

Features

High reliability Small mold type Super low V<sub>F</sub>

RBE05SM20A

Schottky Barrier Diode

## Data sheet

**Embossed** Tape

180

8

8000

T2R

3

V <sub>R</sub>	20	V
۱ <sub>0</sub>	0.5	А
IFSM	1	А

Package Code	SOD-523	
JEITA Code	SC-79	
ROHM Code	EMD2	
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Inner C		

Packaging Specifications

Packing

Reel Size(mm)

Taping Width(mm)

Basic Ordering Unit(pcs)

Taping Code

- Application
  General rectification
- Structure
  Silicon epitaxial

# ● Absolute Maximum Ratings (T<sub>c</sub>=25<sup>o</sup>C unless otherwise specified)

	· /		
Symbol	Conditions	Limits	Unit
V <sub>RM</sub>	Duty≦0.5	30	V
V <sub>R</sub>	Reverse direct voltage	20	V
l <sub>o</sub>	Glass epoxy mounted, 60Hz half sin waveform, resistive load	0.5	А
IFSM	60Hz half sin waveform, Non-repetitive, one cycle, Ta=25℃	1	Α
Tj	-	125	°C
T <sub>stg</sub>	-	-40 ~ 125	°C
	V <sub>RM</sub> V <sub>R</sub> I <sub>o</sub> I <sub>FSM</sub> Tj	$\begin{tabular}{ c c c c c } \hline V_{RM} & Duty \leq 0.5 \\ \hline V_{R} & Reverse direct voltage \\ \hline I_{0} & Glass epoxy mounted, \\ \hline 60Hz half sin waveform, resistive load \\ \hline I_{FSM} & 60Hz half sin waveform, Non-repetitive, \\ one cycle, T_a=25^\circ c \\ \hline T_j & - \\ \hline \hline$	VRMDuty≦0.530VRReverse direct voltage20IoGlass epoxy mounted, 60Hz half sin waveform, resistive load0.5IFSM60Hz half sin waveform, Non-repetitive, one cycle, Ta=25°c1Tj-125

Note(1) To avoid occurrence of thermal runaway, actual board is to be designed to fulfill  $dP_d/dT_j < 1/R_{th(j-a)}$ .

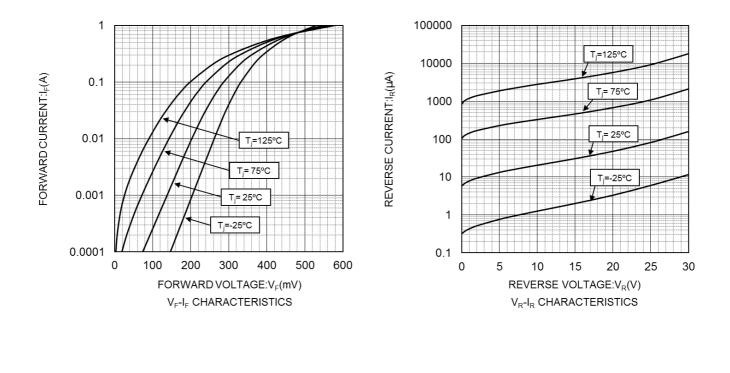
## Characteristics (T<sub>i</sub>=25°C unless otherwise specified)

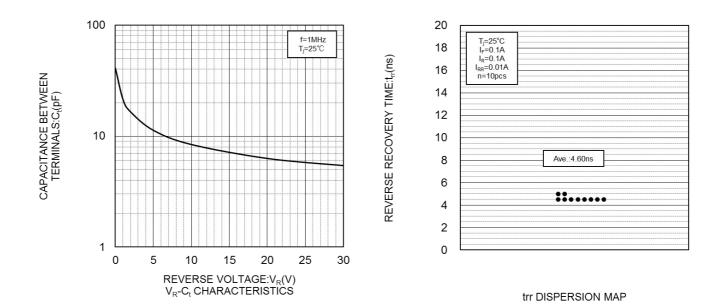
Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit
Forward voltage	VF	I <sub>F</sub> =0.5A	-	-	0.53	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> =20V	-	-	150	μA

