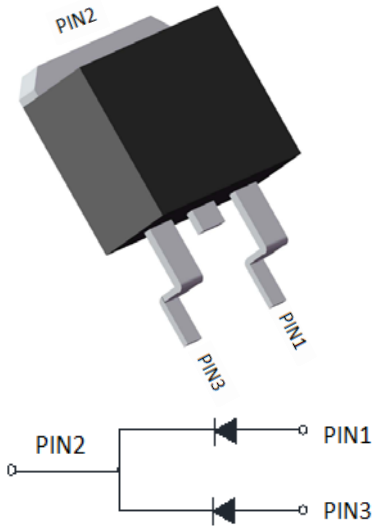


## Schottky Diodes



### Features

- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Part no. with suffix "Q" means AEC-Q101 qualified

### Typical Applications

Typical applications are in switching power supplies, converters, automotive, freewheeling diodes, and reverse battery protection.

### Mechanical Data

- **Package:** TO-263  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

### ■Maximum Ratings (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MBRB40150CTQ
Device marking code			MBRB40150CT
Repetitive peak reverse voltage	V <sub>RRM</sub>	V	150
Average Rectified Output Current @60Hz -sine wave, T <sub>c</sub> =100°C	I <sub>O</sub>	A	40
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T <sub>a</sub> =25°C	I <sub>FSM</sub>	A	300
Current Squared Time @1ms≤t≤8.3ms T <sub>J</sub> =25°C	I <sup>2</sup> t	A <sup>2</sup> s	373
Storage Temperature	T <sub>stg</sub>	°C	-55 ~ +175
Junction Temperature	T <sub>J</sub>	°C	-55 ~ +175

### ■Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Typ	Max
			I <sub>F</sub> =20A	T <sub>J</sub> =25°C		
Instantaneous forward voltage per diode	V <sub>F</sub>	V	I <sub>F</sub> =20A	T <sub>J</sub> =25°C	0.83	0.88
			I <sub>F</sub> =20A	T <sub>J</sub> =125°C	0.70	0.75
Typical junction capacitance per diode	C <sub>J</sub>	pF	V <sub>R</sub> =4V, f=1 MHz		410	-
Instantaneous reverse current per diode	I <sub>R</sub>	mA	V <sub>R</sub> =150V	T <sub>J</sub> =25°C	-	0.1
				T <sub>J</sub> =125°C	-	1



# MBRB40150CTQ

## ■ Characteristics (Typical)

Fig.1: Forward Current Derating Curve

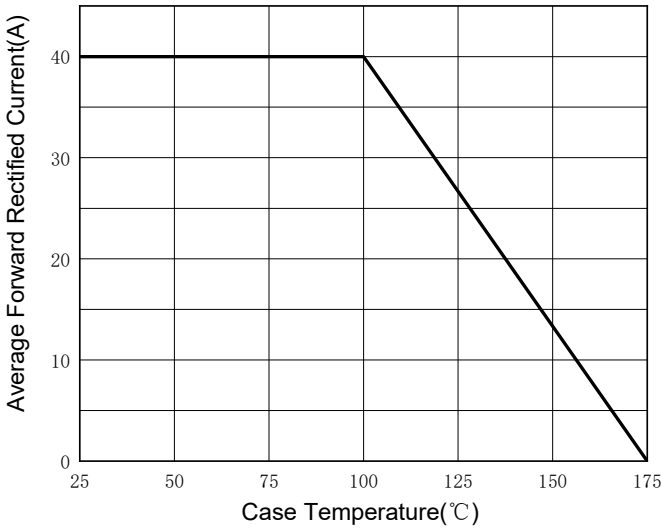


Fig.2: Forward Surge Current Capability(Per Diode)

