

CPDUC5V0USP-HF

RoHS Device

Halogen Free

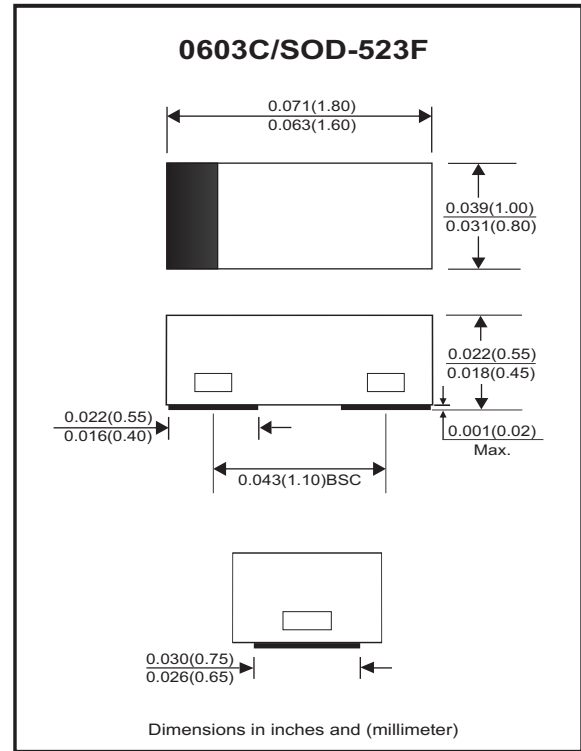


Features

- Uni-directional ESD protection.
- Surface mount package.
- Low capacitance.
- Low Leakage current.
- High component density.

Mechanical data

- Case: 0603C/SOD-523F standard package, molded plastic.
- Terminals: Matte tin plated, Solderable per MIL-STD-750, method 2026.
- Marking Code: Cathode band & E5P
- Mounting position: Any.
- Weight: 0.003 grams(approx.).



Circuit diagram



Maximum Rating (at TA=25°C unless otherwise noted)

| Parameter | Conditions | Symbol | Value | Unit |
|-----------------------------|--|-----------|---------------------|------|
| Peak pulse power | $T_P = 8/20\mu s$ | P_{PP} | 60 | W |
| Peak pulse current | $T_P = 8/20\mu s$ | I_{PP} | 3 | A |
| ESD capability | IEC 61000-4-2(air) IEC 61000-4-2(contact) | ESD | ± 15 ± 8 | kV |
| Operation temperature range | | T_j | -55~+150 | °C |
| Storage temperature range | | T_{STG} | -55~+150 | °C |

Electrical Characteristics (at TA=25°C unless otherwise noted)

| Parameter | Conditions | Symbol | Min | Typ | Max | Unit |
|------------------------------|--|-----------|-----|-----|----------|---------|
| Working peak reverse voltage | | V_{RWM} | | | 5 | V |
| Forward voltage | $I_F = 10mA$ | V_F | | | 1.5 | V |
| Diode breakdown voltage | $I_T = 1mA$ | V_{BR} | 5.4 | | | V |
| Reverse current | $V_{RWM} = 5V$ | I_R | | 0.1 | 1.0 | μA |
| Clamping voltage | $I_{PP} = 1A, T_P = 8/20\mu s$ $I_{PP} = 3A, T_P = 8/20\mu s$ | V_C | | | 13 20 | V |
| Junction capacitance | $V_R = 0V, f = 1MHz$ | C_J | | 0.6 | 0.9 | pF |

RATING AND CHARACTERISTIC CURVES (CPDUC5V0USP-HF)

