

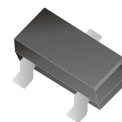
# Dual ESD Protection Diode

## ACPDT-5V0UA-HF Thru. ACPDT-12UA-HF

Voltage: 5.0 to 12 Volts

RoHS Device

Halogen free



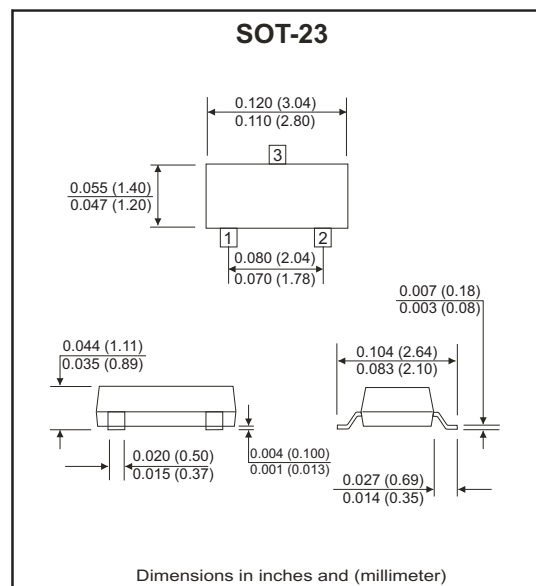
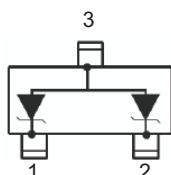
### Features

- 2 Unidirectional Transil functions.
- Low Leakage current.
- 300W peak pulse power(8/20 $\mu$ s).
- Transient protection for data lines as per.
- IEC61000-4-2 ESD protection.
- Comply with AEC-Q101.

### Mechanical data

- Case: SOT-23 , plastic package.
- Mounting position: Any.

### Circuit Diagram



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

| Parameter                                                                                   | Symbol           | Value       | Unit |
|---------------------------------------------------------------------------------------------|------------------|-------------|------|
| Peak pulse power ( tp = 8/20 $\mu$ s )                                                      | P <sub>PP</sub>  | 300         | W    |
| Lead temperature for soldering during 10s                                                   | T <sub>L</sub>   | 260         | °C   |
| Storage temperature range                                                                   | T <sub>STG</sub> | -55 to +150 | °C   |
| Operating temperature range                                                                 | T <sub>OP</sub>  | -40 to +125 | °C   |
| Junction temperature                                                                        | T <sub>J</sub>   | 150         | °C   |
| Electrostatic discharge<br>IEC 61000-4-2(Air discharge)<br>IEC 61000-4-2(Contact discharge) | V <sub>PP</sub>  | 15<br>8     | kV   |

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## Electrical Characteristics (at $T_A=25^\circ\text{C}$ unless otherwise specified)

| Part No.       | Rated Stand-off Voltage | Max. Leakage Current<br>@ $V_{RM}$ | Max. Breakdown Voltage<br>@ 1mA | Max. Clamping Voltage (Note 1) |                      | Max. Pulse Peak Current<br>@ $t_p=8/20\mu\text{s}$ | Max. Capacitance<br>@ 0V, 1MHz |
|----------------|-------------------------|------------------------------------|---------------------------------|--------------------------------|----------------------|----------------------------------------------------|--------------------------------|
|                | $V_{RM}$<br>(V)         | $I_{RM}$<br>( $\mu\text{A}$ )      | $V_{BR}$<br>(V)                 | @ 1A<br>$V_C$<br>(V)           | @ 5A<br>$V_C$<br>(V) | $I_{PPM}$<br>(A)                                   | C<br>(pF)                      |
| ACPDT-5V0UA-HF | 5.0                     | 5.0                                | 6.0                             | 9.8                            | 12.5                 | 17                                                 | 220                            |
| ACPDT-12VUA-HF | 12.0                    | 1.0                                | 13.3                            | 19.0                           | 28.0                 | 12                                                 | 90                             |

NOTES : 1. 8/20 waveform used. (see fig1.)

