UDZVFH13B

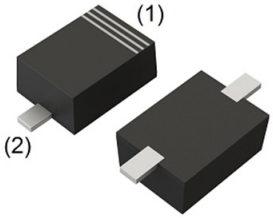
Zener Diode

(AEC-Q101 qualified) Data sheet

P_D	200	mW

● Outline

Package Code	SOD-323FL
JEITA Code	SC-90A
ROHM Code	UMD2

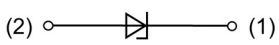


● Feature

High reliability

Small mold type

● Inner Circuit



(1)Cathode
(2)Anode

● Application

Voltage regulation

● Packaging Specification

Packing	Embossed Tape
Reel Size(mm)	180
Taping Width(mm)	8
Quantity(pcs)	3000
Taping Code	TE-17
Marking	35

● Structure

Silicon Epitaxial Planar

● Absolute Maximum Rating (T_a = 25℃)

Parameter	Symbol	Limits	Unit
Power dissipation	P_D	200	mW
Junction temperature	T_j	150	℃
Storage temperature	T_{stg}	-55 ~ 150	℃

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● Characteristic (T_a = 25ºC)

P/N	Symbol								
	Zener Voltage:V_Z(V)			Dynamic Impedance:Z_Z(Ω)		Zener Impedance:Z_{ZK}(Ω)		Reverse Current:I_R(μA)	
	MIN.	MAX.	I_Z(mA)	MAX.	I_Z(mA)	MAX.	I_Z(mA)	MAX.	V_R(V)
UDZVFH2.0B	2.020	2.200	5	100	5	1000	0.5	120	0.5
UDZVFH2.2B	2.220	2.410	5	100	5	1000	0.5	120	0.7
UDZVFH2.4B	2.430	2.630	5	100	5	1000	0.5	120	1.0
UDZVFH2.7B	2.690	2.910	5	110	5	1000	0.5	100	1.0
UDZVFH3.0B	3.010	3.220	5	120	5	1000	0.5	50	1.0
UDZVFH3.3B	3.320	3.530	5	120	5	1000	0.5	20	1.0
UDZVFH3.6B	3.600	3.845	5	100	5	1000	1.0	10	1.0
UDZVFH3.9B	3.890	4.160	5	100	5	1000	1.0	5	1.0
UDZVFH4.3B	4.170	4.430	5	100	5	1000	1.0	5	1.0
UDZVFH4.7B	4.550	4.750	5	100	5	800	0.5	2	1.0
UDZVFH5.1B	4.980	5.200	5	80	5	500	0.5	2	1.5
UDZVFH5.6B	5.490	5.730	5	60	5	200	0.5	1	2.5
UDZVFH6.2B	6.060	6.330	5	60	5	100	0.5	1	3.0
UDZVFH6.8B	6.650	6.930	5	40	5	60	0.5	0.5	3.5
UDZVFH7.5B	7.280	7.600	5	30	5	60	0.5	0.5	4.0
UDZVFH8.2B	8.020	8.360	5	30	5	60	0.5	0.5	5.0
UDZVFH9.1B	8.850	9.230	5	30	5	60	0.5	0.5	6.0
UDZVFH10B	9.770	10.210	5	30	5	60	0.5	0.1	7.0
UDZVFH11B	10.760	11.220	5	30	5	60	0.5	0.1	8.0
UDZVFH12B	11.740	12.240	5	30	5	80	0.5	0.1	9.0
UDZVFH13B	12.910	13.490	5	37	5	80	0.5	0.1	10.0
UDZVFH15B	14.340	14.980	5	42	5	80	0.5	0.1	11.0
UDZVFH16B	15.850	16.510	5	50	5	80	0.5	0.1	12.0
UDZVFH18B	17.560	18.350	5	65	5	80	0.5	0.1	13.0
UDZVFH20B	19.520	20.390	5	85	5	100	0.5	0.1	15.0
UDZVFH22B	21.540	22.470	5	100	5	100	0.5	0.1	17.0
UDZVFH24B	23.720	24.780	5	120	5	120	0.5	0.1	19.0
UDZVFH27B	26.190	27.530	5	150	5	150	0.5	0.1	21.0
UDZVFH30B	29.190	30.690	5	200	5	200	0.5	0.1	23.0
UDZVFH33B	32.150	33.790	5	250	5	250	0.5	0.1	25.0
UDZVFH36B	35.070	36.870	5	300	5	300	0.5	0.1	27.0
UDZVFH39B	38.020	39.980	2	300	2	-	-	0.1	30.0
UDZVFH43	40.000	45.000	2	550	2	-	-	0.1	33.0
UDZVFH47	44.000	49.000	2	600	2	-	-	0.1	36.0

