typical Instantaneous Forward Voltage Characteristics



**MBRB3045CT**

**Technical Data**  
**Data Sheet N0789, Rev. B**

***Green Products***

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