



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

SB05-03Q — Schottky Barrier Diode

30V, 500mA Rectifier

Applications

- High frequency rectification (switching regulators, converters, choppers)

Features

- Low forward voltage ($V_F \text{ max}=0.55\text{V}$)
- Low switching noise
- Low leakage current and high reliability due to highly reliable planar structure
- Small-sized package, permitting SB05-03Q-applied sets to be compact and slim
- Fast reverse recovery time ($t_{RR} \text{ max}=10\text{ns}$)

Specifications

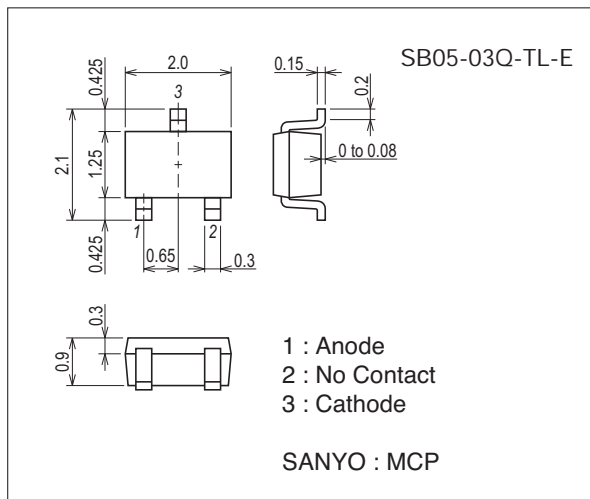
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|--|-----------|-------------------------|-------------|------------------|
| Repetitive Peak Reverse Voltage | V_{RRM} | | 30 | V |
| Nonrepetitive Peak Reverse Surge Voltage | V_{RSM} | | 35 | V |
| Average Output Current | I_O | | 500 | mA |
| Surge Forward Current | I_{FSM} | 50Hz sine wave, 1 cycle | 3 | A |
| Junction Temperature | T_j | | -55 to +125 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +125 | $^\circ\text{C}$ |

Package Dimensions

unit : mm (typ)

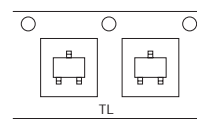
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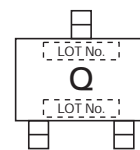
Product & Package Information

- Package : MCP
- JEITA, JEDEC : SC-70, SOT-323
- Minimum Packing Quantity : 3,000 pcs./reel

