

## PZS52C3V9M1Q ~ PZS52C47M1Q Series

### Silicon Zener Diode

**Voltage**

**3.9~47 V**

**Power**

**250 mW**

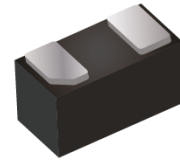
### Features

- Planar Die construction
- Ideally Suited for Automated Assembly Processes
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : DFN1006-2L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0006 grams

DFN1006-2L



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

| PARAMETER  | SYMBOL           | LIMIT   | UNITS |
|--|------------------|---------|-------|
| Peak Pulse Power Dissipation at T <sub>A</sub> = 25 °C <sup>(Note 1)</sup> | P <sub>D</sub>   | 250     | mW    |
| Typical Thermal Resistance Junction to Ambient <sup>(Note 2)</sup>         | R <sub>θJA</sub> | 500     | °C/W  |
| Forward Voltage at I <sub>F</sub> = 10mA                                   | V <sub>F</sub>   | 0.9     | V     |
| Operating Junction Temperature Range                                       | T <sub>J</sub>   | -55~150 | °C    |
| Storage Temperature Range  | T <sub>STG</sub> | -55~150 | °C    |

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### Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

| Part Number  | Nominal Zener Voltage           |        |        |    | Nominal Zener Impedance          |    |                                  |     | Max. Reverse Leakage Current   |      | Marking Code |
|--------------|---------------------------------|--------|--------|----|----------------------------------|----|----------------------------------|-----|--------------------------------|------|--------------|
|              | V <sub>Z</sub> @I <sub>ZT</sub> |        |        |    | Z <sub>zT</sub> @I <sub>ZT</sub> |    | Z <sub>zK</sub> @I <sub>zK</sub> |     | I <sub>R</sub> @V <sub>R</sub> |      |              |
|              | Nom. V                          | Min. V | Max. V | mA | Ω                                | mA | Ω                                | mA  | μA                             | V    |              |
| PZS52C3V9M1Q | 3.9                             | 3.71   | 4.10   | 5  | 90                               | 5  | 500                              | 1.0 | 3.0                            | 1    | UA           |
| PZS52C4V3M1Q | 4.3                             | 4.09   | 4.52   | 5  | 90                               | 5  | 600                              | 1.0 | 3.0                            | 1    | UB           |
| PZS52C4V7M1Q | 4.7                             | 4.47   | 4.94   | 5  | 80                               | 5  | 500                              | 1.0 | 3.0                            | 2    | UC           |
| PZS52C5V1M1Q | 5.1                             | 4.85   | 5.36   | 5  | 60                               | 5  | 480                              | 1.0 | 2.0                            | 2    | UD           |
| PZS52C5V6M1Q | 5.6                             | 5.32   | 5.88   | 5  | 40                               | 5  | 400                              | 1.0 | 1.0                            | 2    | UE           |
| PZS52C6V2M1Q | 6.2                             | 5.89   | 6.51   | 5  | 10                               | 5  | 150                              | 1.0 | 3.0                            | 4    | UF           |
| PZS52C6V8M1Q | 6.8                             | 6.46   | 7.14   | 5  | 15                               | 5  | 80                               | 1.0 | 2.0                            | 4    | UG           |
| PZS52C7V5M1Q | 7.5                             | 7.13   | 7.88   | 5  | 15                               | 5  | 80                               | 1.0 | 1.0                            | 5    | UH           |
| PZS52C8V2M1Q | 8.2                             | 7.79   | 8.61   | 5  | 15                               | 5  | 80                               | 1.0 | 0.7                            | 5    | UJ           |
