# CPDWZ1V0SBPA-HF

## RoHS Device
## Halogen Free

### Features

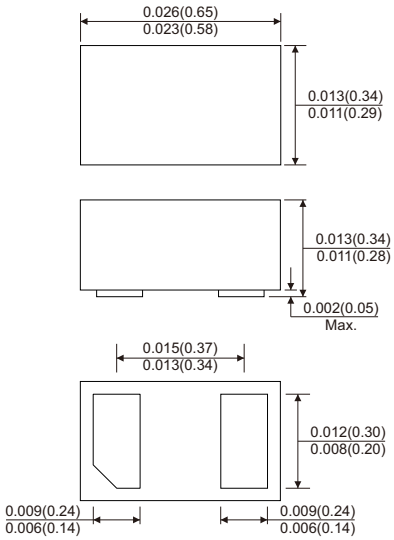
- Bi-directional configurations.
- Solid-state silicon-avalanche technology.
- Low clamping voltage.
- Low leakage current.
- IEC 61000-4-2 (ESD) ±18kV (air), ±16kV (contact)
  IEC 61000-4-4 (EFT) 40A (5/50ns)
  IEC 61000-4-5 (Lightning) 7A (8/20μs)

### Mechanical data

- Case: CSP0603-2L package, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Mounting position: Any.

### Circuit Diagram

**CSP0603-2L**




Dimensions in inches and (millimeter)

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

| Parameter | Conditions | Symbol | Value | Unit |
|---|---|---|---|---|
| Peak pulse power | $T_P$ = 8/20μs | $P_{PP}$ | 30 | W |
| Peak pulse current | $T_P$ = 8/20μs | $I_{PP}$ | 7 | A |
| ESD capability | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact) | ESD | ±18<br>±16 | kV |
| Lead soldering temperature (10s) | | $T_L$ | 260 | °C |
| Operating junction temperature range | | $T_J$ | -55 to +125 | °C |
| Storage temperature range | | $T_{STG}$ | -55 to +150 | °C |

### Electrical Characteristics (at $T_A$=25°C unless otherwise noted)

| Parameter | Conditions | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse working voltage | | $V_{RWM}$ | | | 1 | V |
| Breakdown voltage | $I_T$ = 100μA | $V_{BR}$ | 2 | 2.9 | | V |
| Reverse leakage current | $V_{RWM}$ = 1V | $I_R$ | | | 100 | nA |
| Clamping voltage | $I_{PP}$ = 1A, $T_P$ = 8/20μs | $V_C$ | | 1.8 | | V |
| | $I_{PP}$ = 7A, $T_P$ = 8/20μs | $V_C$ | | 3.9 | 4.3 | V |
| Dynamic resistance | IEC 61000-4-2 0~+8kV, contact mode, T=25°C | $R_{DYN}$ | | 0.145 | | Ω |
| Junction capacitance | $V_R$ = 0V, f = 1MHz | $C_J$ | | 0.35 | | pF |

Note: The strong snap-back to a low holding voltage move into latch-up mode by an ESD event.
When designing the printed-circuit board (PCB), give careful consideration to impedance matching and signal coupling.
Do not connect the data lines to unlimited DC current sources like, for example, a battery, to avoid the device is “locked” in conducting mode.

