



貼片型穩壓二極管

SZD55C - Series

Surface Mount Zener Diode

Voltage Range: 0.5W 4.7V ~ 36V (±5%)

Features

- ◆ Surface mount device, suitable for auto-placement surface mounting application
- ◆ Metal tin plating termination layer for fellow & wave soldering
- ◆ Silicon Planar Power Zener Diode.
- ◆ ±5%, ±2% standard Vz Tolerance
- ◆ 4.7V ~ 36 Nominal Zener Voltage
- ◆ Designed for Surface Mount Application

Figure



Mechanical Data

- ◆ Case: 0805 Weight approx 6 mg
- 1206 Weight approx 10 mg
- ◆ Marking Cathode band
- ◆ Mounting Position: Any

Device Marking



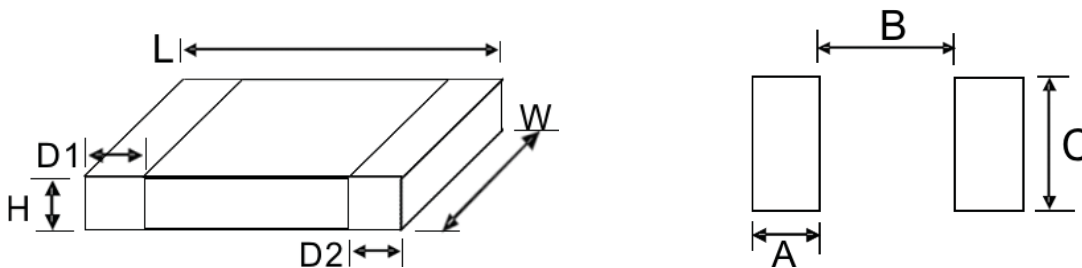
ORDERING INFORMATION See page 2 of Part number  
Example: SZD55C4V7S (0805 4.7V)

| Type | Diode | Tolerance        | Voltage   | Size             |
|------|-------|------------------|-----------|------------------|
| SZD  | 55    | C: ±5%<br>B: ±2% | 4V7 ~ 36V | S : 0805<br>1206 |

DIMENSION

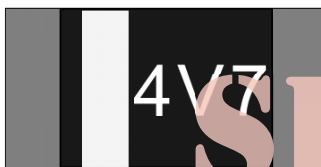
Unit: mm

| Type     | Size | DIMENSION |          |          |          |          | Mounting Pad Layout |      |     |
|----------|------|-----------|----------|----------|----------|----------|---------------------|------|-----|
|          |      | L         | W        | H        | D1       | D2       | A                   | B    | C   |
| SZD55C   | 1206 | 3.2±0.2   | 1.5±0.2  | 0.85±0.1 | 0.45±0.2 | 0.40±0.2 | 0.635               | 2.16 | 1.7 |
| SZD55B   | 1206 | 3.2±0.2   | 1.5±0.2  | 0.85±0.1 | 0.45±0.2 | 0.40±0.2 | 0.635               | 2.16 | 1.7 |
| SZD55C-S | 0805 | 2.0±0.2   | 1.25±0.2 | 0.85±0.1 | 0.35±0.2 | 0.35±0.2 | 0.508               | 1.22 | 1.4 |
| SZD55B-S | 0805 | 2.0±0.2   | 1.25±0.2 | 0.85±0.1 | 0.35±0.2 | 0.35±0.2 | 0.508               | 1.22 | 1.4 |



DEVICES OUTLOOK

Front side



Back side





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□ **ELECTRICAL CHARACTERISTICS b** ( T<sub>amb</sub> = 25°C )

| SERIES                                      | SZD55C         | SZD55B     | SZD55C-S   | SZD55B-S   |
|---|----------------|------------|------------|------------|
| Size Code in inch (mm)                      | 1206(3216)     | 1206(3216) | 0805(2012) | 0805(2012) |
| Zener Voltage Tolerance                     | ±5%            | ±2%        | ±5%        | ±2%        |
| Operating Temperature                       | -55°C ~ +125°C |            |            |            |
| Power Dissipation ( P <sub>tot</sub> )      | 500mW          |            |            |            |
| Forward Voltage at 200mA ( V <sub>F</sub> ) | 1.5V           |            |            |            |