## RATING AND CHARACTERISTIC CURVES ( ACPDT-5V0UA-HF Thru. ACPDT-12UA-HF )

Fig.1 - Pulse Waveform

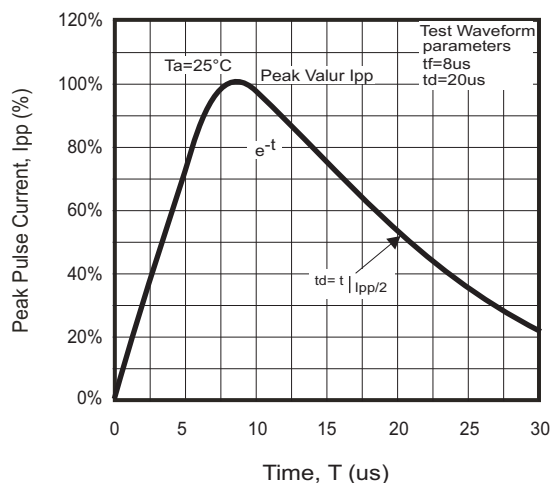


Fig.2 - Power Derating

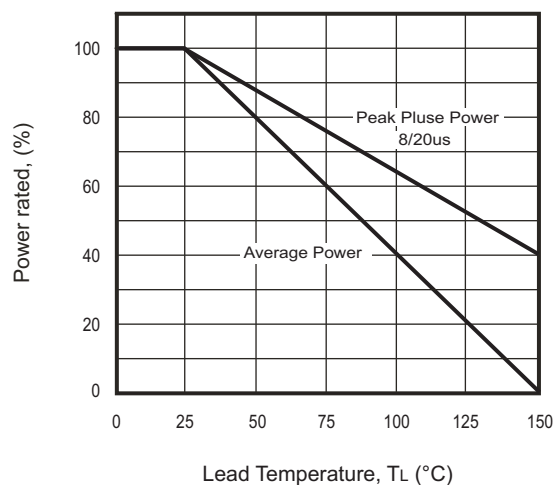
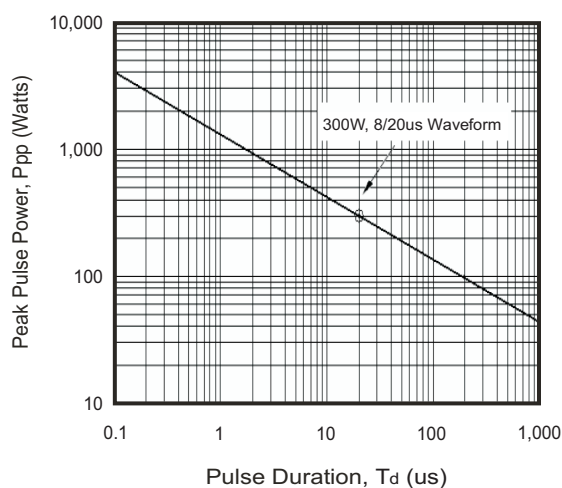


Fig.3 - Peak Pulse Power vs. Pulse Time

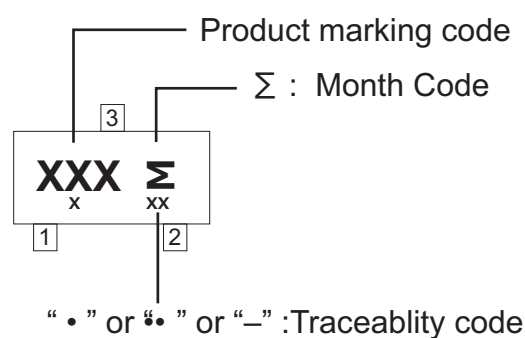


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## Marking Code

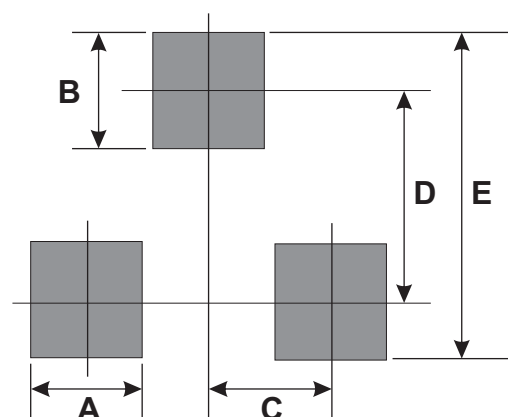
| Part Number    | Marking Code |
|----------------|--------------|
| ACPDT-5V0UA-HF | 05C $\Sigma$ |
| ACPDT-12VUA-HF | 12C $\Sigma$ |



| Month | Odd Year<br>(per A.D.) | Even Year<br>(per A.D.) |
|-------|------------------------|-------------------------|
| Jan   | 1                      | E                       |
| Feb   | 2                      | F                       |
| Wer   | 3                      | H                       |
| Apr   | 4                      | J                       |
| May   | 5                      | K                       |
| Jun   | 6                      | L                       |
| Jul   | 7                      | N                       |
| Aug   | 8                      | P                       |
| Sep   | 9                      | U                       |
| Oct   | T                      | X                       |
| Nov   | V                      | Y                       |
| Dec   | C                      | Z                       |

## Suggested PAD Layout

| SIZE | SOT-23 |        |
|------|--------|--------|
|      | (mm)   | (inch) |
| A    | 0.80   | 0.031  |
| B    | 0.90   | 0.035  |
| C    | 0.95   | 0.037  |
| D    | 2.00   | 0.079  |
| E    | 2.90   | 0.114  |



## Standard Packaging

| Case Type | REEL PACK       |                     |
|-----------|-----------------|---------------------|
|           | REEL<br>( pcs ) | Reel Size<br>(inch) |
| SOT-23    | 3,000           | 7                   |

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