



# THE DATASHEET OF SS56C

**SPECIFICATION SHEET**

|                                |                                                                                                                                                                                                                                                       |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SPECIFICATION SHEET NO.</b> | N1230- SMCSS560000S56                                                                                                                                                                                                                                 |
| <b>DATE</b>                    | Dec.30, 2021                                                                                                                                                                                                                                          |
| <b>REVISION</b>                | A0                                                                                                                                                                                                                                                    |
| <b>DESCRIPTION</b>             | <p>SMD Schottky Barrier Rectifier, 2 Pads, SMC/DO-214AB series,<br/> SS56C Type Reverse Voltage 60V Max. Forward Current 5.0A Max.<br/> Operating Temp. Range -55°C ~+150°C,<br/> Package in Tape/Reel, 3000pcs/Reel<br/> RoHS/RoHS III compliant</p> |
| <b>CUSTOMER</b>                |                                                                                                                                                                                                                                                       |
| <b>CUSTOMER PART NUMBER</b>    |                                                                                                                                                                                                                                                       |
| <b>CROSS REF. PART NUMBER</b>  |                                                                                                                                                                                                                                                       |
| <b>ORIGINAL PART NUMBER</b>    | MDD SS56C                                                                                                                                                                                                                                             |
| <b>PART CODE</b>               | SMCSS560000S56                                                                                                                                                                                                                                        |

|                         |                                                                                     |                                                                                      |                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>VENDOR APPROVE</b>   |                                                                                     |                                                                                      |                                                                                       |
| Issued/Checked/Approved |  |  |  |
| DATE: Dec.30, 2021      |                                                                                     |                                                                                      |                                                                                       |

|                         |
|-------------------------|
| <b>CUSTOMER APPROVE</b> |
|                         |
| DATE:                   |

1/15/2022

1

## SMD SCHOTTKY BARRIER RECTIFIER SMC SERIES

### MAIN FEATURE

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Low reverse leakage
- Built-in strain relief
- Low power loss, high efficiency
- High forward surge current capability
- High temperature soldering guaranteed: 250°C/ 10 seconds at terminals
- Metal silicon junction, majority carrier conduction



### APPLICATION

- For surface mounted applications

**RFQ**

[Request For Quotation](#)

### PART CODE GUIDE

| SMC | SS560000 | S | 56 |
|-----|----------|---|----|
| 1   | 2        | 3 | 4  |

- 1) **SMC**: SMD Schottky Barrier Rectifier, 2 Pads, Package SMC/DO-214AB series
- 2) **SS560000**: Type code for original part number SS56C
- 3) **S**: Package code, Tape/Reel, 3000pcs/reel.
- 4) **56**: Specification code for Reverse Voltage 60V Max. Forward Current 5.0A Max.

