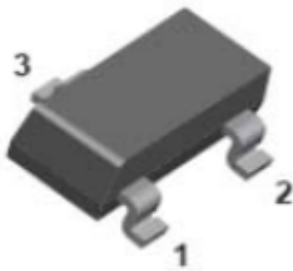
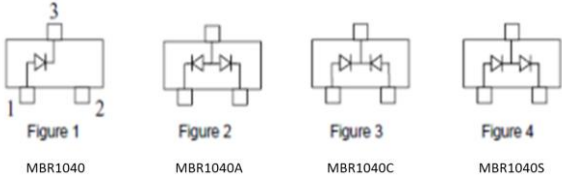


## Schottky Barrier Diode



### Features

- Moisture sensitivity level 1
- Reverse voltage: 40V
- Average forward current : 1A

### Application

- High frequency and low voltage rectifier

### Mechanical data

- **Package:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

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

Parameter	Symbol	Unit	Value	
Device marking code			MBR1040	140
			MBR1040A	140A
			MBR1040C	140C
			MBR1040S	140S
Repetitive peak reverse voltage	$V_{RRM}$	V	40	
Forward current	$I_F$	A	1	
Non-repetitive Surge peak forward current @ $t=8.3\text{ms}$ square wave	$I_{FSM}$	A	3	
Repetitive Peak Forward Current @ $t_p=1\text{ms}$ , $\delta=0.25$	$I_{FRM}$	A	1.5	
Power dissipation	$P_D$	mW	200	
Junction temperature	$T_J$	$^\circ\text{C}$	-55 to +150	
Storage temperature	$T_{STG}$	$^\circ\text{C}$	-55 to +150	



# MBR1040 THRU MBR1040S

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

Parameter	Symbol	UNIT	Conditions	Min	TYP	Max
Reverse voltage	V <sub>R</sub>	V	I <sub>R</sub> = 100uA	40		
Forward voltage	V <sub>F1</sub>	V	I <sub>F</sub> =0.1A			0.38
	V <sub>F2</sub>	V	I <sub>F</sub> =0.2A			0.42
	V <sub>F3</sub>	V	I <sub>F</sub> =0.5A			0.49
	V <sub>F4</sub>	V	I <sub>F</sub> =0.7A			0.55
	V <sub>F5</sub>	V	I <sub>F</sub> =1A			0.61
Reverse leakage current	I <sub>R1</sub>	uA	V <sub>R</sub> =10V			30
	I <sub>R2</sub>	uA	V <sub>R</sub> =40V			40

## ■ Thermal Characteristics

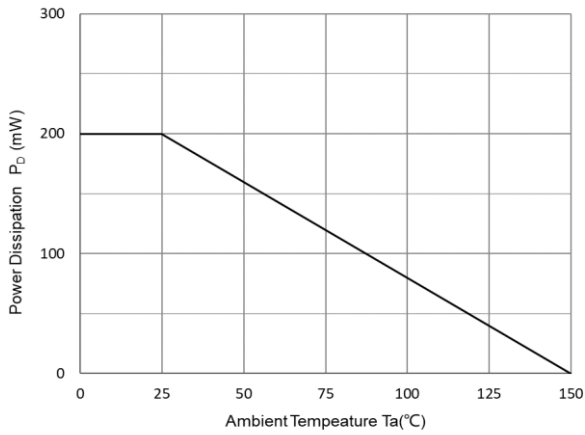
Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	625
Thermal resistance, junction-to-case	R <sub>θJ-C</sub> <sup>(1)</sup>	°C/W	500

Note:

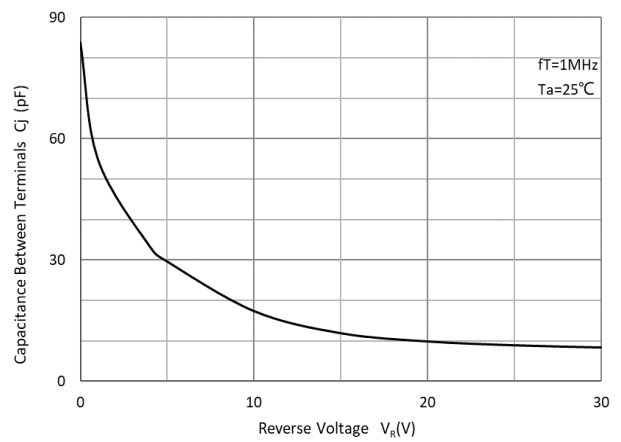
(1) Device mounted on PCB, single-sided copper, with standard footprint

## ■ Characteristics

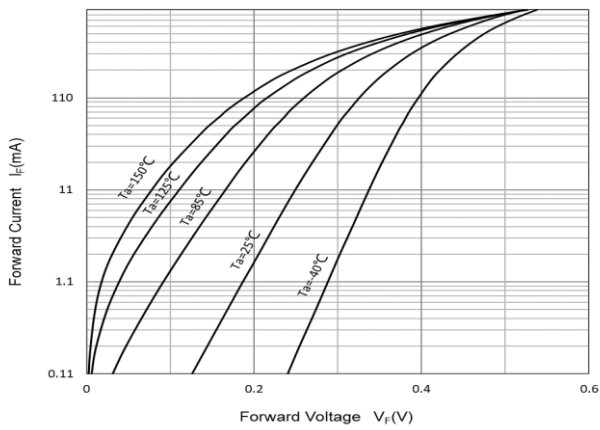
**Fig 1: P<sub>D</sub>-T<sub>a</sub> Curve**