#### 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.

## Characteristic Curves

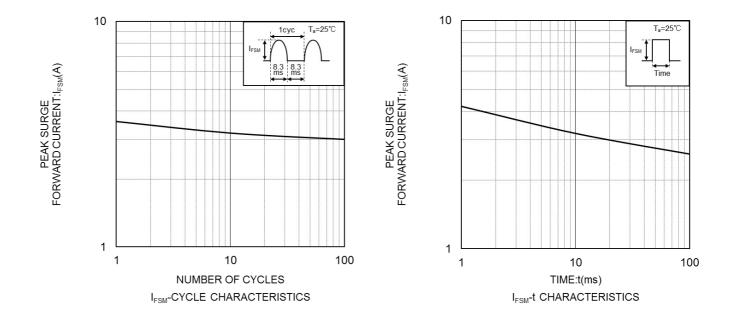


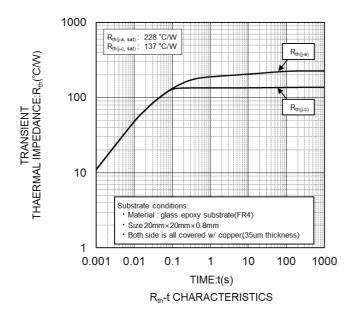


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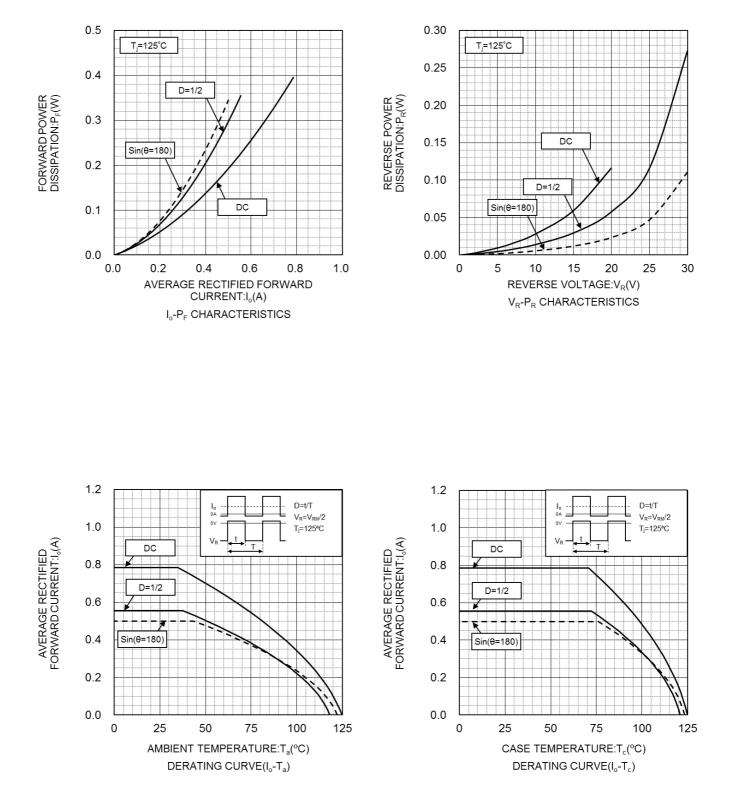
## Characteristic Curves





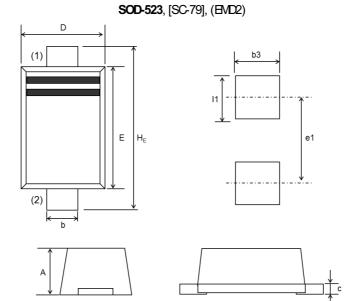


## Characteristic Curves





#### Dimensions

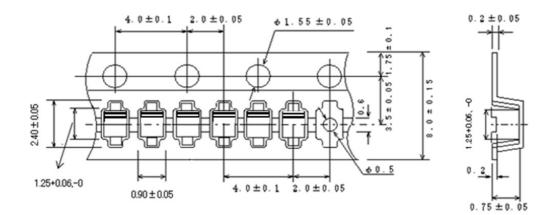


DIM	Milimeters		rs Inches			
DIVI	Min.	Average	Max.	Min.	Average	Max.
А	0.50	0.60	0.70	0.020	0.024	0.028
b	0.25	0.30	0.35	0.010	0.012	0.014
С	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	1.15	1.20	1.25	0.045	0.047	0.049
HE	1.50	1.60	1.70	0.059	0.063	0.067
11	-	0.60	-	-	0.024	-
b3	-	0.80	-	-	0.031	-
e1	-	1.70	-	-	0.067	-

(1) The marking bar indicates the cathode.

(2) The direction indicates the anode.

## •Taping (Unit:mm)



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(Note1) Medical Equipment Classification of the Specific Applications
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JÁPAN	USA	EU	CHINA
CLASSⅢ	CLASSⅢ	CLASS II b	
CLASSⅣ	CLASSII	CLASSⅢ	CLASSII

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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 Cl<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>2</sub>, and NO<sub>2</sub>
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  - [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 (even if you use no-clean type fluxes, cleaning residue of flux is recommended); 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.
- 2. 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:
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  - [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.

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

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## RBE05SM20A - Web Page

**Distribution Inventory** 

Part Number	RBE05SM20A
Package	EMD2
Unit Quantity	8000
Minimum Package Quantity	8000
Packing Type	Taping
Constitution Materials List	inquiry
RoHS	Yes