## SMD SCHOTTKY BARRIER RECTIFIER SMC SERIES

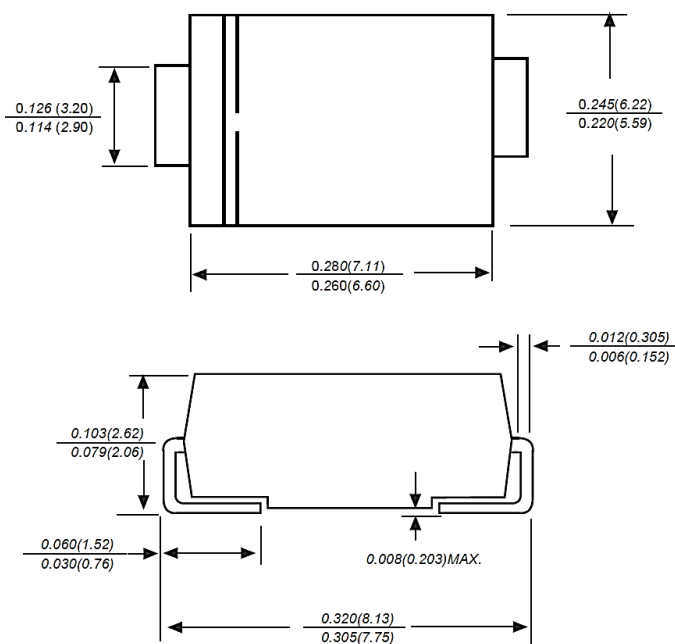
**DIMENSION (Unit: Inch/mm)**

Image for reference

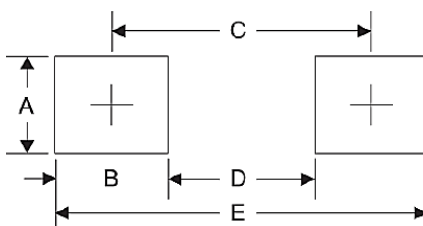


Marking: SS56C

SMC/DO-214AB



Recommend Pad Layout



| Symbol | Unit (inch) | Unit (mm) |
|--------|-------------|-----------|
| A      | 0.170       | 4.30      |
| B      | 0.160       | 4.10      |
| C      | 0.311       | 7.90      |
| D      | 0.150       | 3.80      |
| E      | 0.472       | 12.0      |

## SMD SCHOTTKY BARRIER RECTIFIER SMC SERIES

### MECHANICAL DATA

| Case                                   | Terminals                                              | Polarity                        | Mounting Position | Weight per piece           |
|----------------------------------------|--------------------------------------------------------|---------------------------------|-------------------|----------------------------|
| JEDEC SMC/DO-214AB molded plastic body | Solder plated, Solderable per MIL-STD-750, Method 2026 | Polarity symbol marking on case | Any               | 0.0070 Ounce, 0.2180 grams |

### MAX. RATING & CHARACTERISTICS

| Parameter                                                                                               | SYMBOLS          | VALUE |         |      | UNITS |
|---------------------------------------------------------------------------------------------------------|------------------|-------|---------|------|-------|
|                                                                                                         |                  | Min.  | Typical | Max. |       |
| <b>Repetitive peak reverse voltage</b>                                                                  | V <sub>RRM</sub> |       |         | 60   | Volts |
| <b>RMS voltage</b>                                                                                      | V <sub>RMS</sub> |       |         | 42   | Volts |
| <b>DC blocking voltage</b>                                                                              | V <sub>DC</sub>  |       |         | 60   | Volts |
| <b>Average forward output rectified current at TL (see fig.1)</b>                                       | I <sub>AV</sub>  |       |         | 5.0  | A     |
| <b>Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)</b> | I <sub>FSM</sub> |       | 175     |      | A     |
| <b>Instantaneous forward voltage at 5.0A</b>                                                            | V <sub>F</sub>   |       |         | 0.70 | Volts |
| <b>DC reverse current at rated DC blocking voltage</b>                                                  | I <sub>R</sub>   |       |         | 1.0  | mA    |
|                                                                                                         |                  |       |         | 50   | mA    |
| <b>Junction capacitance (NOTE 2)</b>                                                                    | C <sub>J</sub>   |       | 400     |      | pF    |
| <b>Thermal resistance (Note 3)</b>                                                                      | R <sub>QJA</sub> |       | 35      |      | °C/W  |
| <b>Operating junction temperature range</b>                                                             | T <sub>J</sub>   | -55   |         | +150 | °C    |
| <b>Storage temperature range</b>                                                                        | T <sub>STG</sub> | -55   |         | +150 | °C    |

#### Note

1. Ratings at 25 C ambient temperature unless otherwise specified. Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V
3. P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas.

