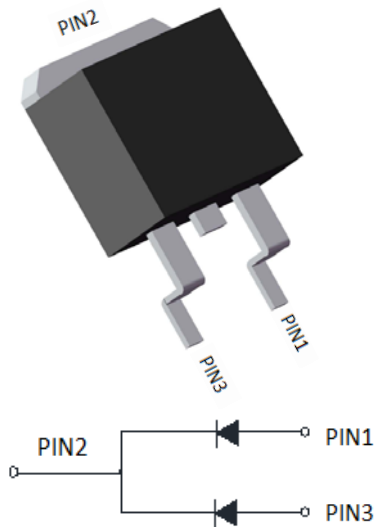


Schottky Diodes



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_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MBRB6045CTQ
Device marking code			MBRB6045CT
Repetitive peak reverse voltage	V _{RRM}	V	40
Average Rectified Output Current @60Hz -sine wave, TC=120°C	I _O	A	60
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _a =25°C	I _{FSM}	A	300
Current Squared Time @1ms≤t≤8.3ms T _J =25°C	I ² t	A ² s	374
Storage Temperature	T _{stg}	°C	-55 ~ +150
Junction Temperature	T _J	°C	-55 ~ +150

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Typ	Max
Instantaneous forward voltage per diode	V _F	V	I _F =30A	T _J =25°C	0.70	0.75
			I _F =60A	T _J =25°C	0.92	1.05
			I _F =30A	T _J =125°C	0.63	0.70
			I _F =60A	T _J =125°C	0.85	0.98
Typical junction capacitance per diode	C _J	pF	V _R =4V, f=1 MHz		900	
Instantaneous reverse current per diode	I _R	uA	V _R =45V	T _J =25°C	3	50
		mA	V _R =45V	T _J =125°C	4	30



MBRB6045CTQ

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

PARAMETER	SYMBOL	UNIT	MBRB6045CTQ
Typical thermal resistance per diode	$R_{\theta J-A}$	$^{\circ}\text{C/W}$	50
	$R_{\theta J-C}$	$^{\circ}\text{C/W}$	2

■ Characteristics (Typical)

Fig.1: Forward Current Derating Curve

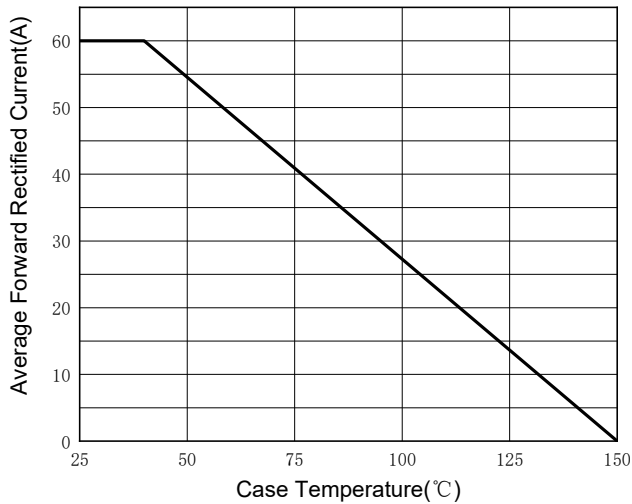


Fig.2: Forward Surge Current Capability(Per Diode)