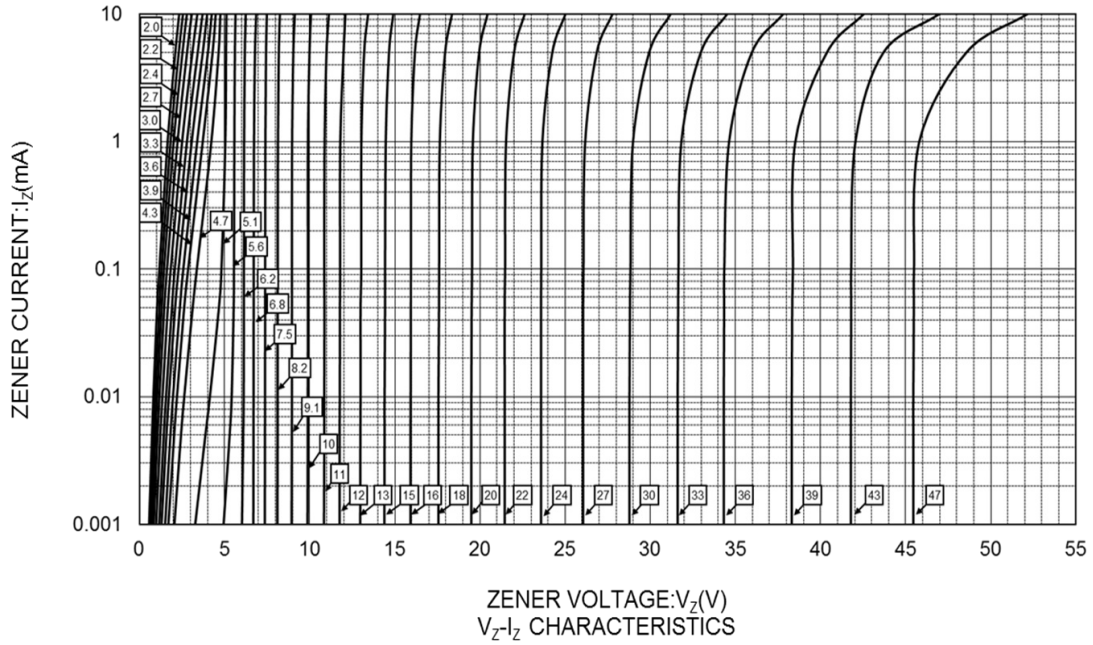
Zener voltage (V_Z) is measured by applying current with 40ms pulse. Dynamic resistance (Z_Z) is measured by applying small current (AC) and specified current (I_Z) simultaneously.

