

### ■ Features

- Uni-directional ESD protection.
- Surface mount package.
- Ultra small SMD package:0402.
- High component density.

### ■ Mechanical data

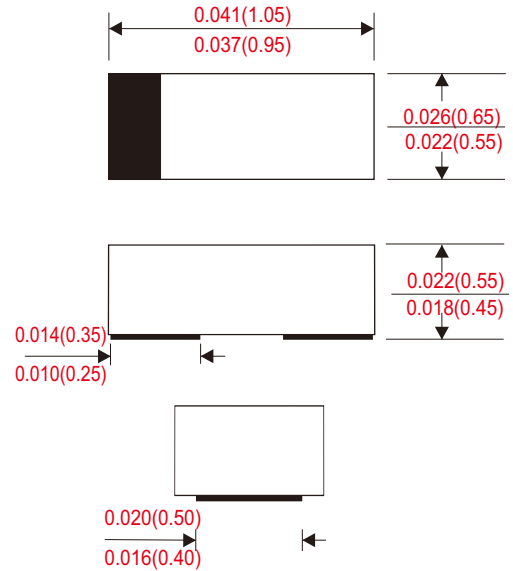
- Case : 0402/SOD-923F standard package,molded plastic.
- Terminals : Gold plated, solderable per MIL-STD-750 Method 2026
- Marking Code : Cathode band & E2
- Mounting position : Any.
- Weight : 0.001 grams(Approx).

### ■ Circuit Diagram



### ■ Outline

SOD-923F



Dimensions in inches and (millimeters)

### ■ Maximum ratings and electrical characteristics

(at TA=25°C unless otherwise noted)

| Parameter                      | Conditions                                    | Symbol           | Min  | Typ  | Max  | Unit |
|--------------------------------|---|------------------|------|------|------|------|
| Marking code                   |   | E5               |      |      |      |      |
| Forward voltage                | I <sub>F</sub> = 10mA                         | V <sub>F</sub>   |      | 0.8  |      | V    |
| Diode breakdown voltage        | I <sub>R</sub> = 1mA                          | V <sub>BD</sub>  | 13.3 | 15.5 | 17.5 | V    |
| Leakage current                | V <sub>R</sub> = 12V                          | I <sub>L</sub>   |      | 0.1  | 1.0  | uA   |
| Junction capacitance           | V <sub>R</sub> = 0V, f = 1MHz                 | C <sub>T</sub>   |      |      | 60   | pF   |
| ESD capability                 | IEC 61000-4-2(air)                            | ESD              |      |      | 30   | kV   |
|                                | IEC 61000-4-2(contact)                        | ESD              |      |      | 30   | kV   |
| Clamping Voltage               | I <sub>PP</sub> = 1 A, t <sub>p</sub> =8/20us | V <sub>c</sub>   |      |      | 19   | V    |
|                                | I <sub>PP</sub> = 5 A, t <sub>p</sub> =8/20us | V <sub>c</sub>   |      |      | 24   | V    |
| Peak pulse power               |   | P <sub>PP</sub>  |      |      | 120  | W    |
| Operating Junction temperature |   | T <sub>j</sub>   | -55  |      | +125 | °C   |
| Storage temperature            |   | T <sub>STG</sub> | -55  |      | +150 | °C   |