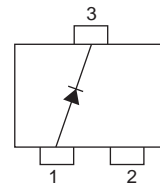
Packing Type: TL



Marking



Electrical Connection

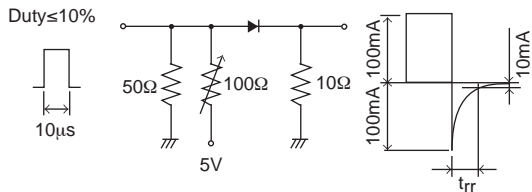


SB05-03Q

Electrical Characteristics at Ta=25°C

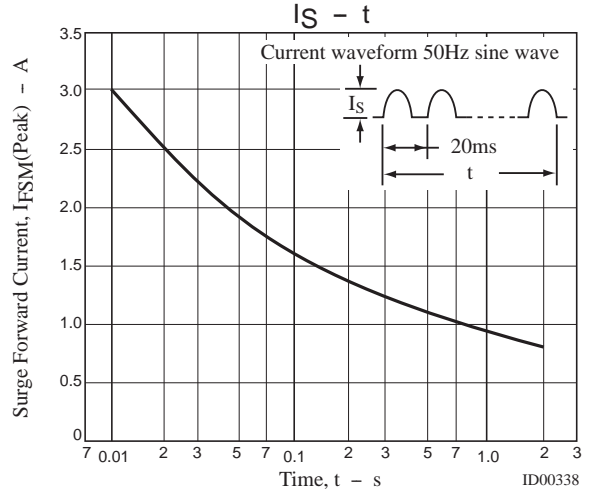
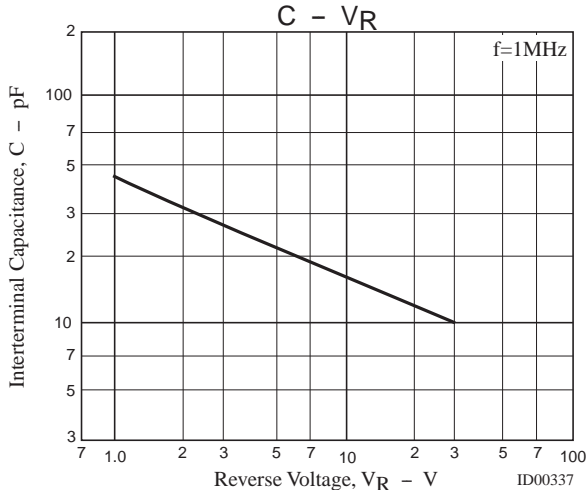
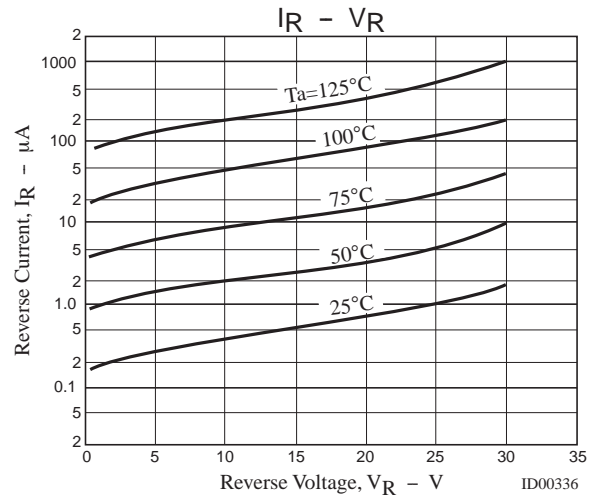
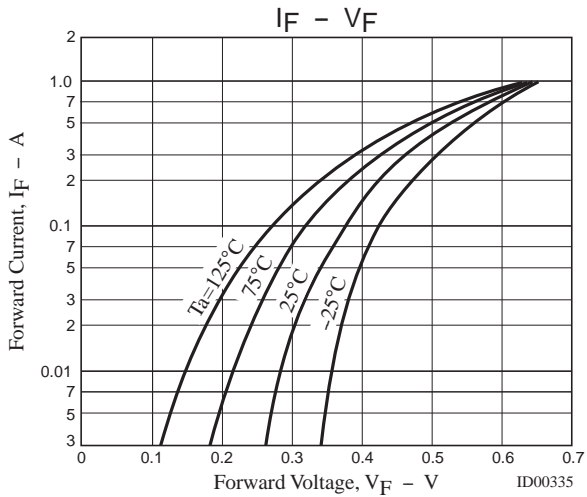
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---------------------------|---------------|---|---------|-----|------|---------------|
| | | | min | typ | max | |
| Reverse Voltage | V_R | $I_R=150\mu A$ | 30 | | | V |
| Forward Voltage | V_F | $I_F=500mA$ | | | 0.55 | V |
| Reverse Current | I_R | $V_R=15V$ | | | 30 | μA |
| Interterminal Capacitance | C | $V_R=10V, f=1MHz$ | | 16 | | pF |
| Reverse Recovery Time | t_{rr} | $I_F=I_R=100mA$, See specified Test Circuit. | | | 10 | ns |
| Thermal Resistance | $R_{th(j-a)}$ | | | 600 | | $^{\circ}C/W$ |

t_{rr} Test Circuit



Ordering Information

| Device | Package | Shipping | memo |
|---------------|---------|----------------|---------|
| SB05-03Q-TL-E | MCP | 3,000pcs./reel | Pb Free |