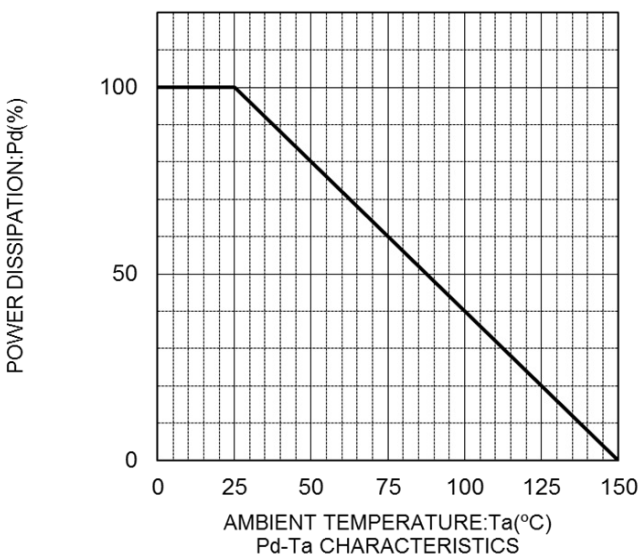
● Marking

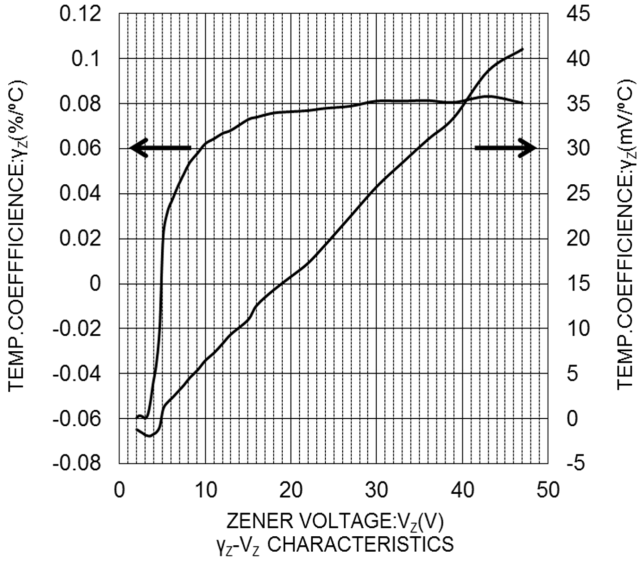
P/N	Marking	P/N	Marking
UDZVFH2.0B	02	UDZVFH10B	05
UDZVFH2.2B	12	UDZVFH11B	15
UDZVFH2.4B	22	UDZVFH12B	25
UDZVFH2.7B	32	UDZVFH13B	35
UDZVFH3.0B	42	UDZVFH15B	45
UDZVFH3.3B	52	UDZVFH16B	55
UDZVFH3.6B	62	UDZVFH18B	65
UDZVFH3.9B	72	UDZVFH20B	75
UDZVFH4.3B	82	UDZVFH22B	85
UDZVFH4.7B	92	UDZVFH24B	95
UDZVFH5.1B	A2	UDZVFH27B	A5
UDZVFH5.6B	C2	UDZVFH30B	C5
UDZVFH6.2B	E2	UDZVFH33B	E5
UDZVFH6.8B	F2	UDZVFH36B	F5
UDZVFH7.5B	H2	UDZVFH39B	H5
UDZVFH8.2B	J2	UDZVFH43	L8
UDZVFH9.1B	L2	UDZVFH47	M8