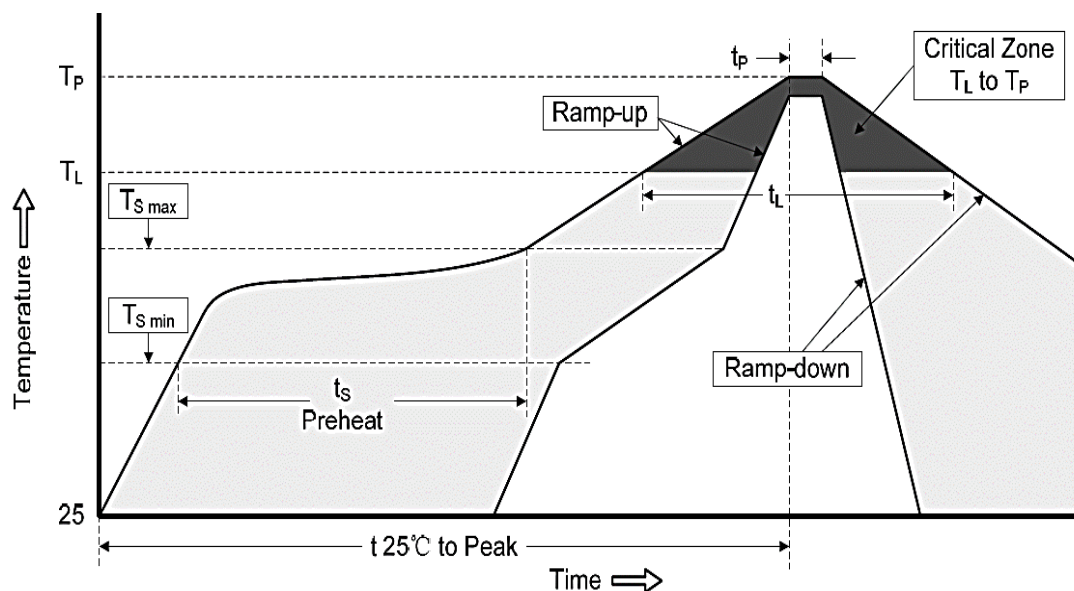
## SMD SCHOTTKY BARRIER RECTIFIER SMC SERIES

### RELIABILITY

| Number | Experiment Items                   | Experiment Method And Conditions                                                                               | Reference Documents             |
|--------|------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------|
| 1      | Solder Resistance Test             | Test 250°C± 5°C for 10 ± 2 sec.<br>Immerse body into solder 1/16" ± 1/32"                                      | MIL-STD-750D<br>METHOD-2031.2   |
| 2      | Solderability Test                 | 230°C ±5°C for 5 sec.                                                                                          | MIL-STD-750D<br>METHOD-2026.1 0 |
| 3      | Pull Test                          | 1 kg in axial lead direction for 10 sec.                                                                       | MIL-STD-750D<br>METHOD-2036.4   |
| 4      | Bend Test                          | 0.5Kg Weight Applied To Each Lead,<br>Bending Arcs 90 °C ± 5 °C For 3 Times                                    | MIL-STD-750D<br>METHOD-2036.4   |
| 5      | High Temperature Reverse Bias Test | TA=100°C for 1000 Hours at VR=80%<br>Rated VR                                                                  | MIL-STD-750D<br>METHOD-1038.4   |
| 6      | Forward Operation Life Test        | TA=25°C Rated Average Rectified<br>Current                                                                     | MIL-STD-750D<br>METHOD-1027.3   |
| 7      | Intermittent Operation Life Test   | On state: 5 min with rated IRMS Power<br>Off state: 5 min with Cool Forced Air.<br>On and off for 1000 cycles. | MIL-STD-750D<br>METHOD-1036.3   |
| 8      | Pressure Cooker Test               | 15 PSIG, TA=121°C, 4 hours                                                                                     | MIL-S-19500<br>APPENOIXC        |
| 9      | Temperature Cycling Test           | -55°C~+125°C; 30 Minutes For Dwelled<br>Time 5 minutes for transferred time.<br>Total: 10 cycles.              | MIL-STD-750D<br>METHOD-1051.7   |
| 10     | Thermal Shock Test                 | 0°C for 5 minutes., 100°C for 5minutes,<br>Total: 10 cycles                                                    | MIL-STD-750D<br>METHOD-1056.7   |
| 11     | Forward Surge Test                 | 8.3ms Single Sale Sine-wave One Surge.                                                                         | MIL-STD-750D<br>METHOD-4066.4   |
| 12     | Humidity Test                      | TA=65°C, RH=98% for 1000 hours.                                                                                | MIL-STD-750D<br>METHOD-1021.3   |
| 13     | High Temperature Storage life Test | 150°C for 1000 Hours                                                                                           | MIL-STD-750D<br>METHOD-1031.5   |