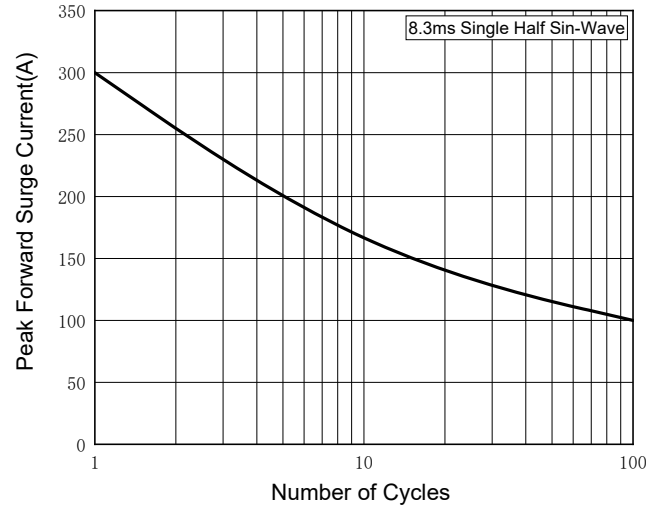


Fig.3: Typical Instantaneous Forward Characteristics(Per Diode)

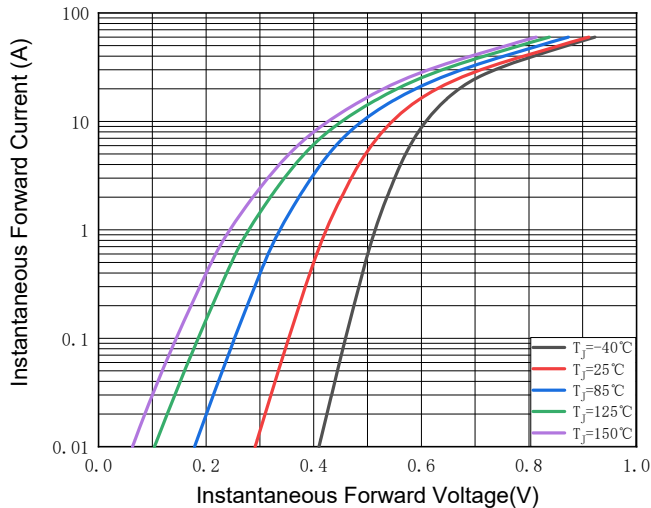


Fig.4: Typical Reverse Leakage Characteristics(Per Diode)

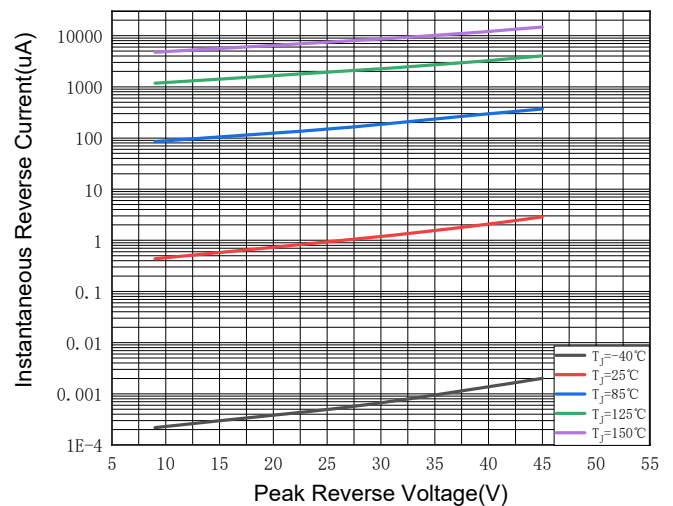
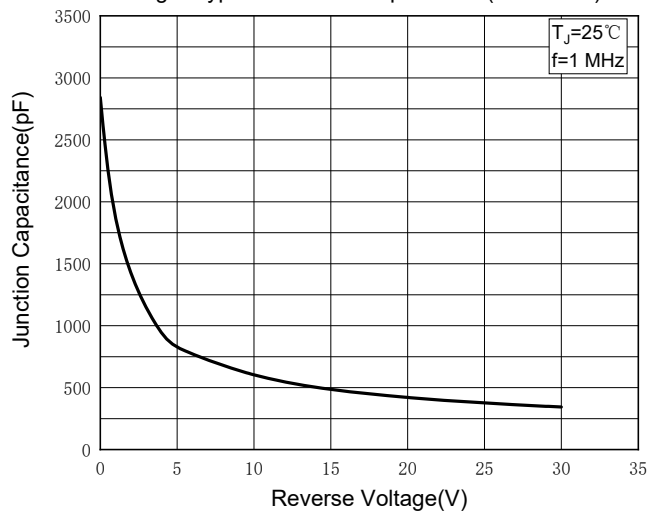