□ **ELECTRICAL DATA (±5% Zener Voltage Tolerance)**

| Part Number |            | Device Marking Code | Nominal Zener Voltage V <sub>Z</sub> @I <sub>ZT</sub> |            | Max. Zener Impedance |                                  |     |                                  | Max. Reverse Leakage Current I <sub>R</sub> @V <sub>R</sub> |                                |
|-------------|------------|---------------------|---|------------|----------------------|----------------------------------|-----|----------------------------------|---|--------------------------------|
| (1206) ±5%  | (0805)±5%  |                     | Voltage   | Min.(Vol.) | Max.(V)              | V <sub>ZT</sub> @I <sub>ZT</sub> |     | V <sub>ZT</sub> @I <sub>ZT</sub> |   | I <sub>R</sub> @V <sub>R</sub> |
| SZD55C      | SZD55C-S   | Ω                   |   |            |                      | mA                               | Ω   | mA                               | μA  | V                              |
| SZD55C4V7   | SZD55C4V7S | 4V7                 | 4.61  | 4.79       | 70                   | 5                                | 600 | 1                                | 0.5   | 1                              |
| SZD55C5V1   | SZD55C5V1S | 5V1                 | 4.85  | 5.36       | 50                   | 5                                | 550 | 1                                | 0.1   | 1                              |
| SZD55C5V6   | SZD55C5V6S | 5V6                 | 5.32  | 5.88       | 30                   | 5                                | 450 | 1                                | 0.1   | 1                              |
| SZD55C6V2   | SZD55C6V2S | 6V2                 | 5.89  | 6.51       | 10                   | 5                                | 200 | 1                                | 0.1   | 2                              |
| SZD55C6V8   | SZD55C6V8S | 6V8                 | 6.46  | 7.14       | 8                    | 5                                | 150 | 1                                | 0.1   | 3                              |
| SZD55C7V5   | SZD55C7V5S | 7V5                 | 7.13  | 7.88       | 7                    | 5                                | 50  | 1                                | 0.1   | 5                              |
| SZD55C8V2   | SZD55C8V2S | 8V2                 | 7.79  | 8.61       | 7                    | 5                                | 50  | 1                                | 0.1   | 6.2                            |
| SZD55C9V1   | SZD55C9V1S | 9V1                 | 8.65  | 9.56       | 10                   | 5                                | 50  | 1                                | 0.1   | 6.8                            |
| SZD55C10    | SZD55C10S  | 10                  | 9.50  | 10.50      | 15                   | 5                                | 70  | 1                                | 0.1   | 7.5                            |
| SZD55C11    | SZD55C11S  | 11                  | 10.45   | 11.55      | 20                   | 5                                | 70  | 1                                | 0.1   | 8.2                            |
| SZD55C12    | SZD55C12S  | 12                  | 11.40   | 12.60      | 20                   | 5                                | 90  | 1                                | 0.1   | 9.1                            |
| SZD55C13    | SZD55C13S  | 13                  | 12.35   | 13.65      | 26                   | 5                                | 110 | 1                                | 0.1   | 10                             |
| SZD55C15    | SZD55C15S  | 15                  | 14.25   | 15.75      | 30                   | 5                                | 100 | 1                                | 0.1   | 11                             |
| SZD55C16    | SZD55C16S  | 16                  | 15.20   | 16.80      | 40                   | 5                                | 170 | 1                                | 0.1   | 12                             |
| SZD55C18    | SZD55C18S  | 18                  | 17.10   | 18.90      | 50                   | 5                                | 170 | 1                                | 0.1   | 13                             |
| SZD55C20    | SZD55C20S  | 20                  | 19.00   | 21.00      | 55                   | 5                                | 220 | 1                                | 0.1   | 15                             |
| SZD55C22    | SZD55C22S  | 22                  | 20.90   | 23.10      | 55                   | 5                                | 220 | 1                                | 0.1   | 16                             |
| SZD55C24    | SZD55C24S  | 24                  | 22.80   | 25.20      | 80                   | 5                                | 220 | 1                                | 0.1   | 18                             |
| SZD55C27    | SZD55C27S  | 27                  | 25.65   | 28.35      | 80                   | 5                                | 220 | 1                                | 0.1   | 20                             |
| SZD55C30    | SZD55C30S  | 30                  | 28.50   | 31.50      | 80                   | 5                                | 220 | 1                                | 0.1   | 22                             |
| SZD55C33    | SZD55C33S  | 33                  | 31.35   | 34.65      | 80                   | 5                                | 220 | 1                                | 0.1   | 24                             |
| SZD55C36    | SZD55C36S  | 36                  | 34.20   | 37.80      | 80                   | 5                                | 220 | 1                                | 0.1   | 27                             |

