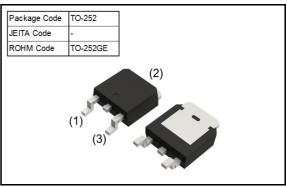
Data sheet

Schottky Barrier Diode

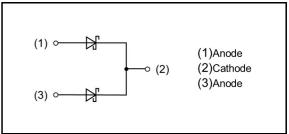
V _R	45	V
l _o	20	Α
I _{FSM}	100	A

- Features
 High reliability
 Power mold type
 Cathode common dual type
 Low I_R
- ApplicationSwitching power supply
- StructureSilicon epitaxial planar

Outline



Inner Circuit



Packaging Specifications

• r deraging epocinications				
Embossed Tape				
330				
16				
2500				
TL				
BQ20BM45A				

● Absolute Maximum Ratings (T_c=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Limits	Unit
Repetitive peak reverse voltage	V_{RM}	Duty≦0.5	45	V
Reverse voltage	V _R	Reverse direct voltage	45	V
Average rectified forward current	lo	60Hz half sin waveform, resistive load, I ₀ /2 per diode, T _c =62°c/Max.	20	Α
Peak forward surge current	I _{FSM}	60Hz half sin waveform, non-repetitive, per diode, T _a =25°c	100	Α
Junction temperature ⁽¹⁾	Tj	-	150	င
Storage temperature	T _{stg}	-	-55 ~ 150	ဇ

Note(1) To avoid occurrence of thermal runaway, actual board is to be designed to fulfill $dP_d/dT_i < 1/R_{\theta JA}$.

Attention

Compared with PN junction diodes, Schottky Barrier Diode is generally high reverse current (IR). The reverse loss of the diode might increase as temperature increasing that causes heat-up and further IR. This phenomenon might end up the thermal destruction (thermal runaway). Therefore please give consideration to the reverse loss and the ambient temperature when using this product.

● Electrical Characteristics (T_i=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit
Forward voltage ⁽¹⁾	V _F	I _F =10A	-	0.51	0.59	V
Reverse current ⁽¹⁾	I _{R1}	V _R =40V	-	20	120	μA
	I _{R2}	V _R =45V	-	35	200	μA

Note (1) Value per diode

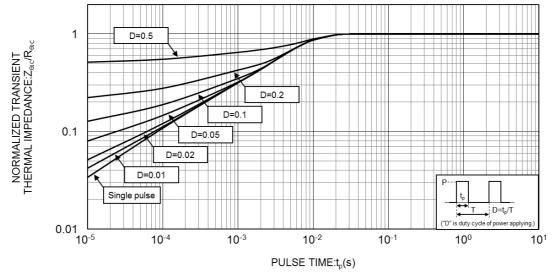
Thermal Characteristics

Parameter		Symbol	Min.	Тур.	Max.	Unit
Thermal Resistance (Junction to case) ^{(1) (2)}	Per diode	Paus	-	-	0.86	°C/W
	Per device	R _{0JC}	-	-	0.47	°C/W
Thermal Resistance (Junction to ambient) ⁽¹⁾ (3)		$R_{\theta JA}$	-	-	75	°C/W

Notes (1) Value is guaranteed by design.

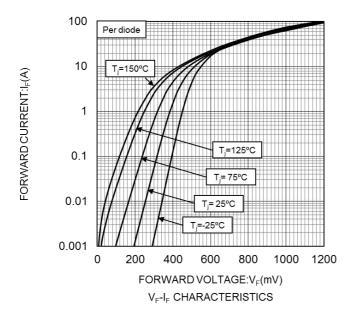
- (2) Transient dual interface measurement (TDIM) method.
- (3) Mounted on 50 x 50 x 1.6mm FR4 board, single-sided copper, 35µm thickness, reference footprint.

