



UESD5V0U1B02

TVS

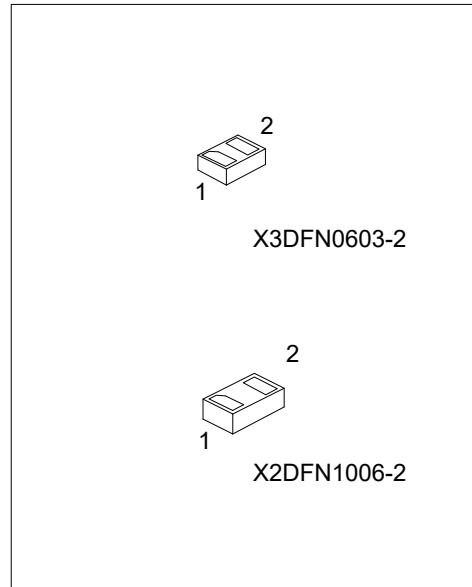
ULTRA LOW CAPACITANCE TVS DIODE

DESCRIPTION

The UTC **UESD5V0U1B02** is ElectroStatic Discharge (ESD) protection diode in leadless ultra small Surface-Mounted Device (SMD) plastic package designed to protect one signal line from the damage caused by ESD and other transients.

FEATURES

- * Bi-directional configurations
- * 27Watts peak pulse power ($t_p = 8/20\mu s$)
- * Solid-state silicon-avalanche technology
- * Capacitance: 0.3pF typical
- * Low clamping voltage
- * Low leakage current
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 17KV$
 - Contact discharge: $\pm 15KV$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 7A (8/20 μs)



SYMBOL



ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | Packing |
|---------------------|---------------------|-------------|----------------|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | |
| UESD5V0U1B02L-KAQ-R | UESD5V0U1B02G-KAQ-R | X3DFN0603-2 | K | K | Tape Reel |
| UESD5V0U1B02L-KAZ-R | UESD5V0U1B02G-KAZ-R | X2DFN1006-2 | K | K | Tape Reel |

Note: Pin Assignment: K: Cathode

| | |
|---|--|
| <p>UESD5V0U1B01G-KAQ-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p> | <p>(1) R: Tape Reel (2) KAZ: X2DFN1006-2, KAZ: X2DFN1006-2 (3) G: Halogen Free and Lead Free, L: Lead Free</p> |
|---|--|

MARKING

| X3DFN0603-2 | X2DFN1006-2 |
|-------------|-------------|
| | |

■ ABSOLUTE MAXIMUM RATINGS (T_A = 25°C, unless otherwise specified)

| PARAMETER | | SYMBOL | RATINGS | UNIT | |
|--------------------------------|--------------|------------------------|-----------------|------|---|
| ESD Discharge | IEC61000-4-2 | Air Discharge | ±17 | kV | |
| | | Contact Discharge | ±15 | kV | |
| Peak Pulse Current | IEC61000-4-5 | t _p =8/20μs | I _{PP} | 7 | A |
| Peak Pulse Power | | | P _{PK} | 27 | W |
| Operating Junction Temperature | | T _J | -55 ~ +125 | °C | |
| Storage Temperature | | T _{STG} | -55 ~ +150 | °C | |

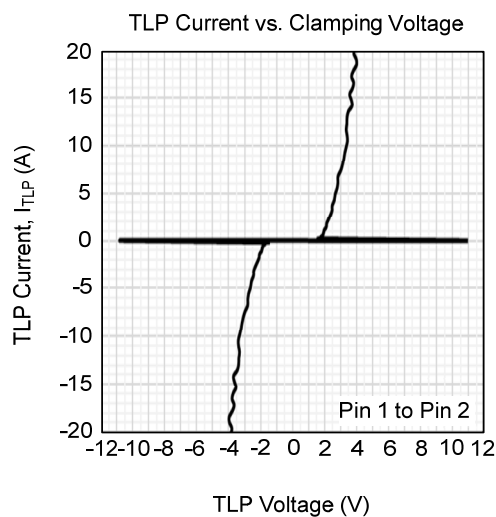
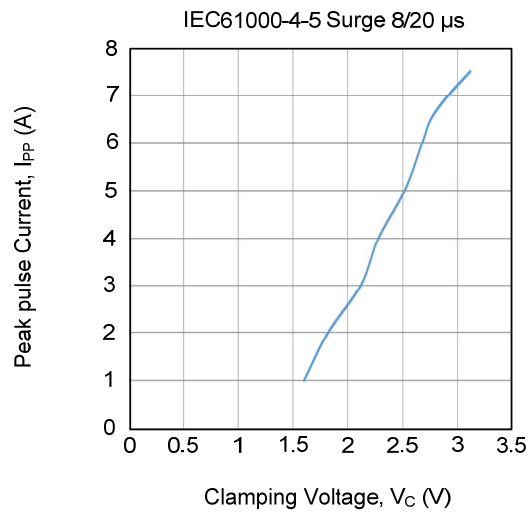
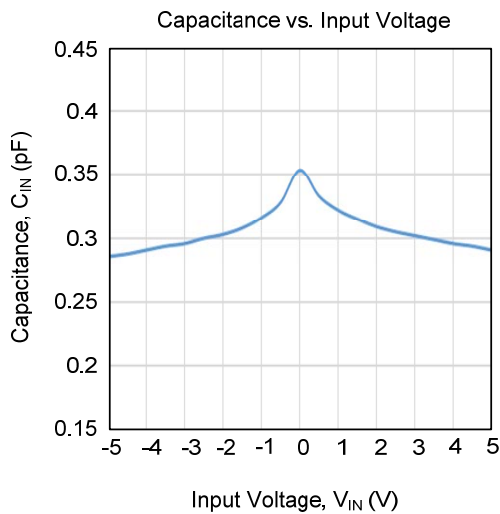
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------|------------------|---|-----|------|-----|------|
| Reverse Stand-Off Voltage | V _{RWM} | | | | 5 | V |
| Reverse Breakdown Voltage | V _{BR} | I _T =0.1mA | 6 | 9.5 | | V |
| Reverse Current | I _R | V _R =5V | | | 0.1 | μA |
| ESD Dynamic Turn-on Resistance | R _{dyn} | IEC61000-4-2 0 ~ +8kV, Contact mode, T _A =25°C | | 0.12 | | Ω |
| Clamping Voltage | V _{CL} | I _{PPM} =1.0A, t _p =8/20μs | | 1.7 | | V |
| | | I _{PPM} =7.0A, t _p =8/20μs | | 3.1 | 3.8 | V |
| Junction Capacitance | C _J | V _{DC} =2.5V, f=1MHz | | 0.3 | | 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 CHARACTERISTICS



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