## Typical Rating and Characteristic Curves (CPDWZ1V0SBPA-HF)

Fig.1 - TLP

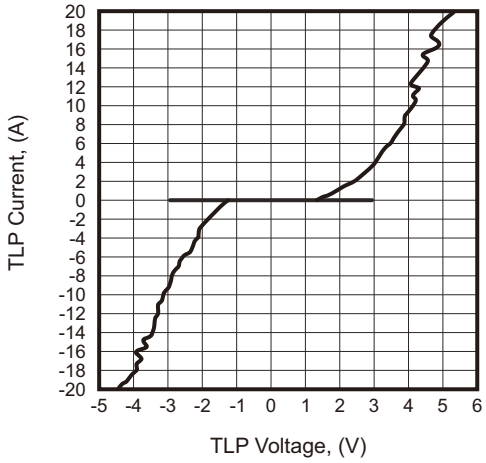



Fig.2 - Typical Variation of $C_{IN}$ VS. $V_{IN}$

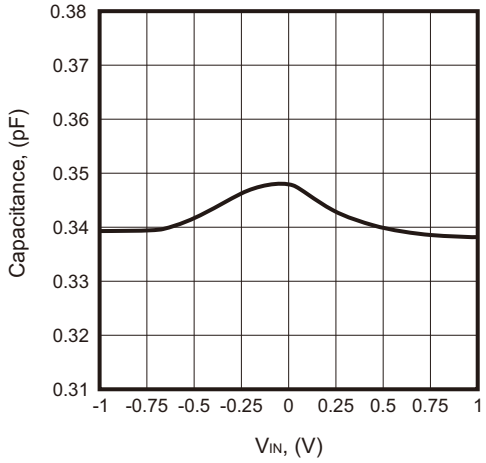



Fig.3 - IEC 61000-4-5 Surge 8/20μs

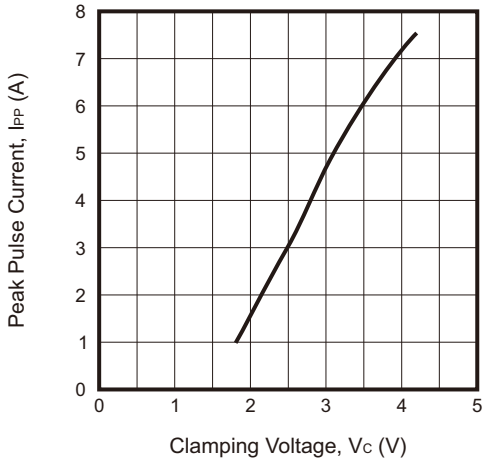
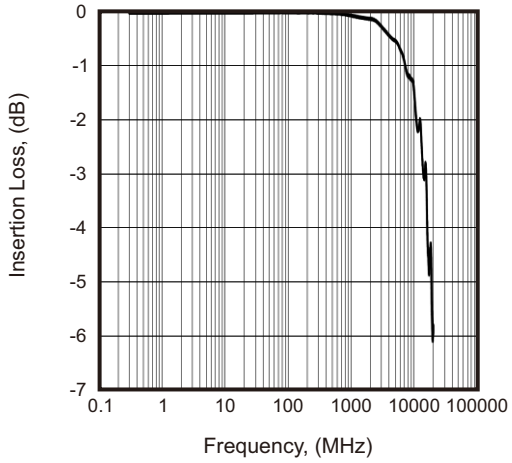
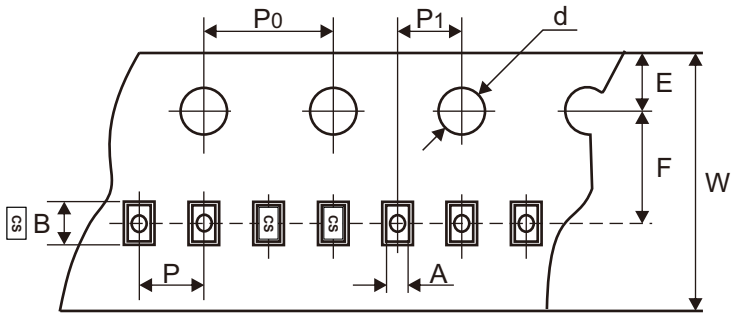
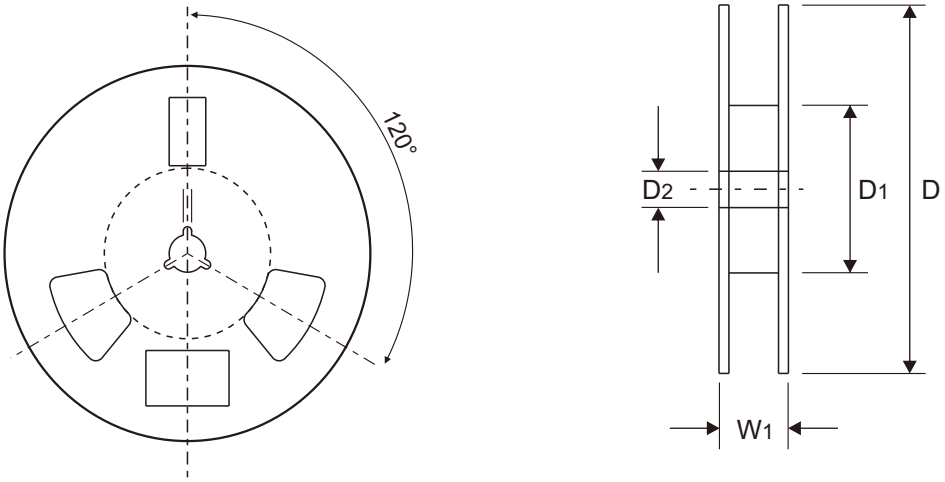