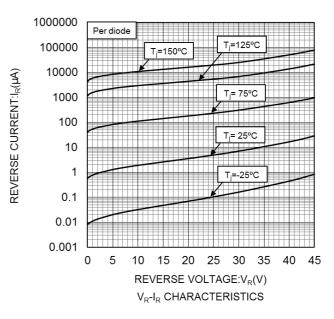
Characteristic Curves

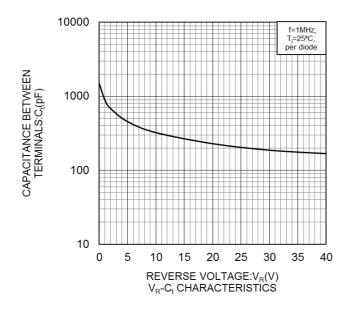


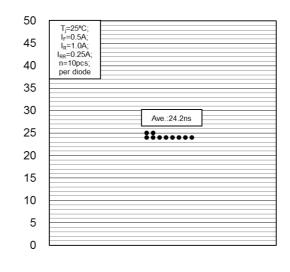
NORMALIZED TRANSIENT THERMAL IMPEDANCE FROM JUNCTION TO CASE (PER DEVICE)

Characteristic Curves





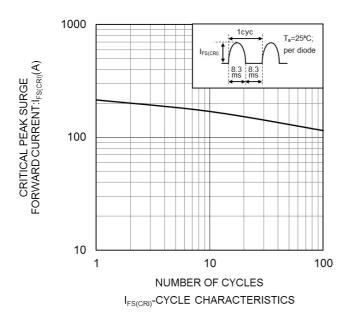


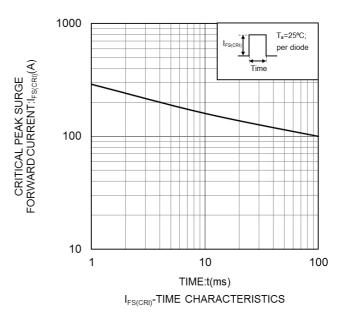


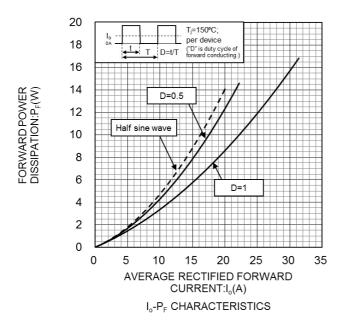
trr DISPERSION MAP

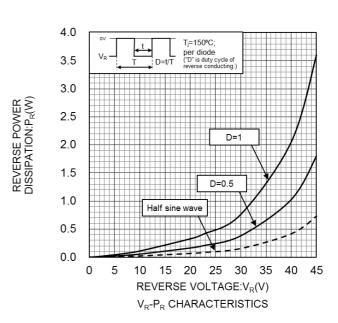
REVERSE RECOVERY TIME:tr(ns)

Characteristic Curves

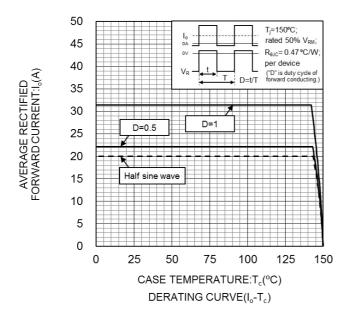




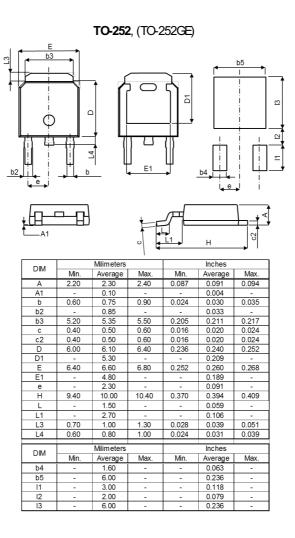




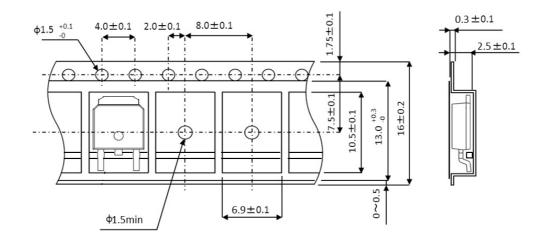
Characteristic Curves



Dimensions



● Taping (Unit:mm)