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● Characteristic Curves

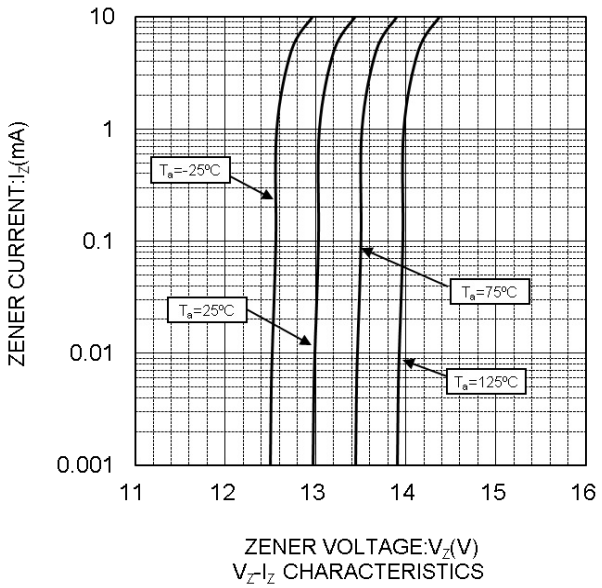


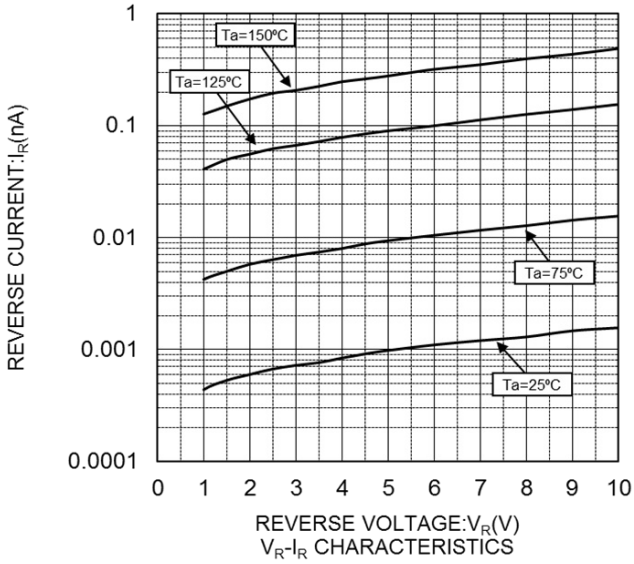


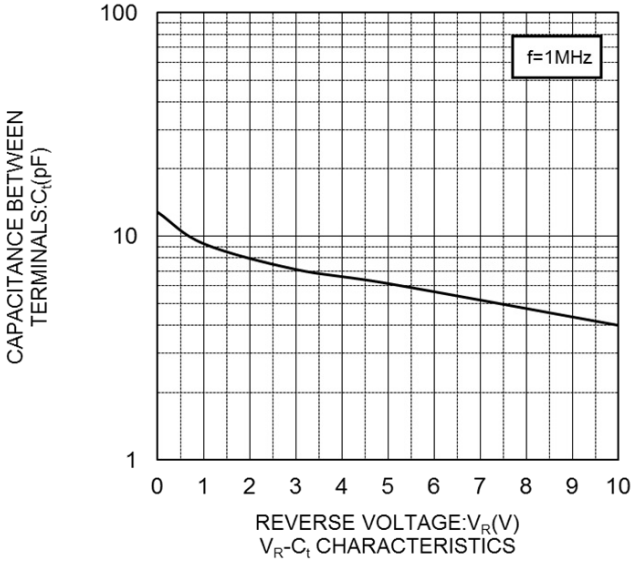


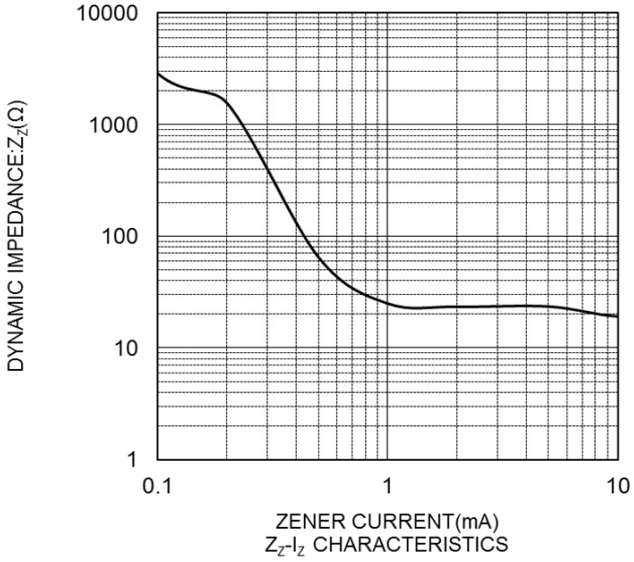
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●Characteristic Curves