◎ Device marking as zener voltage code & cathode terminal.

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Typical Characteristics (  $T_{amb} = 25^{\circ}C$ , unless otherwise specified)

Fig1. Thermal Resistance vs. Lead Length

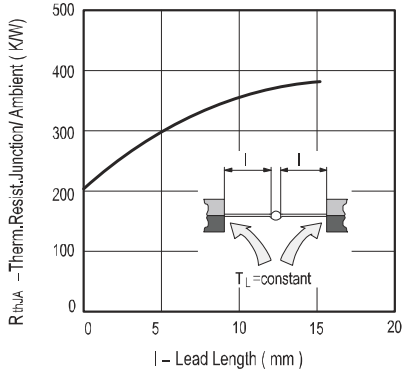


Fig 4. Typical Change of Working Voltage vs. Junction Temperature

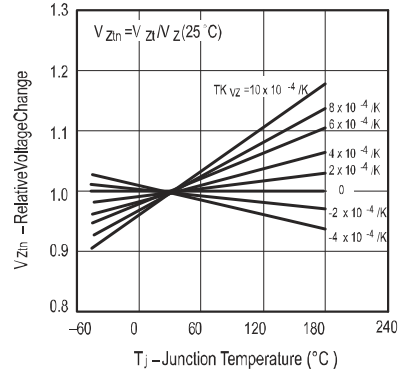


Fig2. Total Power Dissipation vs. Ambient Temperature

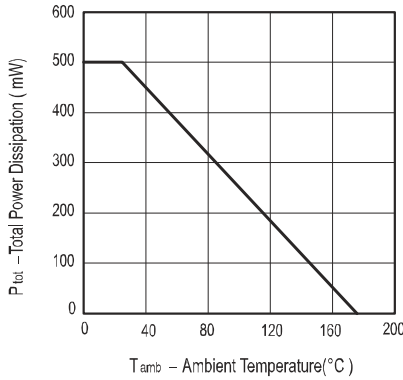


Fig5. Temperature Coefficient of Vz vs. Z-Voltage

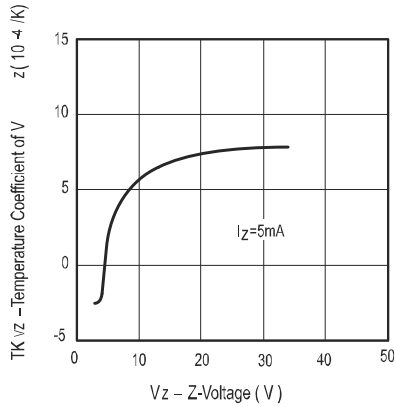


Fig3. Typical Change of Working Voltage under Operating Conditions at  $T_{amb}=25^{\circ}C$

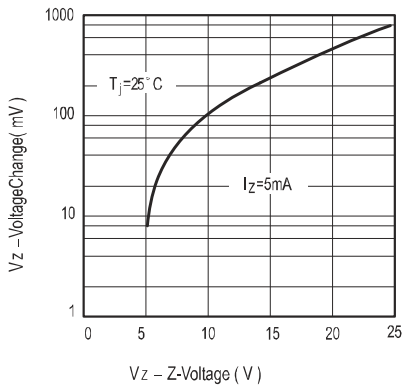
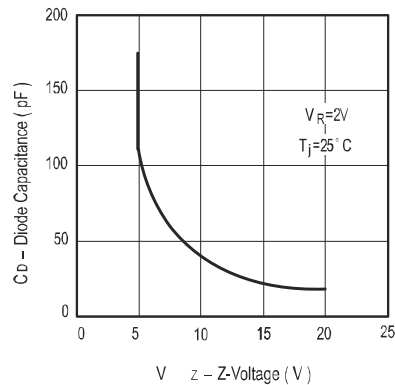


