

ACPDUC5V0USP-HF

High-Reliability and High-Performance

RoHS Device

Halogen Free



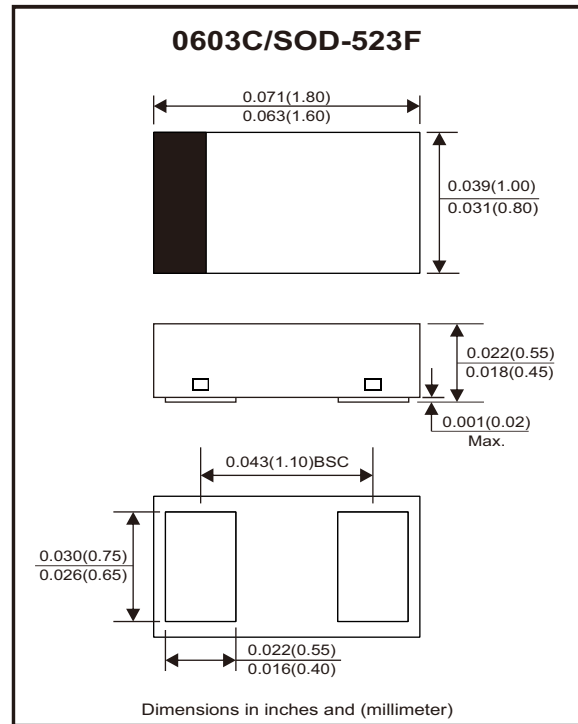
Features

- Uni-directional ESD protection.
- Surface mount package.
- Low capacitance.
- Low Leakage current.
- High component density.
- AEC-Q101 Qualified.

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 = 8/20μs | P _{PP} | 60 | W |
| Peak pulse current | T _P = 8/20μs | I _{PP} | 3 | A |
| ESD capability | IEC 61000-4-2(air) IEC 61000-4-2(contact) | ESD | ±15 ±8 | kV |
| Operating 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 = 8/20μs I _{PP} = 3A, T _P = 8/20μs | V _C | | | 13 20 | V |
| Junction capacitance | V _R = 0V, f = 1MHz | C _J | | 0.6 | 0.9 | pF |

Rating and Characteristic Curves (ACPDUC5V0USP-HF)

