

# ACPDUC5V0-HF

## High-Reliability and High-Performance

### RoHS Device

### Halogen Free



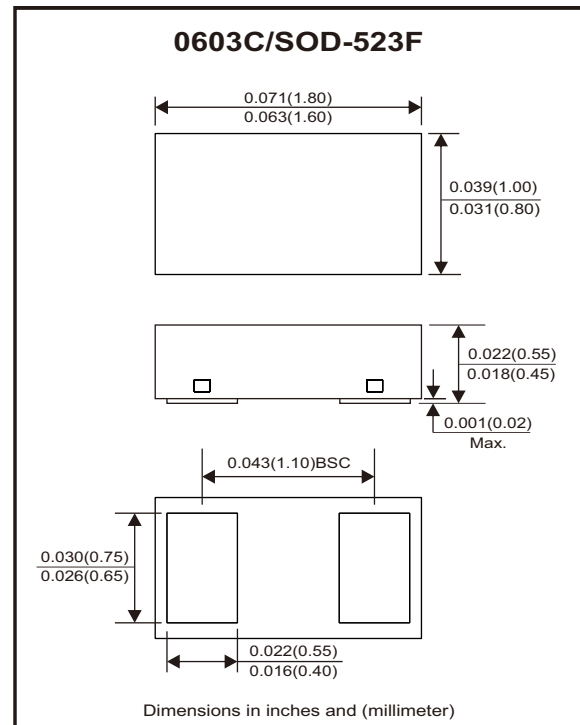
### Features

- Bi-directional ESD protection.
- IEC61000-4-2 Level 4 ESD protection.
- Ultra small SMD package.
- Surface mount package.
- High component density.
- AEC-Q101 Qualified & PPAP.

### Mechanical data

- Case: 0603C/SOD-523F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Mounting position: Any.

### Circuit Diagram



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

| Parameter                   | Conditions                                   | Symbol    | Value               | Unit |
|-----------------------------|----------------------------------------------|-----------|---------------------|------|
| Peak pulse power            | $T_P = 8/20\mu s$                            | $P_{PP}$  | 75                  | W    |
| Peak pulse current          | $T_P = 8/20\mu s$                            | $I_{PP}$  | 5                   | A    |
| ESD capability              | IEC 61000-4-2(Air)<br>IEC 61000-4-2(Contact) | ESD       | $\pm 16$<br>$\pm 8$ | kV   |
| Operating temperature range |                                              | $T_j$     | -55 ~ +125          | °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       |
| Breakdown voltage            | $I_T = 1mA$                    | $V_{BR}$  | 5.1 | 7.0 |     | V       |
| Reverse leakage current      | $V_{RWM} = 5V$                 | $I_R$     |     | 0.1 | 2.0 | $\mu A$ |
| Clamping voltage             | $I_{PP} = 5A, T_P = 8/20\mu s$ | $V_C$     |     |     | 15  | V       |
| Junction capacitance         | $V_R = 0V, f = 1MHz$           | $C_J$     |     | 15  | 20  | pF      |

Typical Rating and Characteristic Curves (ACPDUC5V0-HF)