■ Rating and characteristic curves

Fig.1 - 8/20us Peak Pulse Current Wave Form Acc. IEC 61000-4-5

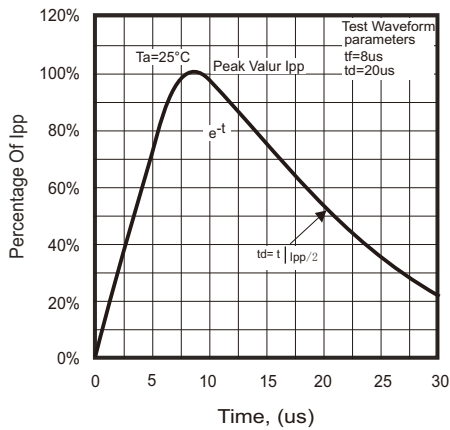


Fig.2 - Power Rating Derating Curve

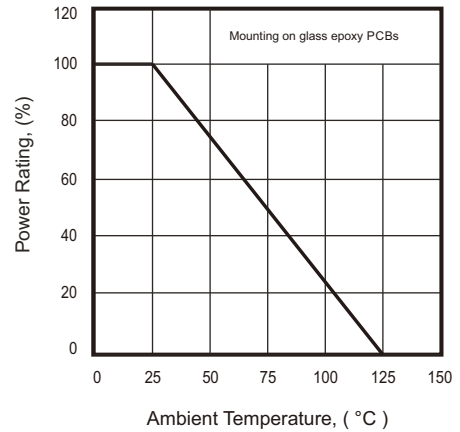


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

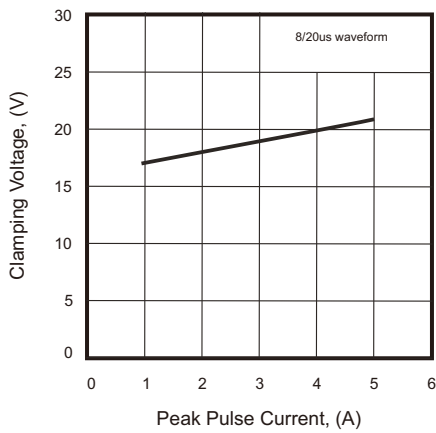


Fig.4 - Clamping Voltage Vs. Forward Peak Pulse Current

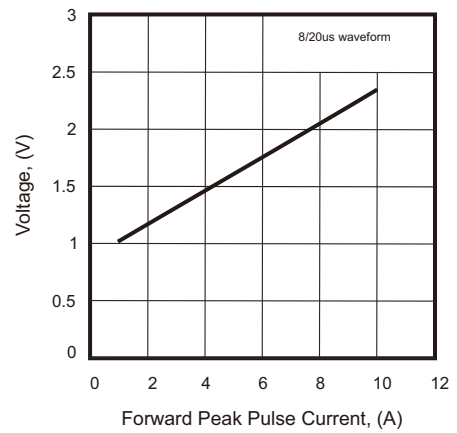
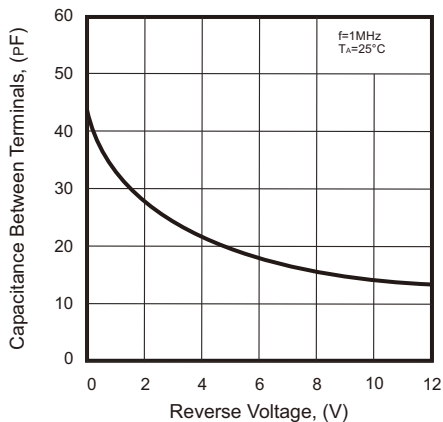
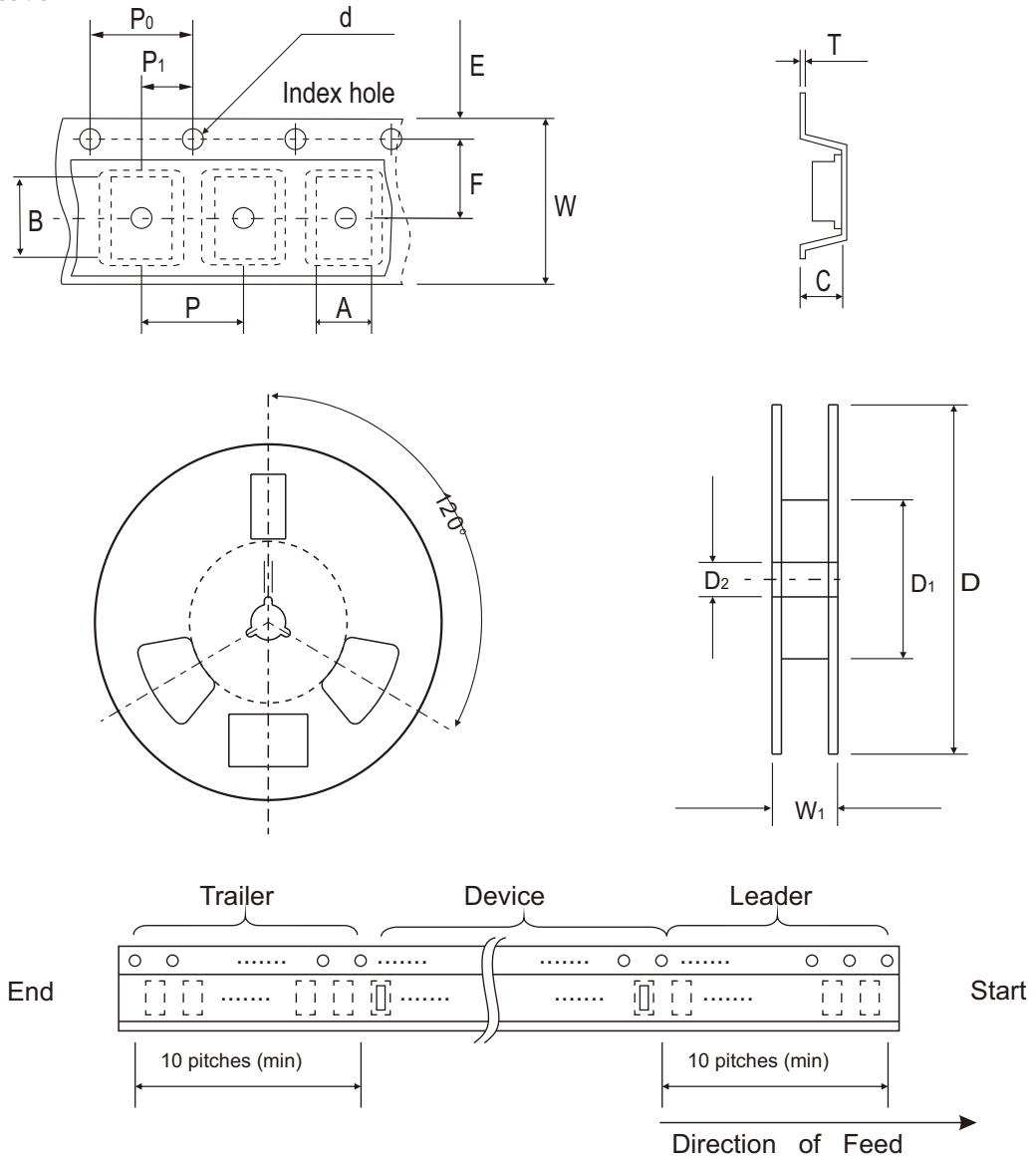