## SMD SCHOTTKY BARRIER RECTIFIER SMC SERIES

### SUGGESTED REFLOW PROFILE (For Reference Only)



| Profile Feature                                 |                           | Pb-Free Assembly  |
|-------------------------------------------------|---------------------------|-------------------|
| Average Ramp-up Rate (Ts Max to Tp)             |                           | 3°C/second Max    |
| Preheat                                         | Temperature Min (Ts Min.) | 150°C             |
|                                                 | Temperature Max (Ts Max.) | 200°C             |
|                                                 | Time (ts Min. to ts Max.) | 60 ~ 180 seconds  |
| Time maintained above                           | Temperature (Tl)          | 217°C             |
|                                                 | Time (tl)                 | 60 ~ 150 seconds  |
| Peak/Classification Temperature (Tp)            |                           | 250 °C            |
| Time within 5°C of actual Peak Temperature (tp) |                           | 10 seconds        |
| Ramp-down rate                                  |                           | 6 °C /Second Max. |
| Time 25 °C to Peak Temperature                  |                           | 6 minutes Max.    |
| Suggest reflow times                            |                           | 3 Times Max.      |

## SMD SCHOTTKY BARRIER RECTIFIER SMC SERIES

### RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

Fig.1 Forward Current Derating Curve

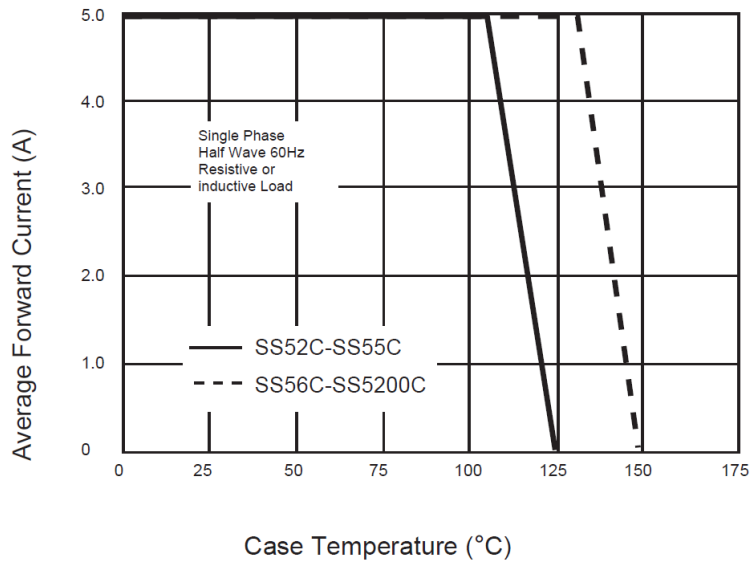
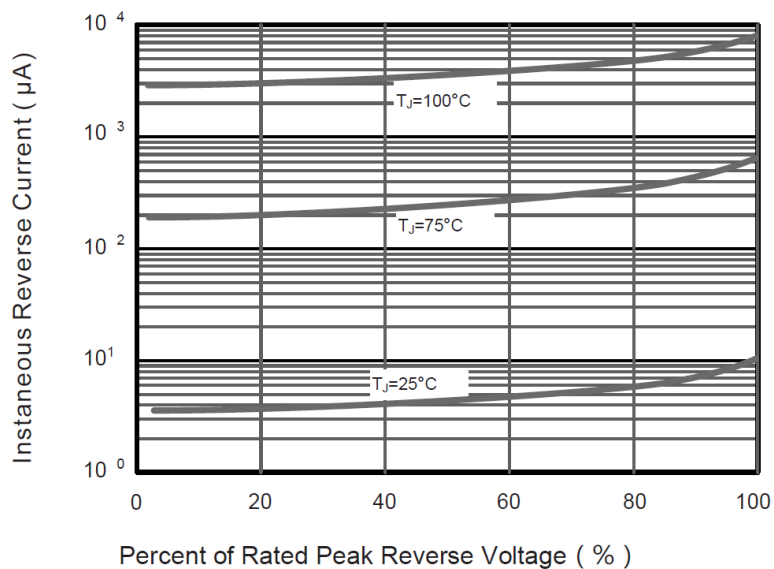