| PZS52C9V1M1Q | 9.1                             | 8.65   | 9.56   | 5  | 15                               | 5  | 100                              | 1.0 | 0.5                            | 6    | UL           |
| PZS52C10M1Q  | 10                              | 9.50   | 10.50  | 5  | 20                               | 5  | 150                              | 1.0 | 0.2                            | 7    | UM           |
| PZS52C11M1Q  | 11                              | 10.45  | 11.55  | 5  | 20                               | 5  | 150                              | 1.0 | 0.1                            | 8    | UN           |
| PZS52C12M1Q  | 12                              | 11.40  | 12.60  | 5  | 25                               | 5  | 150                              | 1.0 | 0.1                            | 8    | UP           |
| PZS52C13M1Q  | 13                              | 12.35  | 13.65  | 5  | 30                               | 5  | 170                              | 1.0 | 0.1                            | 8    | UQ           |
| PZS52C15M1Q  | 15                              | 14.25  | 15.75  | 5  | 30                               | 5  | 200                              | 1.0 | 0.1                            | 10.5 | US           |
| PZS52C16M1Q  | 16                              | 15.20  | 16.80  | 5  | 40                               | 5  | 200                              | 1.0 | 0.1                            | 11.2 | UT           |
| PZS52C18M1Q  | 18                              | 17.10  | 18.90  | 5  | 45                               | 5  | 225                              | 1.0 | 0.1                            | 12.6 | UV           |
| PZS52C20M1Q  | 20                              | 19.00  | 21.00  | 5  | 55                               | 5  | 225                              | 1.0 | 0.1                            | 14   | UW           |
| PZS52C22M1Q  | 22                              | 20.90  | 23.10  | 5  | 55                               | 5  | 250                              | 1.0 | 0.1                            | 15.4 | UX           |
| PZS52C24M1Q  | 24                              | 22.80  | 25.20  | 5  | 70                               | 5  | 250                              | 1.0 | 0.1                            | 16.8 | UY           |
| PZS52C27M1Q  | 27                              | 25.65  | 28.35  | 2  | 80                               | 2  | 300                              | 0.5 | 0.1                            | 18.9 | UZ           |
| PZS52C30M1Q  | 30                              | 28.50  | 31.50  | 2  | 80                               | 2  | 300                              | 0.5 | 0.1                            | 21   | VB           |
| PZS52C33M1Q  | 33                              | 31.35  | 34.65  | 2  | 80                               | 2  | 325                              | 0.5 | 0.1                            | 23.1 | VC           |
| PZS52C36M1Q  | 36                              | 34.20  | 37.80  | 2  | 90                               | 2  | 350                              | 0.5 | 0.1                            | 25.2 | VD           |
| PZS52C39M1Q  | 39                              | 37.05  | 40.95  | 2  | 90                               | 2  | 350                              | 0.5 | 0.1                            | 27.3 | VE           |
| PZS52C43M1Q  | 43                              | 40.85  | 45.15  | 2  | 100                              | 2  | 375                              | 0.5 | 0.1                            | 30.1 | VF           |
| PZS52C47M1Q  | 47                              | 44.65  | 49.35  | 2  | 170                              | 2  | 375                              | 0.5 | 0.1                            | 32.9 | VG           |