Fig.1 - 8/20μs Peak Pulse Current  
Waveform acc. IEC 61000-4-5

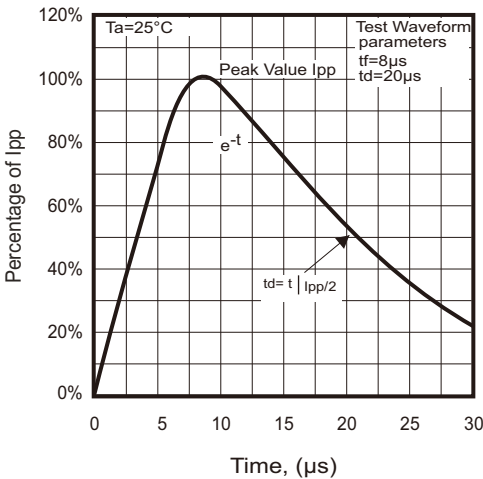


Fig.2 - Reverse Characteristics

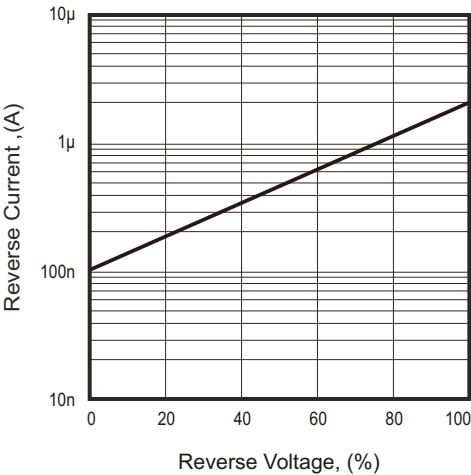


Fig.3 - Capacitance Between  
Terminals Characteristics

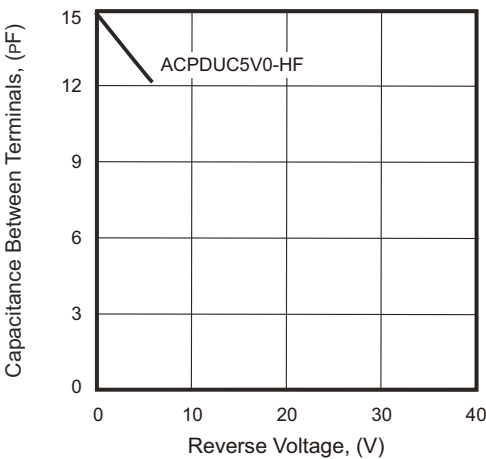
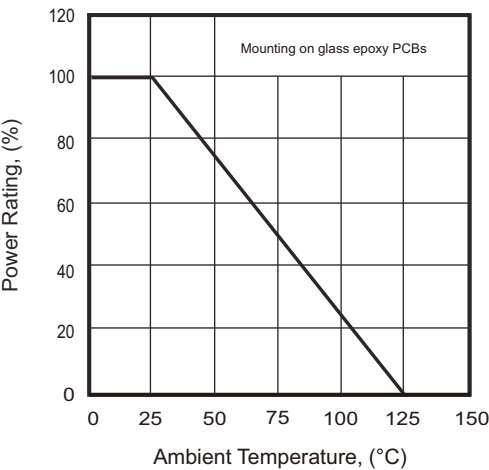
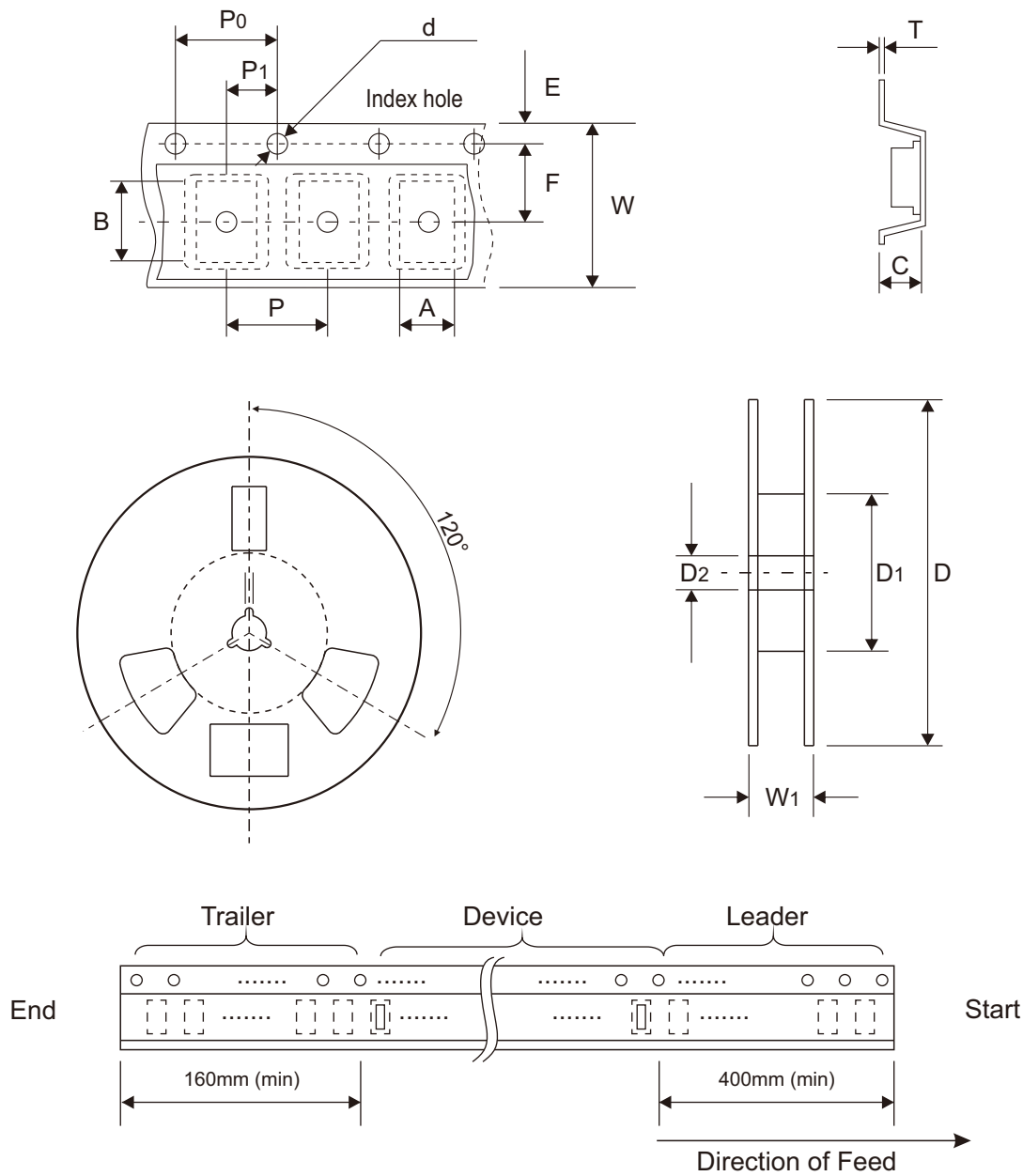