Fig.5 - Capacitance Between Terminals Characteristics



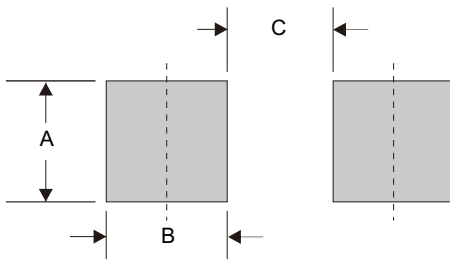
■ Reel Taping Specification



| 0402/<br>SOD-923F | SYMBOL | A             | B             | C             | d             | D            | D <sub>1</sub> | D <sub>2</sub> |
|-------------------|--------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
|                   | (mm)   | 0.75 ± 0.10   | 1.15 ± 0.10   | 0.60 ± 0.10   | 1.55 ± 0.10   | 178 ± 1      | 60.0 MIN.      | 13.0 ± 0.20    |
|                   | (inch) | 0.026 ± 0.004 | 0.045 ± 0.004 | 0.024 ± 0.004 | 0.061 ± 0.004 | 7.008 ± 0.04 | 2.362 MIN.     | 0.512 ± 0.008  |

| 0402/<br>SOD-923F | SYMBOL | E             | F             | P             | P <sub>0</sub> | P <sub>1</sub> | T             | W             | W <sub>1</sub> |
|-------------------|--------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
|                   | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.05   | 4.00 ± 0.10   | 4.00 ± 0.10    | 2.00 ± 0.10    | 0.22 ± 0.05   | 8.00 ± 0.20   | 13.5 MAX.      |
|                   | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004  | 0.079 ± 0.004  | 0.009 ± 0.002 | 0.315 ± 0.008 | 0.531 MAX.     |

■ SOD-923F foot print



| A            | B            | C            |
|--------------|--------------|--------------|
| 0.028 (0.70) | 0.020 (0.50) | 0.010 (0.25) |

Dimensions in inches and (millimeters)

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