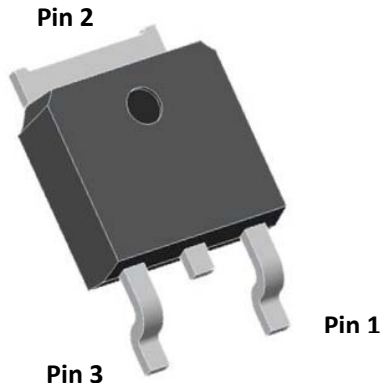


## Schottky Diodes



### 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-252  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen free
- **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	MBR1045CDQ
Device marking code	-	-	MBR1045CD
Repetitive peak reverse voltage	V <sub>RRM</sub>	V	45
Average Rectified Output Current @60Hz -sine wave, T <sub>C</sub> =120°C	I <sub>O</sub>	A	10
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T <sub>a</sub> =25°C	I <sub>FSM</sub>	A	120
Current Squared Time @1ms≤t≤8.3ms T <sub>J</sub> =25°C	I <sup>2</sup> t	A <sup>2</sup> s	60
Storage Temperature	T <sub>stg</sub>	°C	-55 ~ +150
Junction Temperature	T <sub>J</sub>	°C	-55 ~ +150

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Typ	Max
Instantaneous forward voltage	V <sub>F</sub>	V	I <sub>F</sub> =5A	T <sub>A</sub> =25°C	0.51	0.58
			I <sub>F</sub> =5A	T <sub>A</sub> =125°C	0.45	0.55
Typical junction capacitance	C <sub>J</sub>	pF	V <sub>R</sub> =4V, f=1 MHz		270	-
Leakage Current	I <sub>R</sub>	mA	V <sub>R</sub> =45V	T <sub>A</sub> =25°C	-	0.1
				T <sub>A</sub> =125°C	-	100



# MBR1045CDQ

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

PARAMETER		SYMBOL	UNIT	MBR1045CDQ
Thermal Resistance	Between junction and case	R <sub>θj-c</sub>	°C/W	5