NOTES :

1. Mounted on a 10 x 10cm copper pads to each terminal.
2. Mounted on a FR-4 PCB, single-sided copper, Standard footprint.

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## TYPICAL CHARACTERISTIC CURVES

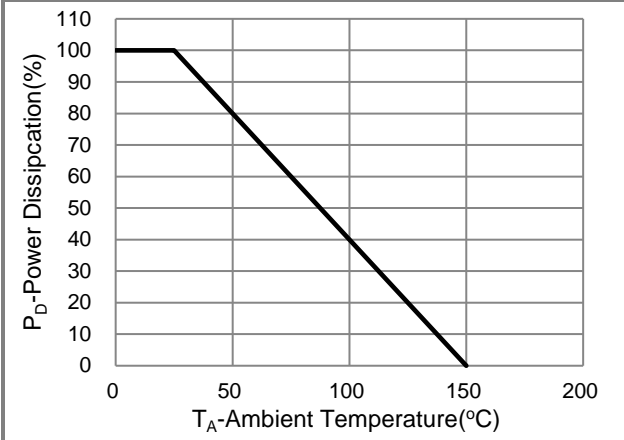


Fig.1 Power Rating Curve

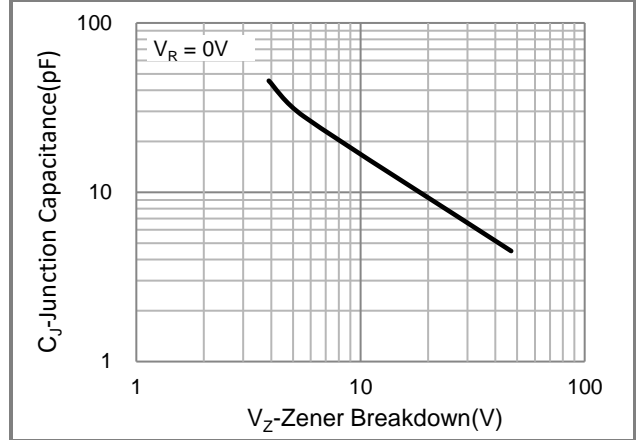


Fig.2 Typical Junction Capacitance

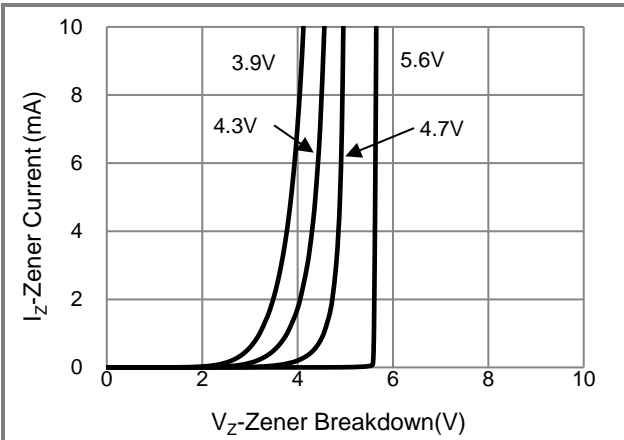


Fig.3 Typical Zener Breakdown

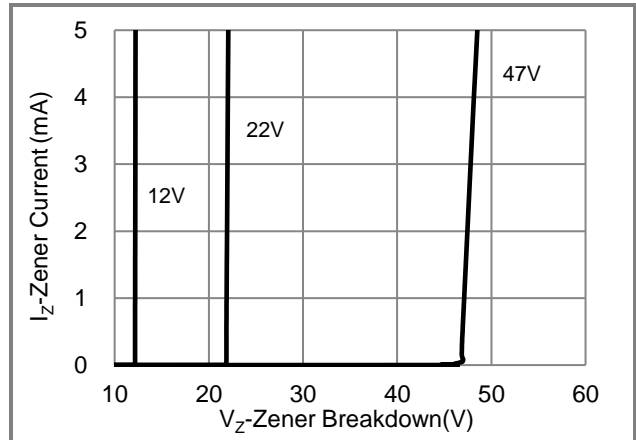


Fig.4 Typical Zener Breakdown

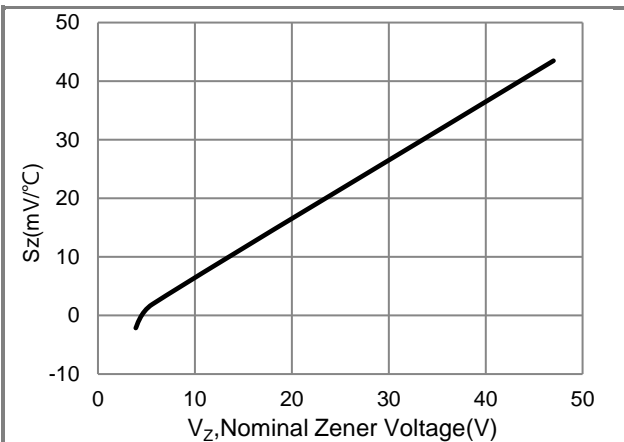


Fig.5 Typical Temperature coefficient