Fig.2 Typical Reverse Characteristics



## SMD SCHOTTKY BARRIER RECTIFIER SMC SERIES

### RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

Fig.3 Typical Forward Characteristic

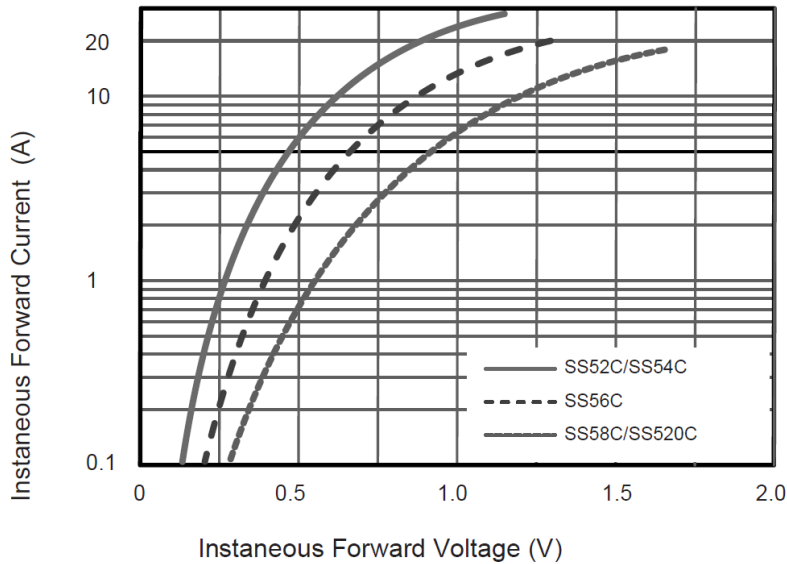
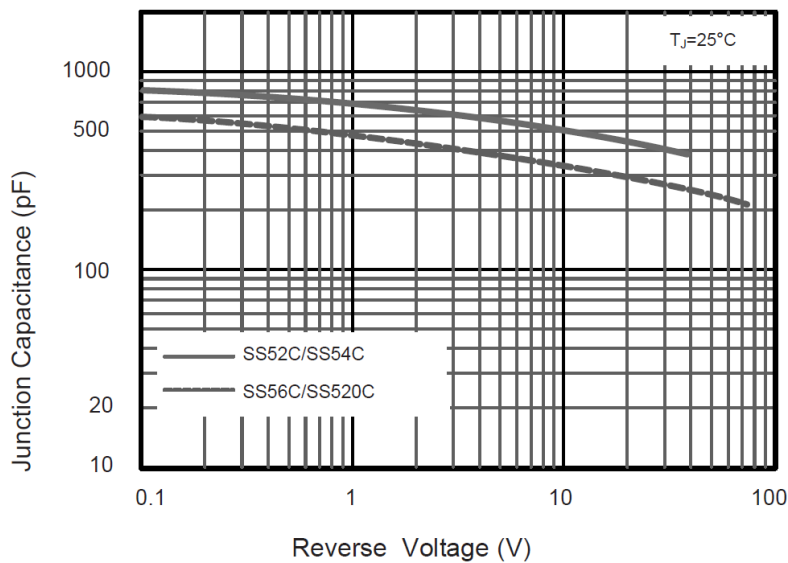