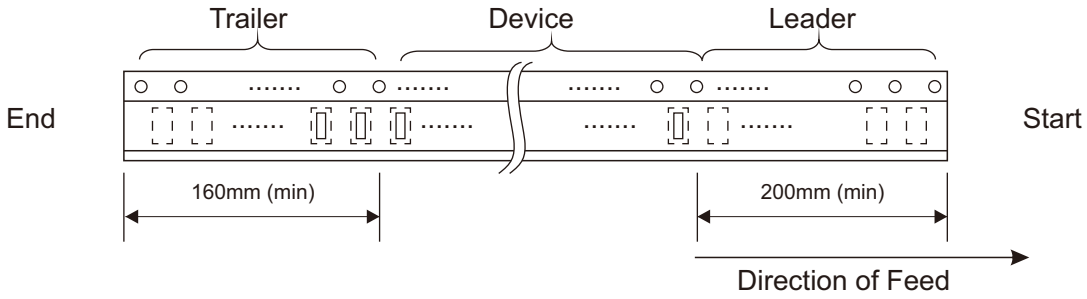

Fig.4 - Insertion Loss S21



## Reel Taping Specification




| | SYMBOL | A | B | C | d | D | D1 | D2 |
|---|---|---|---|---|---|---|---|---|
| CSP0603 -2L | (mm) | 0.39 ± 0.03 | 0.70 ± 0.03 | 0.36 ± 0.02 | 1.55 ± 0.05 | 178.00 ± 2.00 | 55.00 ± 5.00 | 13.00 + 0.50 − 0.20 |
| | (inch) | 0.015 ± 0.001 | 0.028 ± 0.001 | 0.014 ± 0.001 | 0.061 ± 0.002 | 7.008 ± 0.079 | 2.165 ± 0.197 | 0.512 + 0.020 − 0.008 |

| | SYMBOL | E | F | P | P0 | P1 | T | W | W1 |
|---|---|---|---|---|---|---|---|---|---|
| CSP0603 -2L | (mm) | 1.75 ± 0.10 | 3.50 ± 0.04 | 2.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.05 | 0.18 ± 0.03 | 8.00 ± 0.10 | 14.40 Max |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.079 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.007 ± 0.001 | 0.315 ± 0.004 | 0.567 Max |

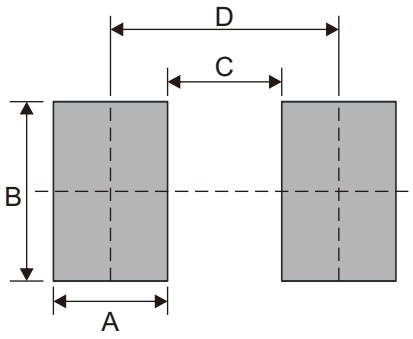
## Marking Code

| Part Number | Marking Code |
|---|---|
| CPDWZ1V0SBPA-HF | CS |

**CS**

## Suggested P.C.B. PAD Layout

| SIZE | CSP0603-2L | |
|---|---|---|
| | (mm) | (inch) |
| A | 0.19 | 0.007 |
| B | 0.27 | 0.011 |
| C | 0.19 | 0.007 |
| D | 0.38 | 0.015 |




## Standard Packaging

| Case Type | REEL PACK | |
|---|---|---|
| | REEL ( pcs ) | Reel Size (inch) |
| CSP0603-2L | 10,000 | 7 |