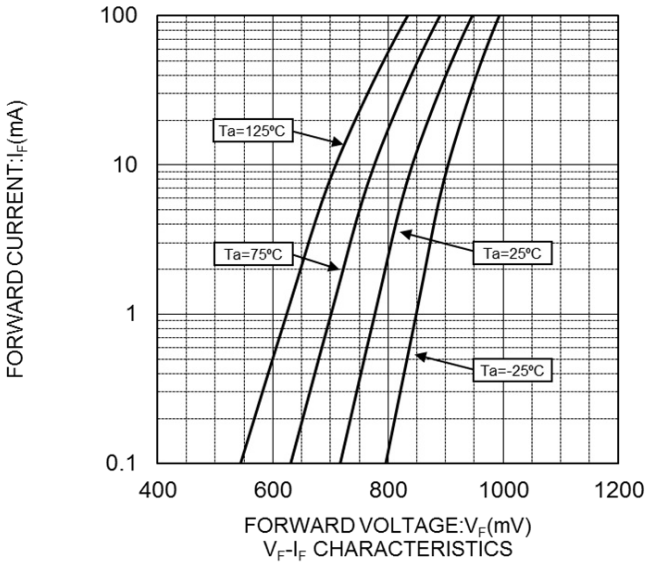


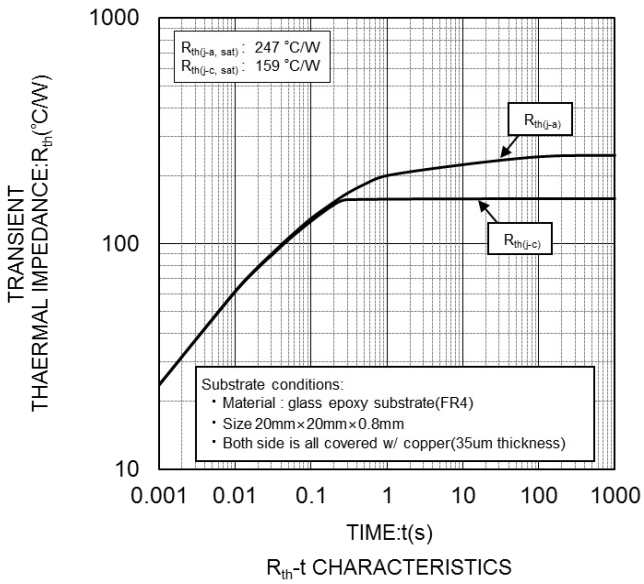




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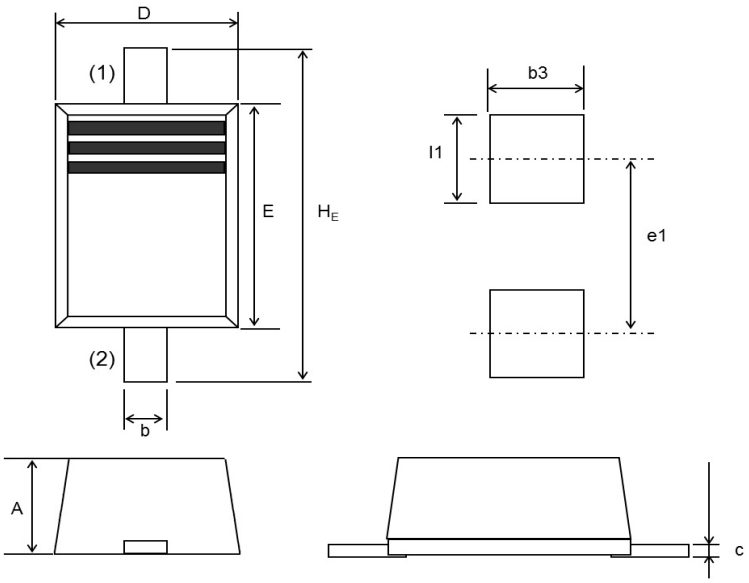
●Characteristic Curves