Fig.4 - Power Rating Derating Curve



Reel Taping Specification



|                     |        |                   |                   |                   |                         |                   |                   |                   |
|---------------------|--------|-------------------|-------------------|-------------------|-------------------------|-------------------|-------------------|-------------------|
| 0603C<br>(SOD-523F) | SYMBOL | A                 | B                 | C                 | d                       | D                 | D1                | D2                |
|                     | (mm)   | $1.05 \pm 0.05$   | $1.96 \pm 0.05$   | $0.57 \pm 0.05$   | $1.50 + 0.10 - 0.00$    | $178.00 \pm 1.00$ | $60.00 \pm 0.50$  | $13.50 \pm 0.20$  |
|                     | (inch) | $0.041 \pm 0.002$ | $0.077 \pm 0.002$ | $0.022 \pm 0.002$ | $0.059 + 0.004 - 0.000$ | $7.008 \pm 0.039$ | $2.362 \pm 0.020$ | $0.531 \pm 0.008$ |

|                     |        |                   |                   |                   |                   |                   |                   |                   |                         |
|---------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------------|
| 0603C<br>(SOD-523F) | SYMBOL | E                 | F                 | P                 | P0                | P1                | T                 | W                 | W1                      |
|                     | (mm)   | $1.75 \pm 0.10$   | $3.50 \pm 0.05$   | $4.00 \pm 0.10$   | $4.00 \pm 0.05$   | $2.00 \pm 0.05$   | $0.20 \pm 0.03$   | $8.00 \pm 0.20$   | $12.00 + 0.50 - 0.00$   |
|                     | (inch) | $0.069 \pm 0.004$ | $0.138 \pm 0.002$ | $0.157 \pm 0.004$ | $0.157 \pm 0.002$ | $0.079 \pm 0.002$ | $0.008 \pm 0.001$ | $0.315 \pm 0.008$ | $0.472 + 0.020 - 0.000$ |

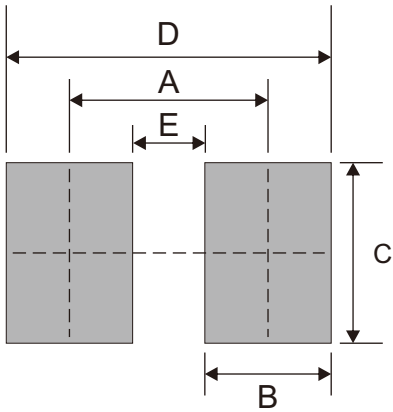
Marking Code

| Part Number  | Marking Code |
|--------------|--------------|
| ACPDUC5V0-HF | E05          |

E05

Suggested P.C.B. 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<br>( pcs ) | Reel Size<br>(inch) |
| 0603C/SOD-523F | 4,000           | 7                   |