Fig 6. Diode Capacitance vs. Z-Voltage



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Fig 7. Forward Current vs. Forward Voltage

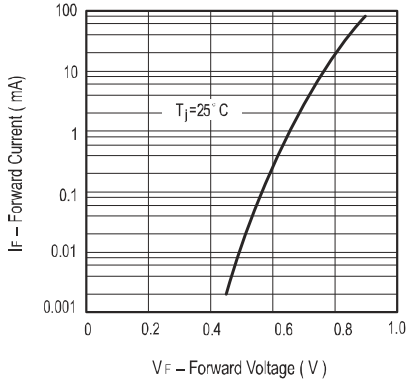


Fig 9. Z-Current vs. Z-Voltage

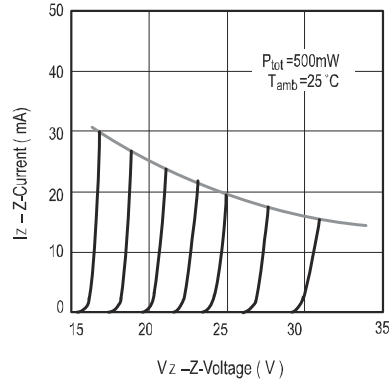


Fig 8. Z-Current vs. Z-Voltage

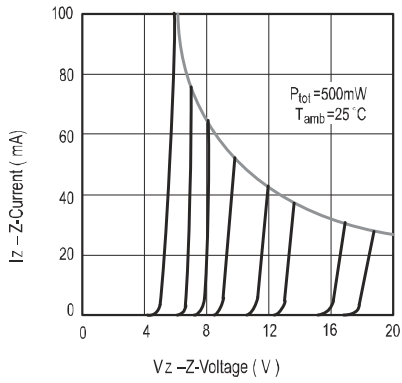


Fig10. Differential Z-Resistance vs. Z-Voltage

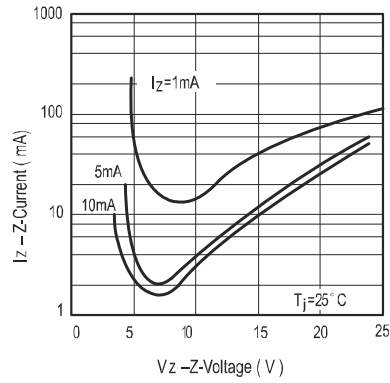
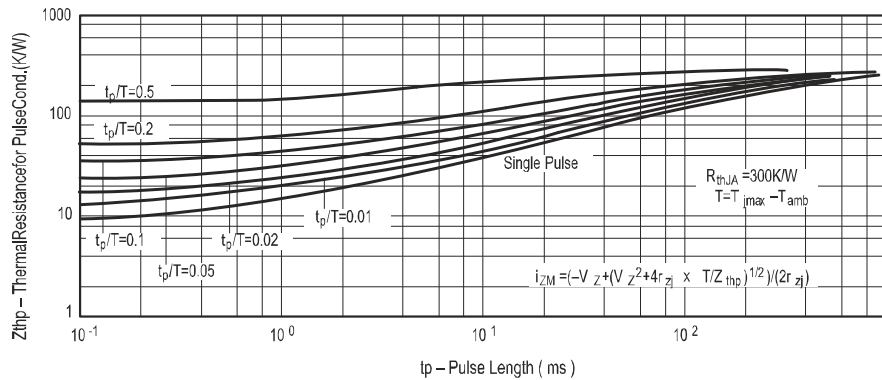


Fig 11. Thermal Response



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Suggested thermal profiles for soldering processes