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

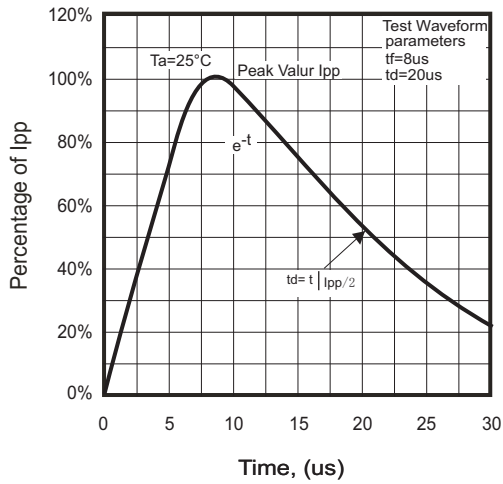


Fig.2 - Power Rating Derating Curve

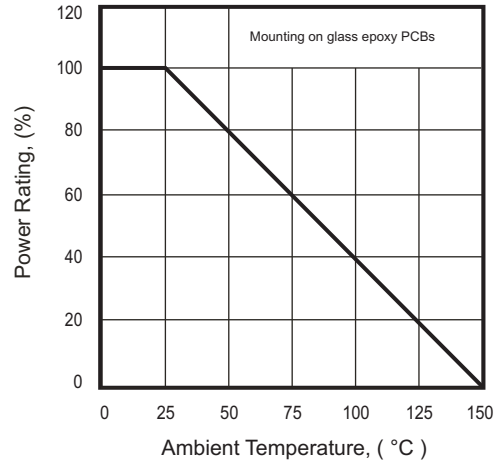


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

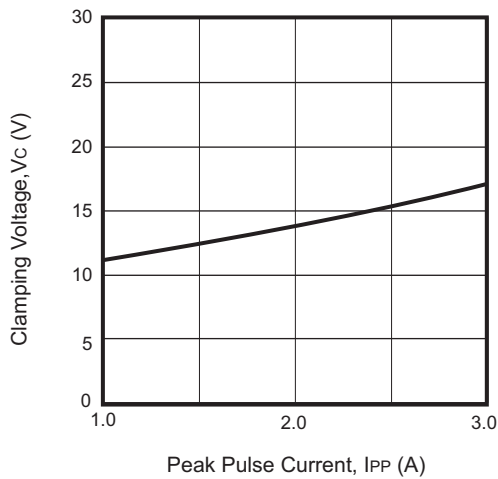


Fig.4 - Forward Voltage Vs. Forward Current

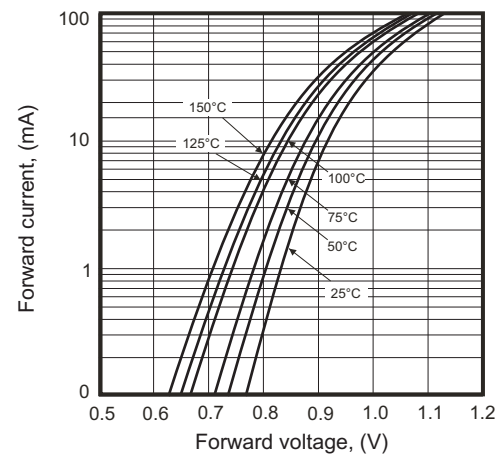
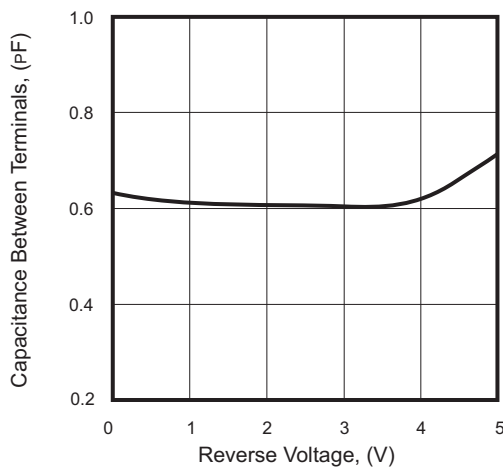
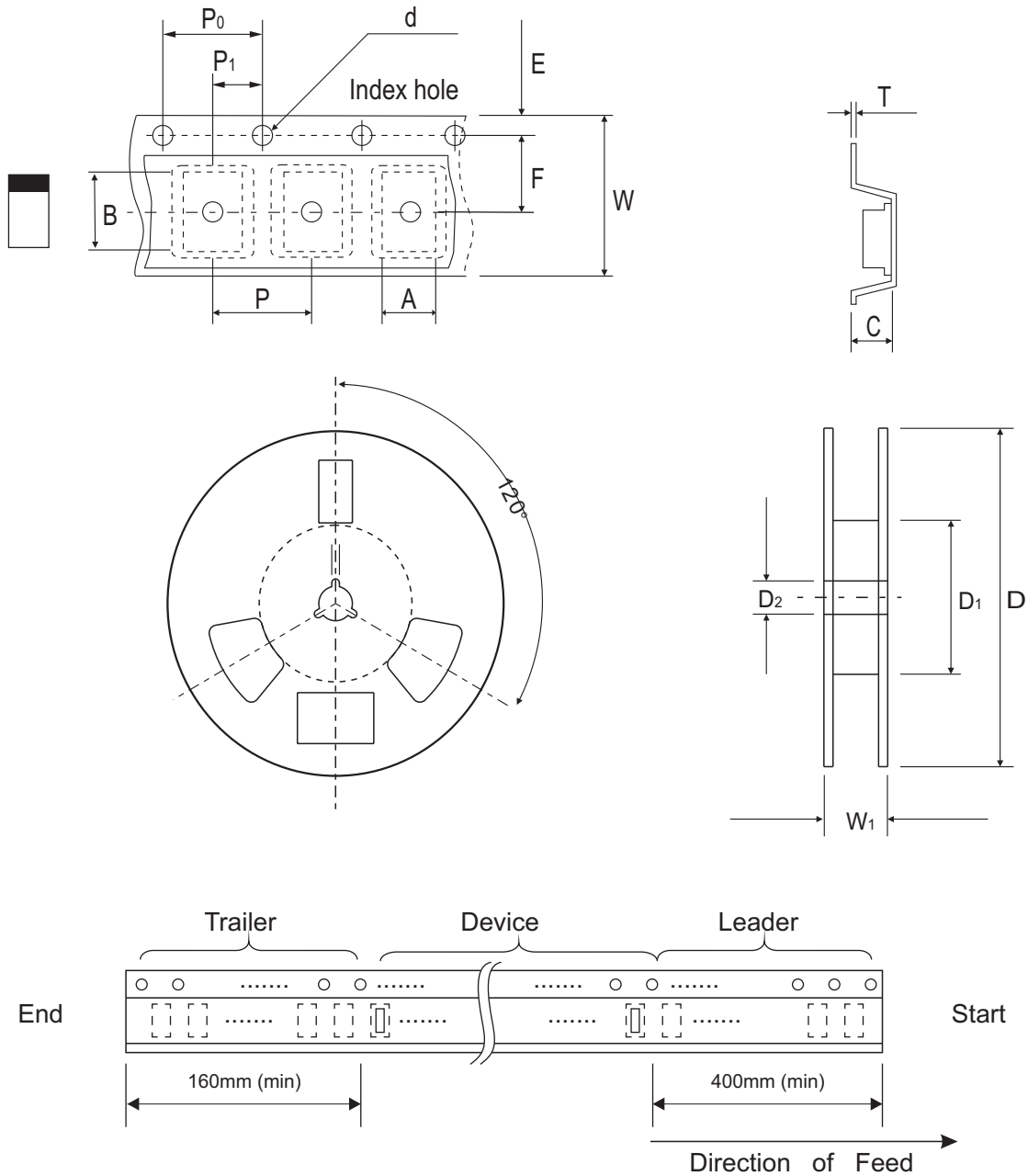