Embossed Taping Specification

SB05-03Q-TL-E

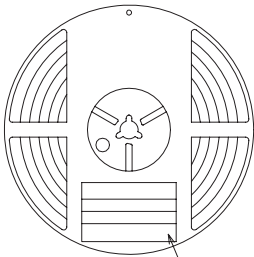
1. Packing Format

| Package Name | Carrier Tape Type | Maximum Number of devices contained (pcs) | | | Packing format | |
|--------------|-------------------|---|-----------|-----------|---|--|
| | | Reel | Inner box | Outer box | Inner BOX (C-1) | Outer BOX (A-7) |
| MCP | MCP | 3,000 | 15,000 | 90,000 | 5 reels contained Dimensions:mm (external) 183×72×185 | 6 inner boxes contained Dimensions:mm (external) 440×195×210 |

Reel label, Inner box label
(unit : mm)

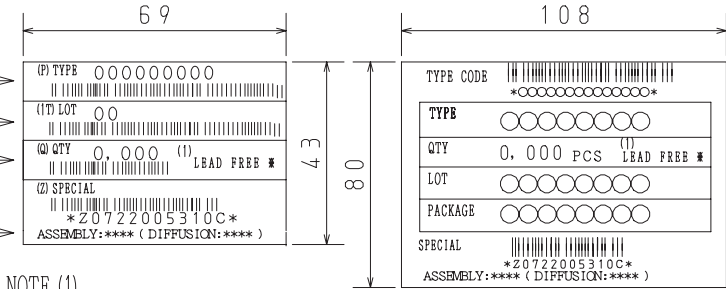
Outer box label
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Type No.
LOT No.
Quantity
Origin

Reel label



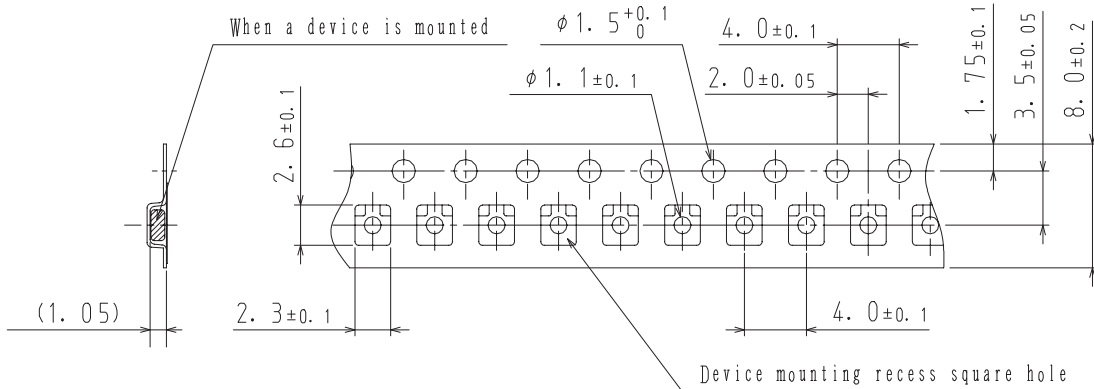
NOTE (1)

The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

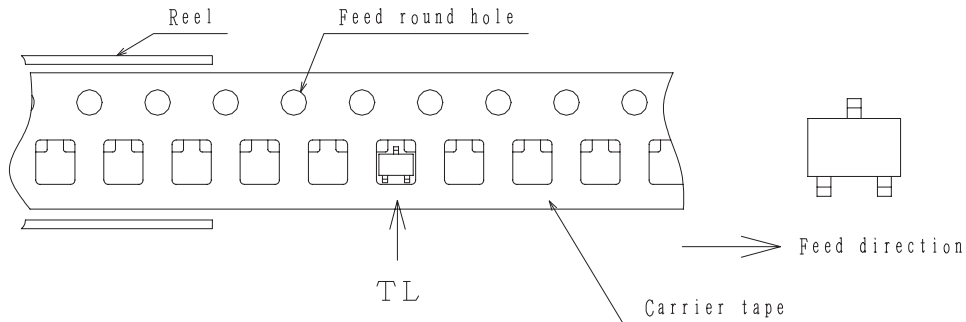
| Label | JEITA Phase |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