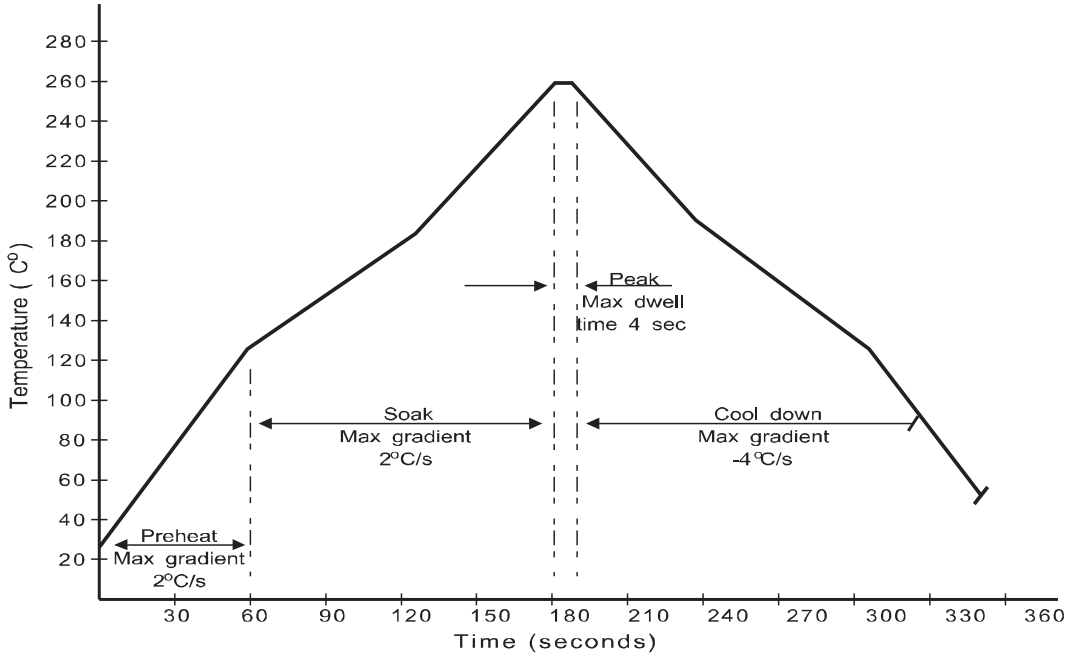


Fig.1 Typical Wave Soldering Thermal Profile

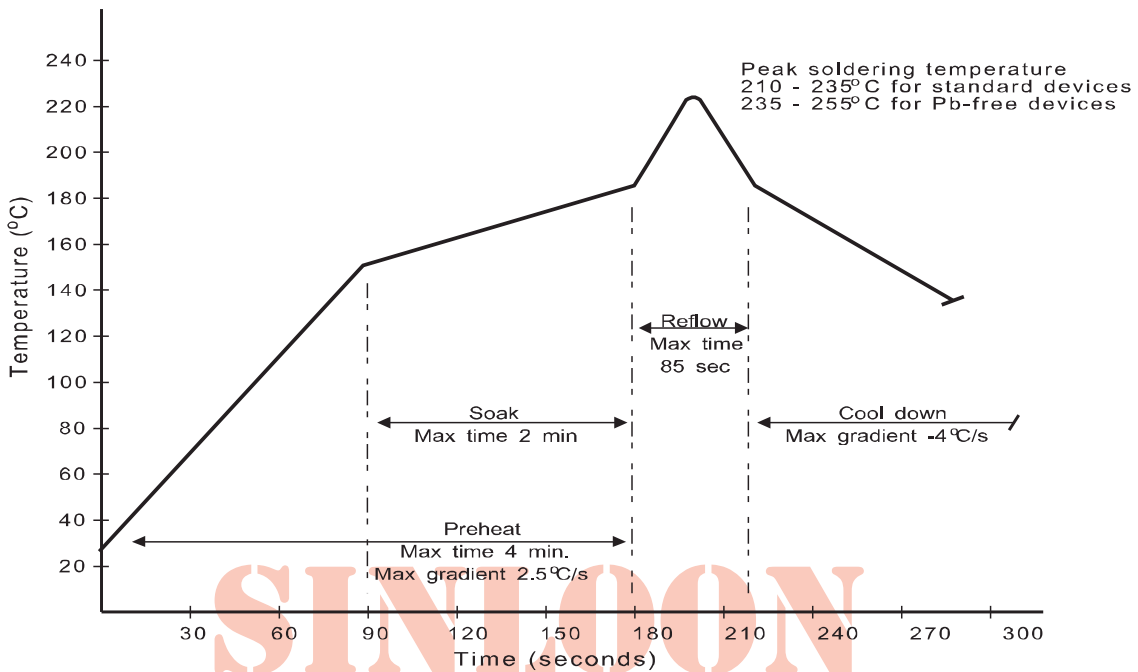


Fig.2 Typical IR Reflow Soldering Thermal Profile



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□ **PACKAGE SPECIFICATION**

| Type     | Size | Quantity(ea)    |         |         | Gross Weight | <b>SINLOON®</b> |          |
|----------|------|-----------------|---------|---------|--------------|-----------------|----------|
|          |      | Paper Reel Tape | In Box  | Carton  |              |                 |          |
| SZD55C   | 1206 | 5,000 Pcs       | 7" Reel | 50K pcs | 300K pcs     |                 | 13 Kgs   |