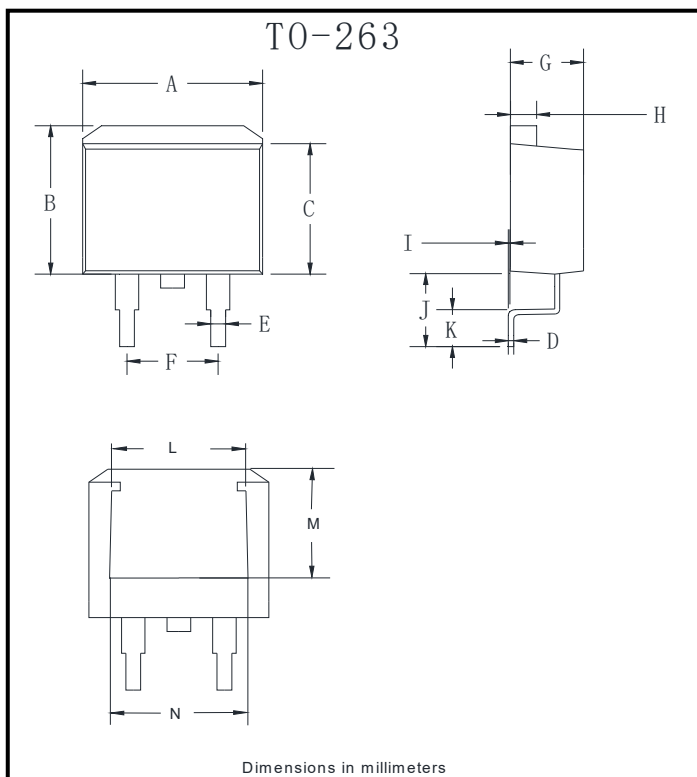
Fig.5:Typical Junction Capacitance(Per Diode)



■Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MBRB6045CTQ	Approximate 1.43	2000	10000	Reel

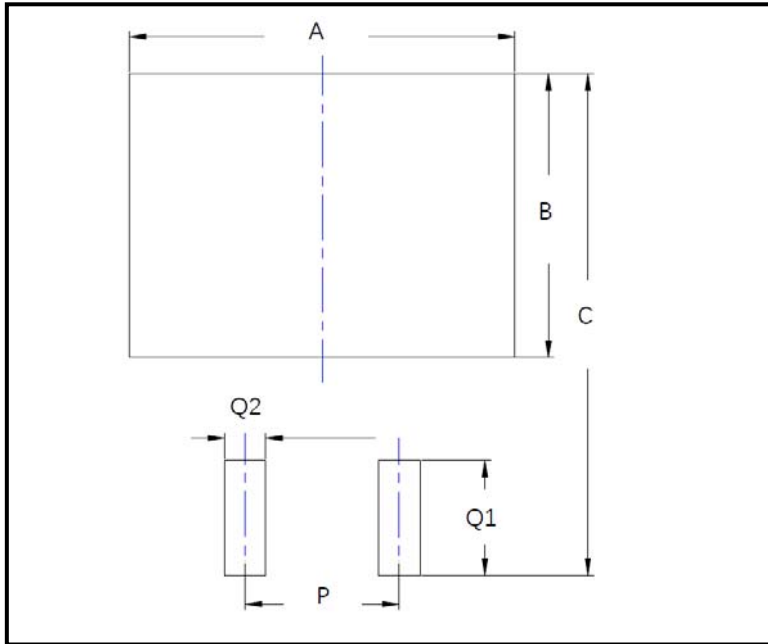
■Outline Dimensions



TO-263		
Dim	Min	Max
A	9.5	11.5
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



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