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

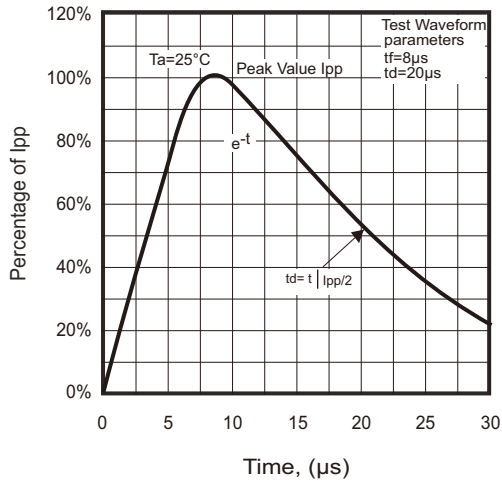


Fig.2 - Power Rating Derating Curve

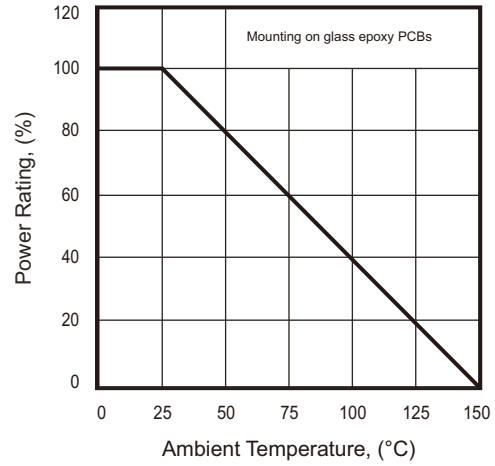


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

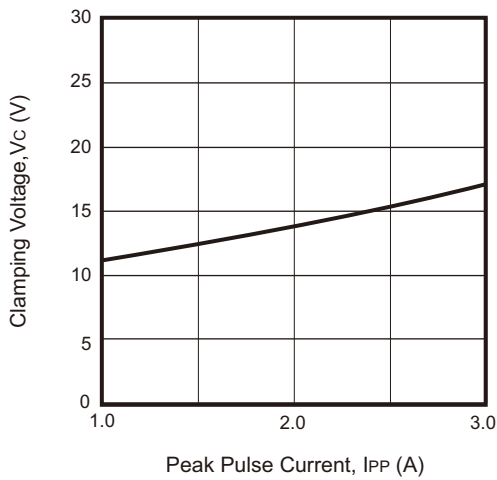


Fig.4 - Forward Voltage Vs. Forward Current

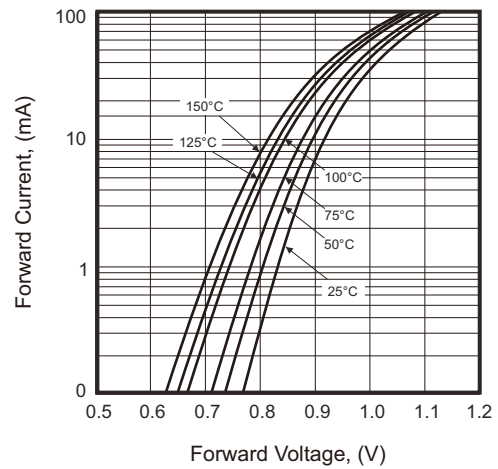
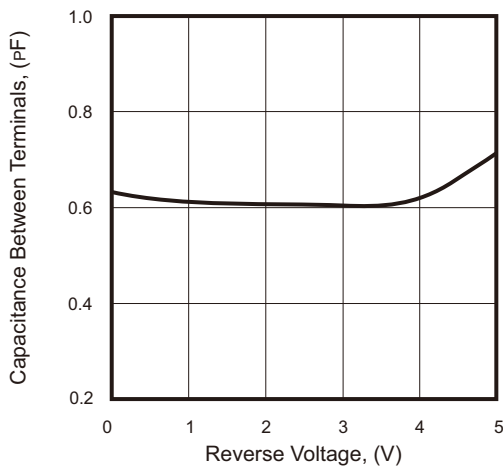
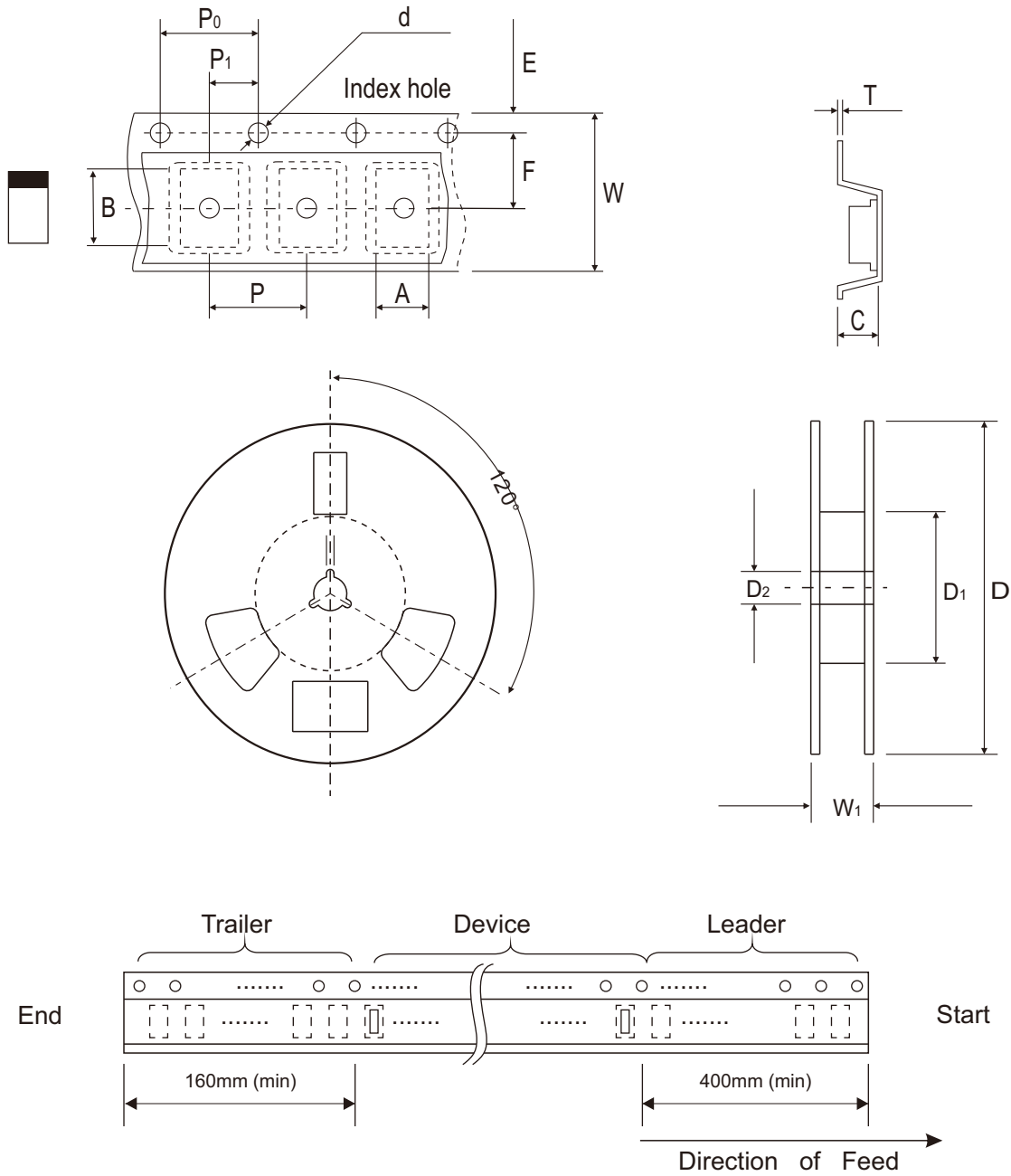


Fig.5 - Capacitance Between Terminals Characteristics



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 |

Company reserves the right to improve product design , functions and reliability without notice.

REV:B

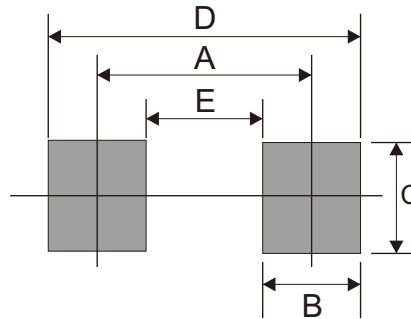
Marking Code

| Part Number | Marking Code |
|-----------------|--------------|
| ACPDUC5V0USP-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 |