| SZD55B   | 1206 | 5,000 Pcs       | 7" Reel | 50K pcs | 300K pcs     |                 |          |
| SZD55C-S | 0805 | 5,000 Pcs       | 7" Reel | 50K pcs | 300K pcs     |                 | 10.5 kgs |
| SZD55B-S | 0805 | 5,000 Pcs       | 7" Reel | 50K pcs | 300K pcs     |                 |          |

Fig-1: Figure

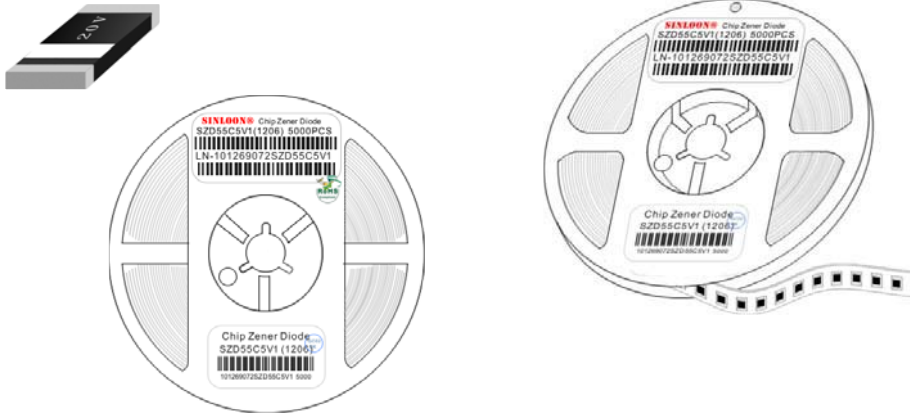


Fig-2: Q'ty: 5K/Reel

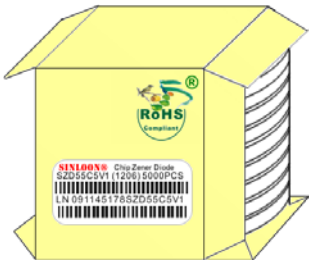


Fig-3 Q'ty: 50K/ Inner Box

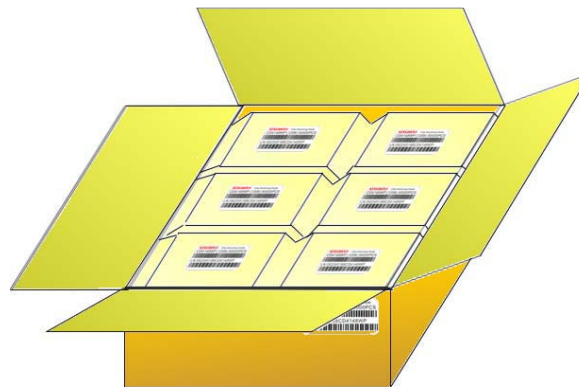


Fig-4 Q'ty: 300K / Carton.

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