# **ROHM**

## Switching Diode (High speed switching)

$V_{RM}$	80	V
I <sub>FM</sub>	300	mA
l <sub>ο</sub>	100	mA
IFSM	4000	mA

- Features High reliability Small mold type High Speed switching
- Application High speed switching
- Structure Epitaxial planar

# ● Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

$V_{RM}$	80	V		Package Code JEITA Code	SOT-543 SC-107A	-
I <sub>FM</sub>	300	mA	-	ROHM Code	EMD4	(4)
l <sub>o</sub>	100	mA	•		(1)	(3)
I <sub>FSM</sub>	4000	mA			(2)	
			-			

Outline

● Inner Circuit **⊸** (2) (1)Cathode (2)Cathode (3)Anode (4)Anode

Packaging Specifications Packing **Embossed Tape** Reel Size(mm) 180 Taping Width(mm) 8 Basic Ordering Unit(pcs) 8000 T2R Taping Code N20 Marking

Parameter	Symbol	Conditions	Limits	Unit
Reverse voltage	VR	-	80	V
Repetitive peak reverse voltage	V <sub>RM</sub>	-	80	V
Average rectified forward current	lo	-	100	mA
Forward current	I <sub>FM</sub>	-	300	mA
Peak forward surge current	I <sub>FSM</sub>	t=1µs	4000	mA
Power dissipation *	$P_{D}$	-	150	mW
Junction temperature	Tj	-	150	°C
Storage temperature	T <sub>stg</sub>	-	-55 <b>~</b> 150	°C

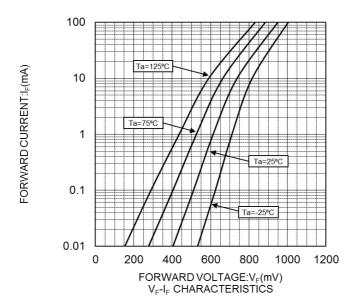
## \*2 elements total

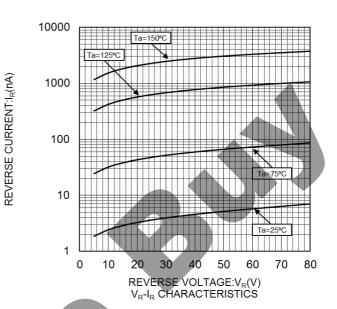
● Characteristics (T<sub>a</sub> = 25°C)

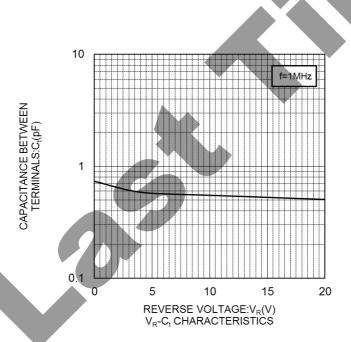
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			70			
Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit
Forward voltage	V <sub>F</sub>	I <sub>F</sub> =100mA	-	-	1.2	٧
Reverse current	I <sub>R</sub>	V <sub>R</sub> =70V	-	-	0.1	μA
Capacitance between terminals	Ct	V <sub>R</sub> =6.0V f=1.0MHz	-	-	3.5	рF
Reverse recovery time	trr	$V_{R}$ =6.0V $I_{F}$ =5.0mA $R_{L}$ =50 $\Omega$	-	-	4.0	ns