Fig.4 Typical Junction Capacitance



## SMD SCHOTTKY BARRIER RECTIFIER SMC SERIES

### RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

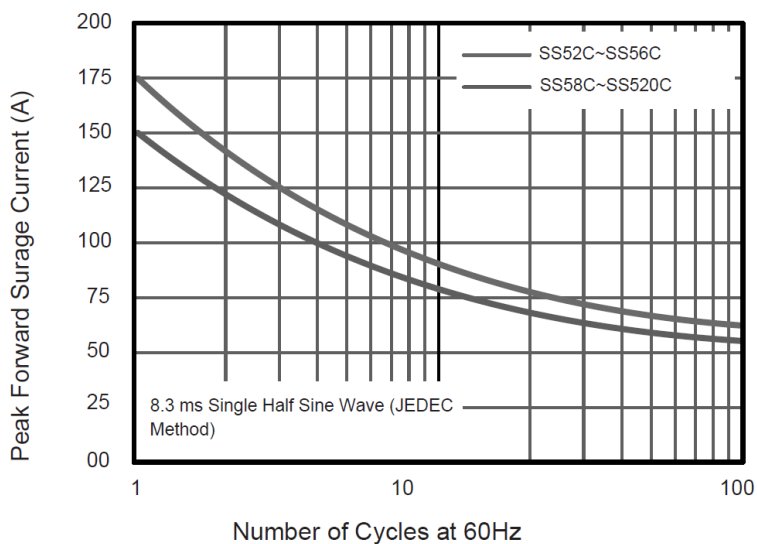
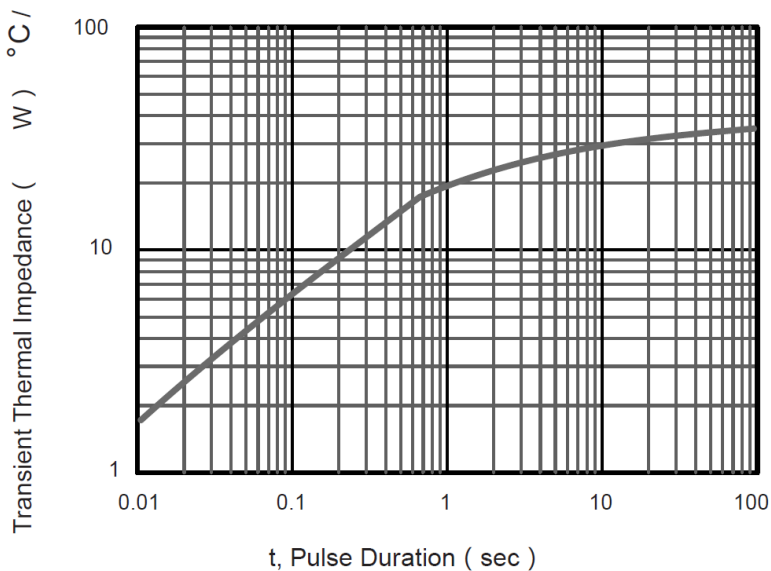