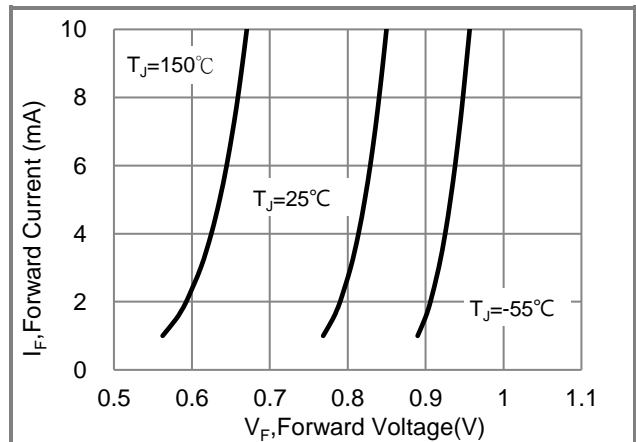


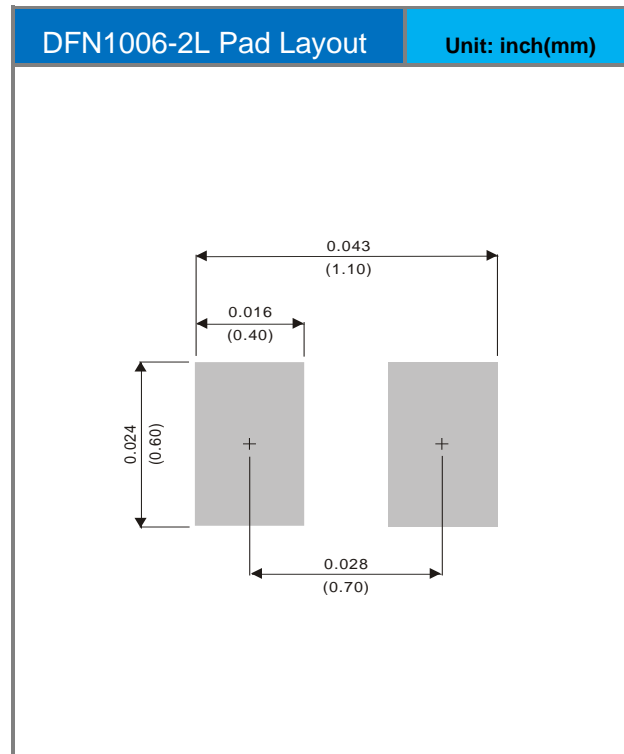
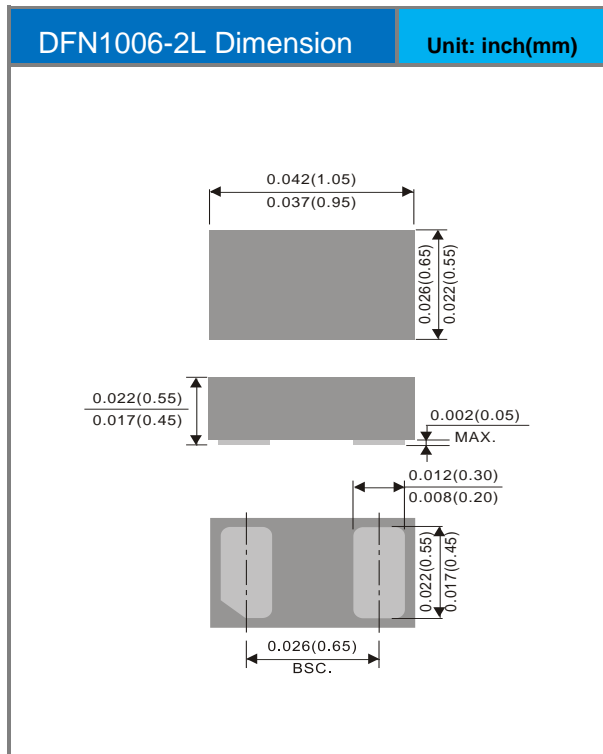
Fig.6 Typical Forward Characteristics

## PZS52C3V9M1Q ~ PZS52C47M1Q Series

### Product and Packing Information

| Part No.     | Package Type | Packing Type      | Marking   |
|--------------|--------------|-------------------|-----------|
| PZS52CxxxM1Q | DFN1006-2L   | 10K pcs / 7" reel | See Table |

### Packaging Information & Mounting Pad Layout



## **PZS52C3V9M1Q ~ PZS52C47M1Q Series**

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