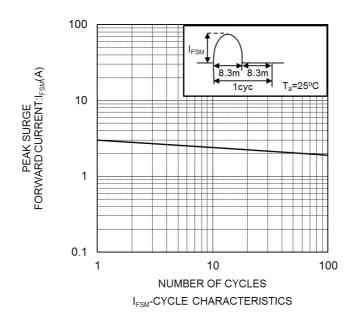
## Characteristic Curves

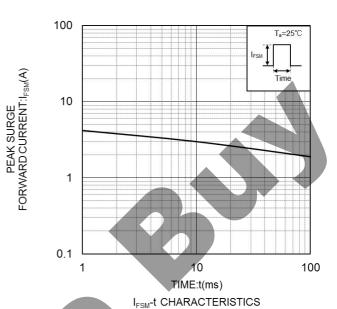




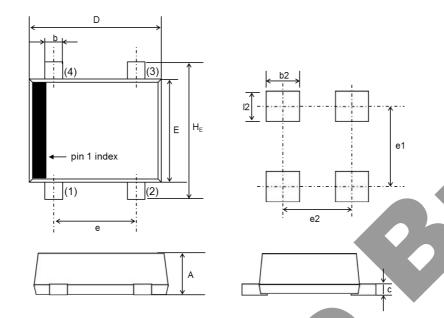


## Characteristic Curves



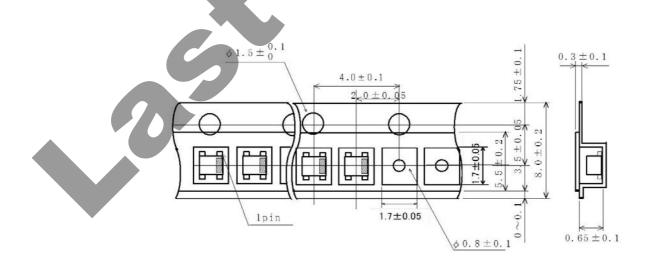


## ● Dimensions (SOT-543 SC-107A EMD4)



DIM	Milimeters			Inches		
DIIVI	Min.	Average	Max.	Min.	Average	Max.
А	0.45	0.50	0.55	0.018	0.020	0.022
b	0.17	0.22	0.27	0.007	0.009	0.011
С	0.08	0.13	0.18	0.003	0.005	0.007
D	1.50	1.60	1.70	0.059	0.063	0.067
E	1.10	1.20	1.30	0.043	0.047	0.051
HE	1.50	1.60	1.70	0.059	0.063	0.067
е	0.90	1.00	1.10	0.035	0.039	0.043
12	-	0.45	-	-	0.018	-
b2	-	0.50	1	-	0.020	-
e1	-	1.55	1	-	0.061	-
e2	-	1.10	,	-	0.043	-

## ● Taping (Unit:mm)



## **Notice**

#### **Precaution on using ROHM Products**

Our Products are designed and manufactured for application in ordinary electronic equipment (such as AV equipment, OA equipment, telecommunication equipment, home electronic appliances, amusement equipment, etc.). If you intend to use our Products in devices requiring extremely high reliability (such as medical equipment (Note 1), transport equipment, traffic equipment, aircraft/spacecraft, nuclear power controllers, fuel controllers, car equipment including car accessories, safety devices, etc.) and whose malfunction or failure may cause loss of human life, bodily injury or serious damage to property ("Specific Applications"), please consult with the ROHM sales representative in advance. Unless otherwise agreed in writing by ROHM in advance, 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 any ROHM's Products for Specific Applications.

(Note1) Medical Equipment Classification of the Specific Applications

JAPAN	USA	EU	CHINA
CLASSⅢ	CLASSⅢ	CLASS II b	СГУССШ
CLASSIV	CLASSIII	CLASSⅢ	CLASSII

- 2. ROHM designs and manufactures its Products subject to strict quality control system. However, semiconductor products can fail or malfunction at a certain rate. Please be sure to implement, at your own responsibilities, adequate safety measures including but not limited to fail-safe design against the physical injury, damage to any property, which a failure or malfunction of our Products may cause. The following are examples of safety measures:
  - [a] Installation of protection circuits or other protective devices to improve system safety
  - [b] Installation of redundant circuits to reduce the impact of single or multiple circuit failure
- 3. Our Products are designed and manufactured for use under standard conditions and not under any special or extraordinary environments or conditions, as exemplified below. Accordingly, ROHM shall not be in any way responsible or liable for any damages, expenses or losses arising from the use of any ROHM's Products under any special or extraordinary environments or conditions. If you intend to use our Products under any special or extraordinary environments or conditions (as exemplified below), your independent verification and confirmation of product performance, reliability, etc, prior to use, must be necessary:
  - [a] Use of our Products in any types of liquid, including water, oils, chemicals, and organic solvents
  - [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>
  - [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.
- 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:
  - [a] the Products are exposed to sea winds 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>
  - [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
- 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.

#### Precaution for Foreign Exchange and Foreign Trade act

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.

#### **Precaution Regarding Intellectual Property Rights**

- 1. All information and data including but not limited to application example contained in this document is for reference only. ROHM does not warrant that foregoing information or data will not infringe any intellectual property rights or any other rights of any third party regarding such information or data.
- 2. ROHM shall not have any obligations where the claims, actions or demands arising from the combination of the Products with other articles such as components, circuits, systems or external equipment (including software).
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#### **General Precaution**

- 1. Before you use our Products, you are requested to carefully read this document and fully understand its contents. ROHM shall not be in any way responsible or liable for failure, malfunction or accident arising from the use of any ROHM's Products against warning, caution or note contained in this document.
- 2. All information contained in this document is current as of the issuing date and subject to change without any prior notice. Before purchasing or using ROHM's Products, please confirm the latest information with a ROHM sales representative.
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