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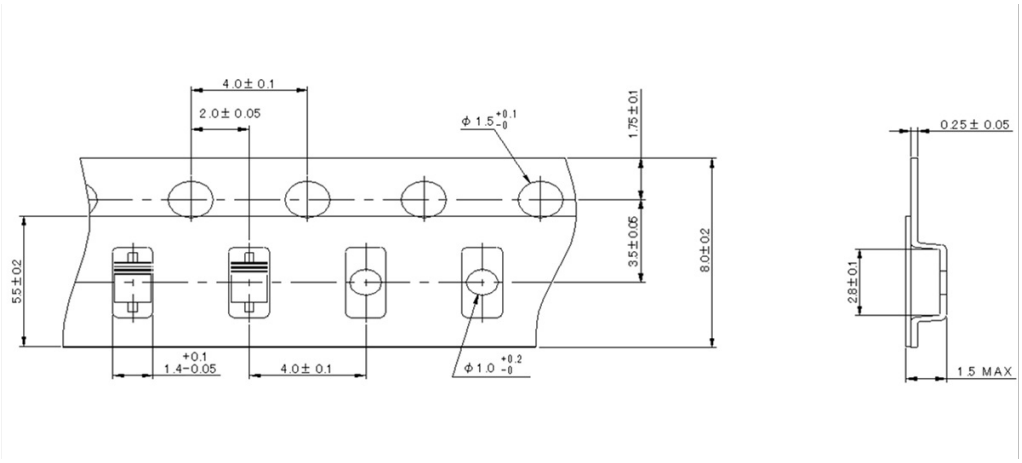
●Dimension (UMD2 SOD-323F SC-90A)



DIM	Milimeters			Inches		
	Min.	Average	Max.	Min.	Average	Max.
A	0.60	0.70	0.90	0.024	0.028	0.035
b	0.25	0.30	0.35	0.010	0.012	0.014
c	0.05	0.10	0.20	0.002	0.004	0.008
D	1.15	1.25	1.35	0.045	0.049	0.053
E	1.60	1.70	1.80	0.063	0.067	0.071
H_E	2.30	2.50	2.70	0.091	0.098	0.106
l1	0.80	-	-	0.031	-	-
b3	0.90	-	-	0.035	-	-
e1	-	2.10	-	-	0.083	-

(1) The marking bar indicates the cathode.
(2) The direction indicates the anode.

●Taping (Unit:mm)



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Notice

Precaution on using ROHM Products

1. If you intend to use our Products in devices requiring extremely high reliability (such as medical equipment (Note 1), aircraft/spacecraft, nuclear power controllers, 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	CLASSⅡb	CLASSⅢ
CLASSⅣ		CLASSⅢ	

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 not designed 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_2, H_2S, NH_3, SO_2, and NO_2
   [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

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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 Ionizer, 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_2, H_2S, NH_3, SO_2, and NO_2
   - [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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BD2232G-GTR BD90640UEFJ-CE2 BD9702T-V5 ESR18EZPF2002 R6524KNX3C16 RB162LAM-60TR RGW50TK65DGVC11 RRH050P03GZETB YQ8RSM10SDTL1 BR25G128FVM-5ATR RBR5L40ADDTE25 BD5291GWL-E2 SMLK28WBNCW1 YQ3RSM10SDTFTL1 2SD2701TL BU18TD2WNVX-TL RB-D62Q1367TB32 BD00GC0WEFJ-E2 BD9G201UEFJ-ME2 BD14220G-CTR BR24G08FJ-5E2 YQ3RSM10SDTL1 2SD1782KT146R ESR18EZPF1302 ESR18EZPF6R80 ESR25JZPF3R00 LTR100LJZPFSR036 RB060MM-30TR SML-D12M8WT86 ESR10EZPF2004