## ■ Characteristics (Typical)

Fig.1: Forward Current Derating Curve

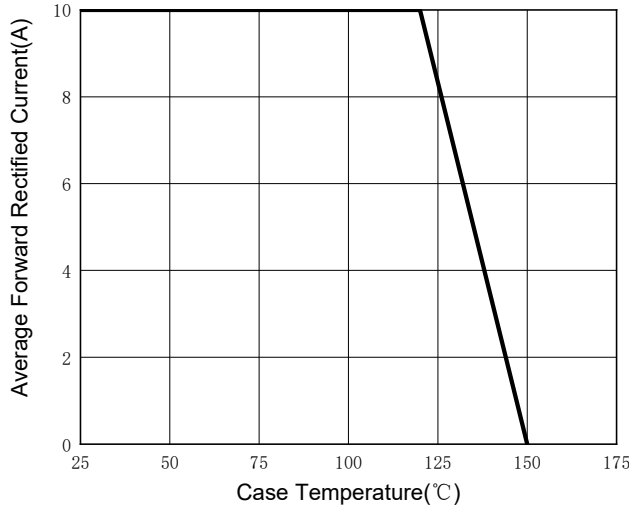


Fig.2: Forward Surge Current Capability

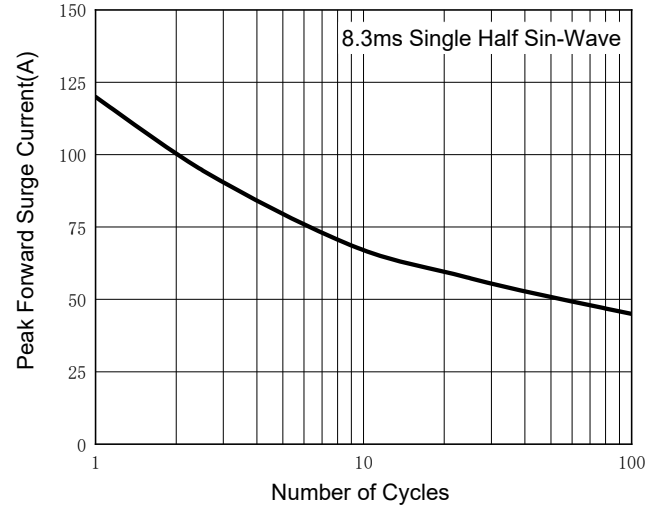


Fig.3: Typical Instantaneous Forward Characteristics

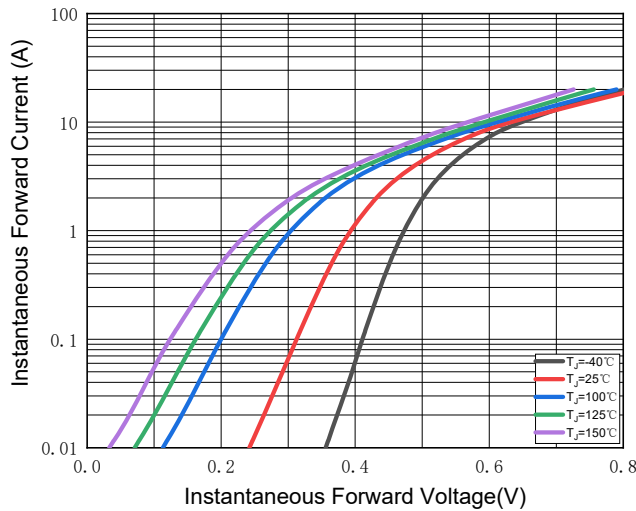
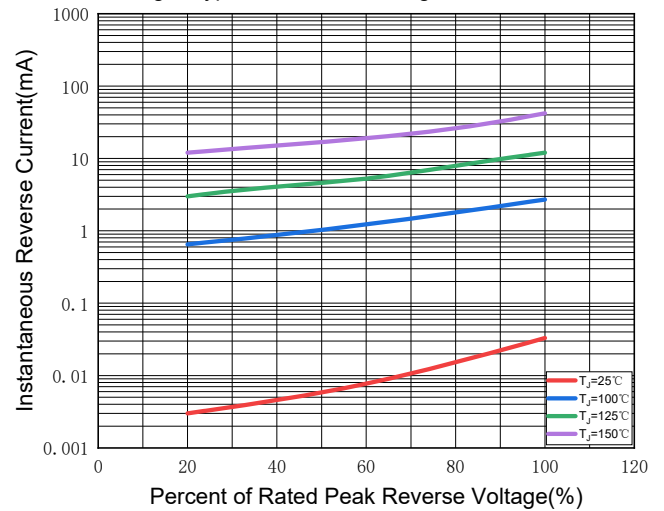


Fig.4: Typical Reverse Leakage Characteristics



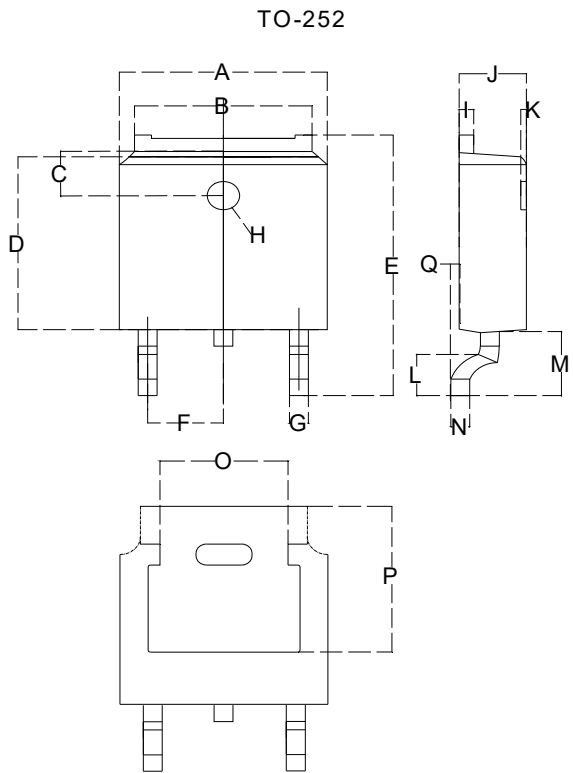
## ■ Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MBR1045CDQ	Approximate 0.32	2500	2500	25000	Reel



# MBR1045CDQ

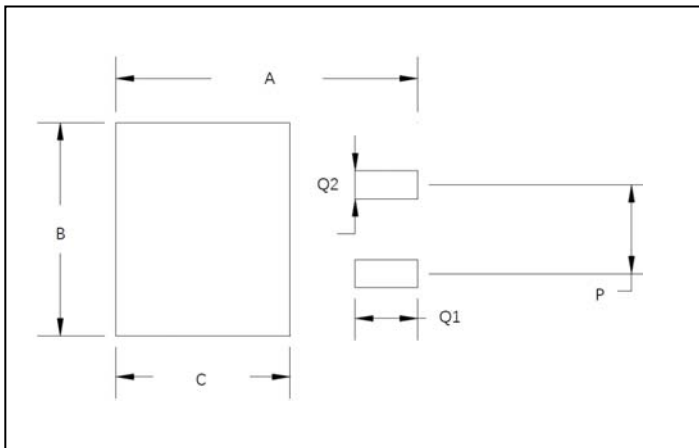
## ■Outline Dimensions



TO-252		
Dim	Min	Max
A	6.500	6.700
B	5.100	5.460
C	1.400	1.800
D	6.000	6.200
E	10.000	10.400
F	2.166	2.366
G	0.660	0.860
H	Φ 1.050	Φ 1.350
I	0.460	0.580
J	2.200	2.400
K	0	0.300
L	0.890	2.290
M	2.730	3.080
N	0.430	0.580
O	4.20	4.95
P	5.15	5.45
Q	0	0.2

Dimensions in millimeters

## ■Suggested Pad Layout



Dim	Millimeters
A	11.4
B	6.74
C	6.23
P	4.56
Q1	2.28
Q2	1.52



## MBR1045CDQ

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### Disclaimer

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