Notice

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JAPAN	USA	EU	CHINA
CLASSⅢ	CLASSIII	CLASS II b	CI ACCIII
CLASSIV		CLASSⅢ	CLASSIII

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 - [b] Use of our Products outdoors or in places where the Products are exposed to direct sunlight or dust
 - [c] Use of our Products in places where the Products are exposed to sea wind or corrosive gases, including Cl₂, H₂S, NH₃, SO₂, and NO₂
 - [d] Use of our Products in places where the Products are exposed to static electricity or electromagnetic waves
 - [e] Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
 - [f] Sealing or coating our Products with resin or other coating materials
 - [g] Use of our Products without cleaning residue of flux (Exclude cases where no-clean type fluxes is used. However, recommend sufficiently about the residue.); or Washing our Products by using water or water-soluble cleaning agents for cleaning residue after soldering
 - [h] Use of the Products in places subject to dew condensation
- 4. The Products are not subject to radiation-proof design.
- 5. Please verify and confirm characteristics of the final or mounted products in using the Products.
- 6. In particular, if a transient load (a large amount of load applied in a short period of time, such as pulse, is applied, confirmation of performance characteristics after on-board mounting is strongly recommended. Avoid applying power exceeding normal rated power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.
- 7. De-rate Power Dissipation depending on ambient temperature. When used in sealed area, confirm that it is the use in the range that does not exceed the maximum junction temperature.
- 8. Confirm that operation temperature is within the specified range described in the product specification.
- 9. ROHM shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.

Precaution for Mounting / Circuit board design

- 1. When a highly active halogenous (chlorine, bromine, etc.) flux is used, the residue of flux may negatively affect product performance and reliability.
- 2. In principle, the reflow soldering method must be used on a surface-mount products, the flow soldering method must be used on a through hole mount products. If the flow soldering method is preferred on a surface-mount products, please consult with the ROHM representative in advance.

For details, please refer to ROHM Mounting specification

Precautions Regarding Application Examples and External Circuits

- 1. If change is made to the constant of an external circuit, please allow a sufficient margin considering variations of the characteristics of the Products and external components, including transient characteristics, as well as static characteristics.
- You agree that application notes, reference designs, and associated data and information contained in this document are presented only as guidance for Products use. Therefore, in case you use such information, you are solely responsible for it and you must exercise your own independent verification and judgment in the use of such information contained in this document. ROHM shall not be in any way responsible or liable for any damages, expenses or losses incurred by you or third parties arising from the use of such information.

Precaution for Electrostatic

This Product is electrostatic sensitive product, which may be damaged due to electrostatic discharge. Please take proper caution in your manufacturing process and storage so that voltage exceeding the Products maximum rating will not be applied to Products. Please take special care under dry condition (e.g. Grounding of human body / equipment / solder iron, isolation from charged objects, setting of lonizer, friction prevention and temperature / humidity control).

Precaution for Storage / Transportation

- 1. Product performance and soldered connections may deteriorate if the Products are stored in the places where:
 - [a] the Products are exposed to sea winds or corrosive gases, including Cl₂, H₂S, NH₃, SO₂, and NO₂
 - [b] the temperature or humidity exceeds those recommended by ROHM
 - [c] the Products are exposed to direct sunshine or condensation
 - [d] the Products are exposed to high Electrostatic
- 2. Even under ROHM recommended storage condition, solderability of products out of recommended storage time period may be degraded. It is strongly recommended to confirm solderability before using Products of which storage time is exceeding the recommended storage time period.
- 3. Store / transport cartons in the correct direction, which is indicated on a carton with a symbol. Otherwise bent leads may occur due to excessive stress applied when dropping of a carton.
- 4. Use Products within the specified time after opening a humidity barrier bag. Baking is required before using Products of which storage time is exceeding the recommended storage time period.

Precaution for Product Label

A two-dimensional barcode printed on ROHM Products label is for ROHM's internal use only.

Precaution for Disposition

When disposing Products please dispose them properly using an authorized industry waste company.

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Since concerned goods might be fallen under listed items of export control prescribed by Foreign exchange and Foreign trade act, please consult with ROHM in case of export.

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