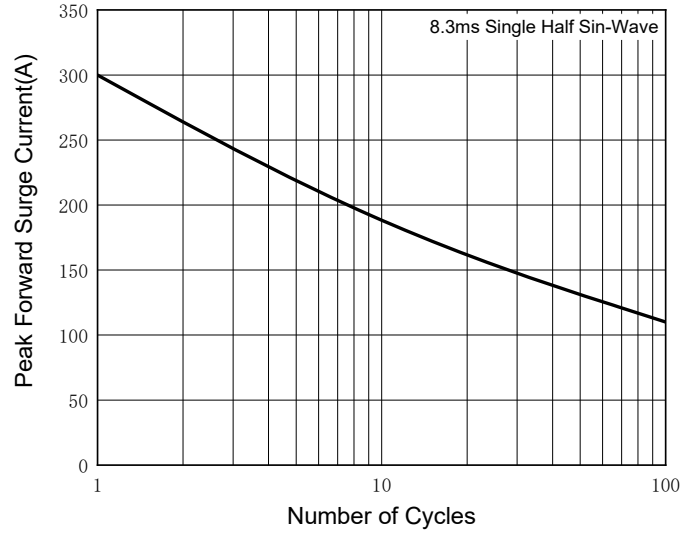


Fig.3: Typical Instantaneous Forward Characteristics(Per Diode)

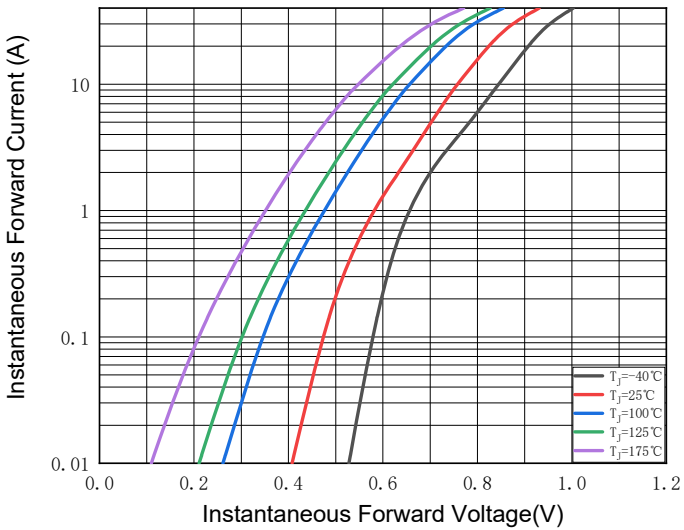


Fig.4: Typical Reverse Leakage Characteristics(Per Diode)

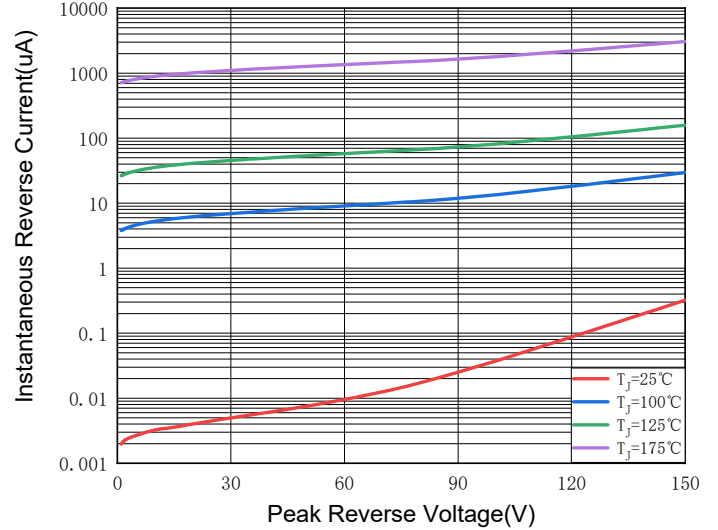
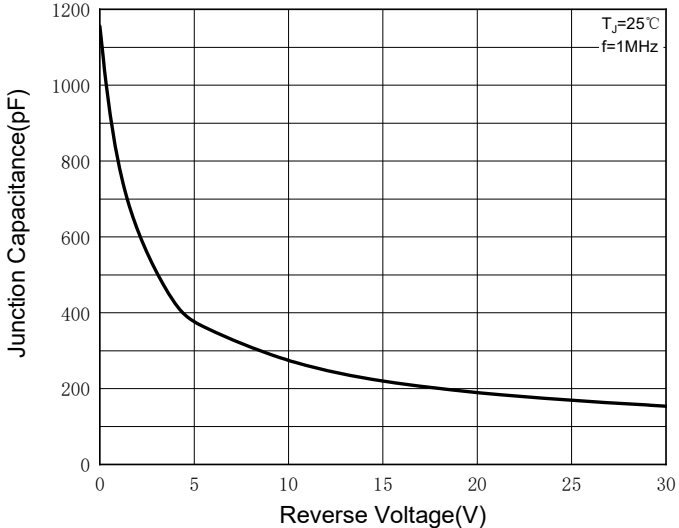