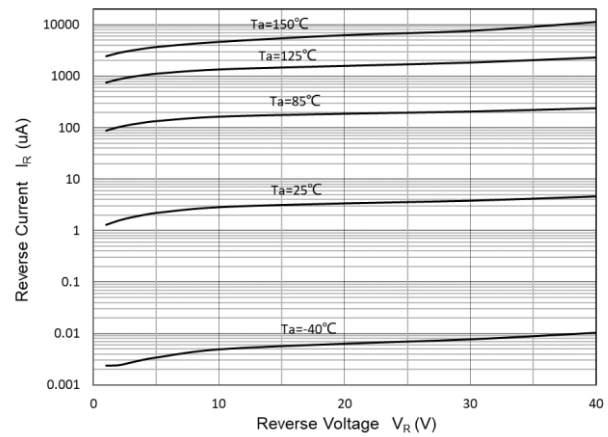
**Fig 2: Capacitance Capability**



**Fig 3: Typical Forward Characteristics**



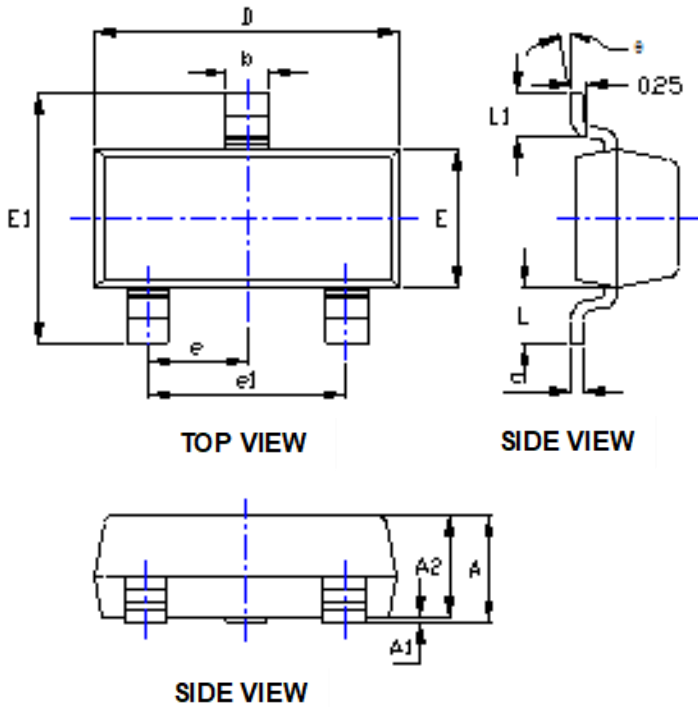
**Fig 4: Typical Reverse Characteristics**



## ■ Ordering Information

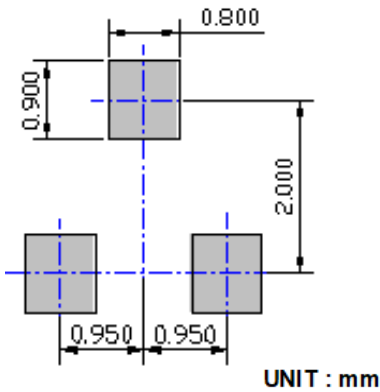
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity (pcs)	Delivery mode
MBR140	F2	Approximate 0.008	3000	30000	120000	7" reel
MBR140A	F2	Approximate 0.008	3000	30000	120000	7" reel
MBR140C	F2	Approximate 0.008	3000	30000	120000	7" reel
MBR140S	F2	Approximate 0.008	3000	30000	120000	7" reel

## ■ Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
φ	0°	8°	0°	8°

## ■ Suggested Pad Layout



UNIT : mm

### Note:

- All dimensions are in millimeters (mm) unless otherwise specified.  
[所有尺寸均以毫米为单位, 除非另有说明]
- General tolerances:  $\pm 0.10\text{mm}$  unless otherwise specified.  
[通用公差为  $\pm 0.10\text{mm}$ , 除非另有说明]
- Dimensions and tolerances per ASME Y14.5M-2018.  
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
- All dimensions shown are exclusive of burrs and gate residues. Burrs and gate vestiges shall not exceed 0.15 mm in maximum.  
[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]
- Dimension b does not include dambar protrusion of max 0.100 mm per side.  
[尺寸b不包括单边最大0.100 MM的中筋凸出部分]
- Dimensions D and E are the overall extreme outer dimensions of the mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.  
[D和E是塑封体的外部极限尺寸, 不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺, 但是包含了包封错位的最大尺寸]
- Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.  
[成型的管脚应为同一平面, 共面性最大为0.1mm]



## MBR1040 THRU MBR1040S

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