Fig.5 - Capacitance Between Terminals Characteristics



Reel Taping Specification



| 0603C/ SOD-523F | SYMBOL | A | B | C | d | D | D ₁ | D ₂ |
|--------------------|--------|---------------|---------------|---------------|----------------------|---------------|----------------|----------------|
| | (mm) | 1.05 ± 0.05 | 1.96 ± 0.05 | 0.57 ± 0.05 | 1.50 + 0.10 - 0 | 178.00 ± 1.00 | 60.00 ± 0.50 | 13.50 ± 0.20 |
| | (inch) | 0.041 ± 0.002 | 0.077 ± 0.002 | 0.022 ± 0.002 | 0.059 + 0.004 - 0 | 7.008 ± 0.039 | 2.362 ± 0.020 | 0.531 ± 0.008 |

| 0603C/ SOD-523F | SYMBOL | E | F | P | P ₀ | P ₁ | T | W | W ₁ |
|--------------------|--------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------------|
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.05 | 4.00 ± 0.10 | 4.00 ± 0.05 | 2.00 ± 0.05 | 0.20 ± 0.03 | 8.00 ± 0.20 | 12.00 + 0.50 - 0 |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.002 | 0.079 ± 0.002 | 0.008 ± 0.001 | 0.315 ± 0.008 | 0.472 + 0.020 - 0 |

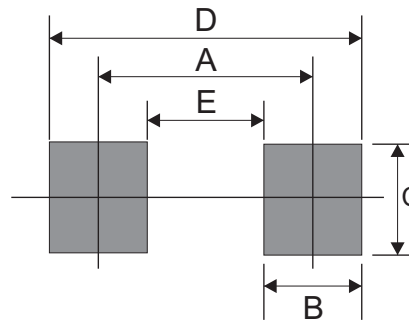
Marking Code

| Part Number | Marking Code |
|----------------|--------------|
| CPDUC5V0USP-HF | E5P |



Suggested PAD Layout

| SIZE | 0603C/SOD-523F | |
|------|----------------|--------|
| | (mm) | (inch) |
| A | 1.10 | 0.043 |
| B | 0.70 | 0.028 |
| C | 1.00 | 0.039 |
| D | 1.80 | 0.071 |
| E | 0.40 | 0.016 |



Standard Packaging

| Case Type | REEL PACK | |
|----------------|-----------------|---------------------|
| | REEL (pcs) | Reel Size (inch) |
| 0603C/SOD-523F | 4,000 | 7 |

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