Fig.5: Typical Junction Capacitance(Per Diode)





# MBRB40150CTQ

## ■ Thermal Characteristics ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MBRB40150CTQ
Typical thermal resistance per diode	$R_{\theta J-A}$	$^\circ\text{C/W}$	40 <sup>(1)</sup>
	$R_{\theta J-C}$	$^\circ\text{C/W}$	4 <sup>(1)</sup>

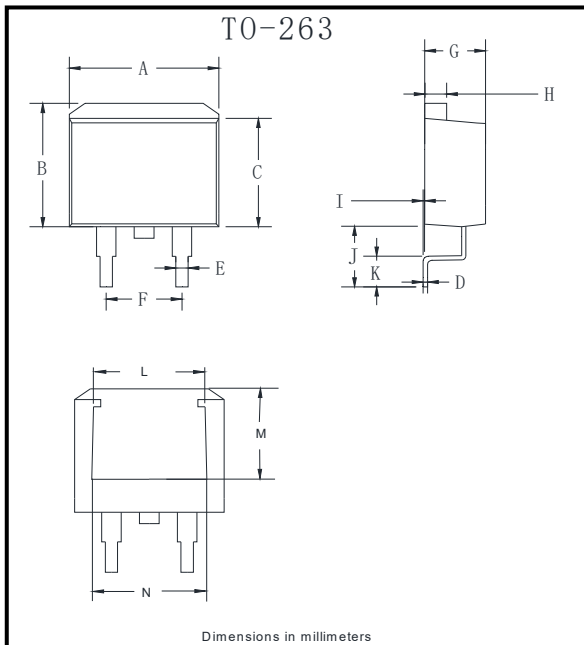
Note:

(1) Thermal resistance from junction to ambient and from junction to case mounted on P.C.B with 25.4mm\*25.4mm copper pad areas.

## ■ Ordering Information (Example)

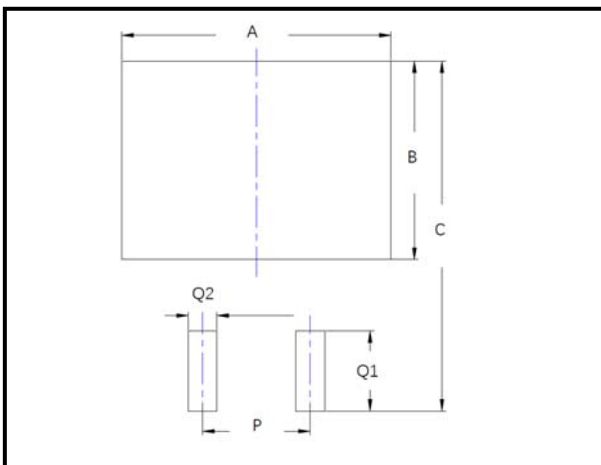
PREFERED P/N	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MBRB40150CTQ	Approximate 1.43	1000	2000	10000	Reel

## ■ Outline Dimensions



TO-263		
Dim	Min	Max
A	9.5	10.5
B	9.7	10.5
C	8.4	9.0
D	0.28	0.64
E	0.68	0.94
F	4.55	5.6
G	4.04	5.10
H	1.14	1.4
I	0	0.2
J	4.9	6.05
K	1.79	2.79
L	7.3	7.9
M	6.2	6.8
N	7.6	8.2

## ■ Suggested Pad Layout



Dim	Millimeters
A	12.7
B	9.4
C	16.6
P	5.08
Q1	3.8
Q2	1.35



## MBRB40150CTQ

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