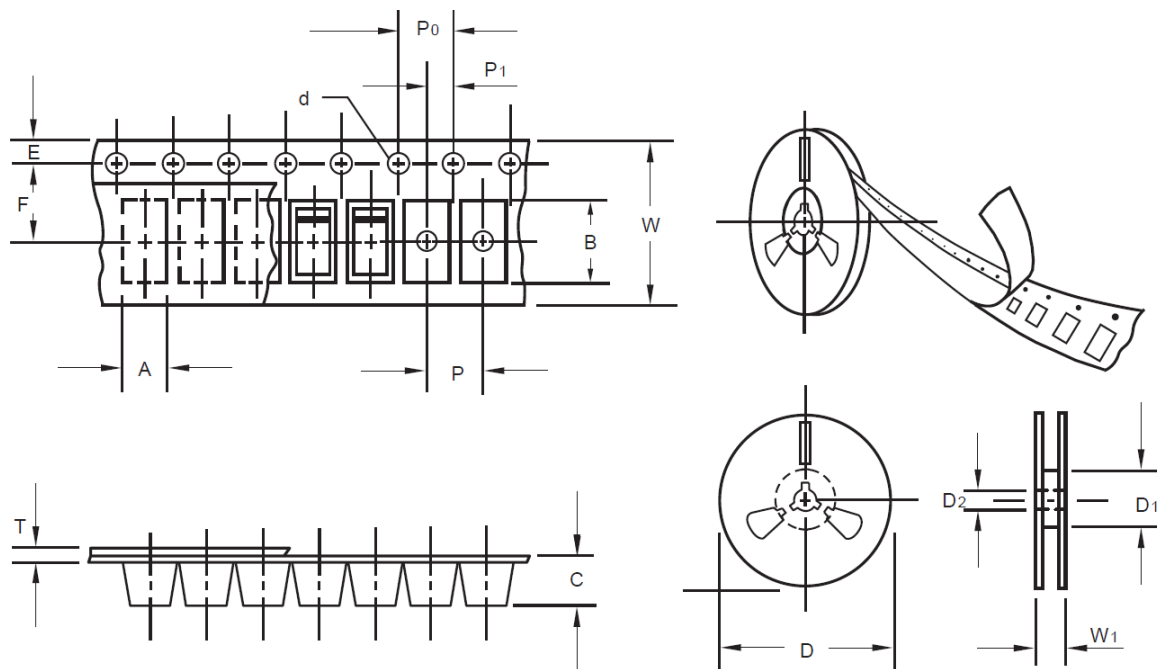
Fig.6- Typical Transient Thermal Impedance



## SMD SCHOTTKY BARRIER RECTIFIER SMC SERIES

### TAPE/REEL (Unit: mm)

All Devices are packed in accordance with EIA standard RS-481-A and specifications.



| Item                      | Symbol | Tolerance | SMC/DO-214AB |
|---------------------------|--------|-----------|--------------|
| Carrier width             | A      | 0.1       | 6.15         |
| Carrier Length            | B      | 0.1       | 8.41         |
| Carrier Depth             | C      | 0.1       | 2.42         |
| Sprocket hole             | d      | 0.05      | 1.50         |
| 13" Reel outside diameter | D      | 2.0       | 330.00       |
| 13" Reel inner diameter   | D1     | Min.      | 50.00        |
| 7" Reel outside diameter  | -      | -         | -            |
| 7" Reel inner diameter    | -      | -         | -            |
| Feed hole diameter        | D2     | 0.5       | 13.00        |
| Sprocket hole position    | E      | 0.1       | 1.75         |
| Punch hole position       | F      | 0.1       | 7.50         |
| Punch hole pitch          | P      | 0.1       | 8.00         |
| Sprocket hole pitch       | P0     | 0.1       | 4.00         |
| Embossment center         | P1     | 0.1       | 2.00         |
| Overall tape thickness    | T      | 0.1       | 0.25         |
| Tape width                | W      | 0.3       | 16.00        |
| Reel width                | W1     | 1.0       | 16.50        |

**SMD SCHOTTKY BARRIER RECTIFIER SMC SERIES**

**PACKAGE For Reference**

|           |          |
|-----------|----------|
| Case Code | SMC      |
| Reel Size | 13"      |
| Reel Size | 330 mm   |
| MPQ/Reel  | 3000 pcs |
| Qty. /Box | 6000 pcs |
| G.W/Box   | 6 lbs    |

**DISCLAIMER**

NextGen Component, Inc. reserves the right to make changes to the product(s) and or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  View [SS56C](#) on WIN SOURCE
-  [MDD](#) Information

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management