2. Taping configuration

2-1. Carrier tape size (unit:mm)



2-2. Device placement direction

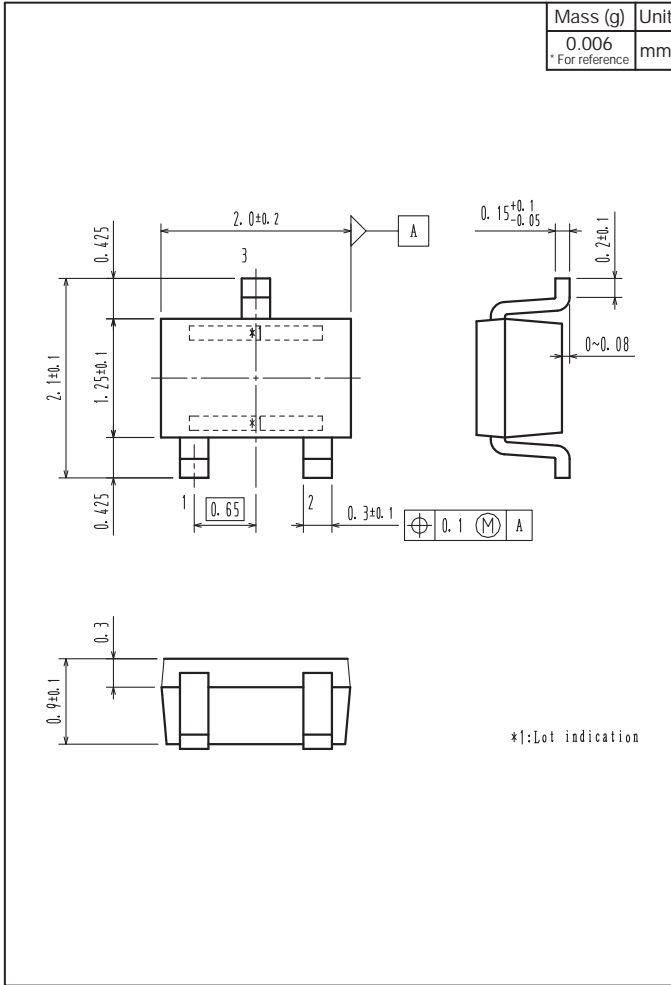


Those with oen electrode terminal on the feed hole side.....TL

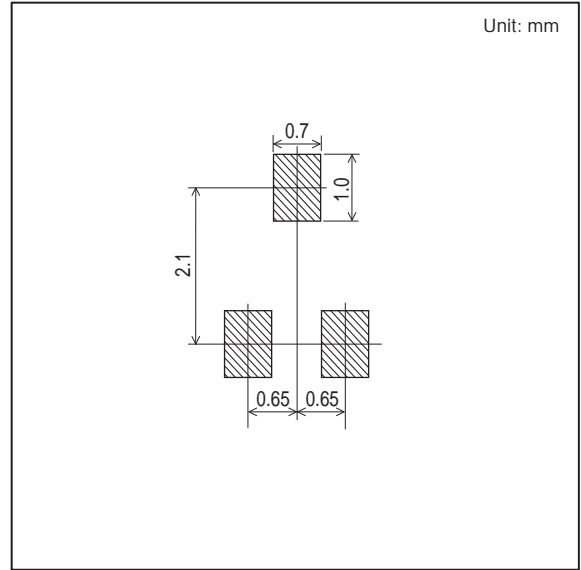
SB05-03Q

Outline Drawing

SB05-03Q-TL-E



Land Pattern Example



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