



UESD12VN1U

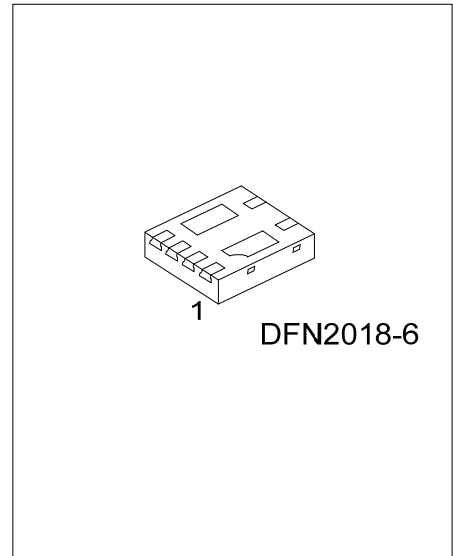
Preliminary

TVS

1-LINE UNI-DIRECTIONAL TVS DIODE ESD PROTECTION DEVICE

DESCRIPTION

The UTC **UESD12VN1U** is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The **UESD12VN1U** complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. The high ESD surge protection make **UESD12VN1U** an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.



FEATURES

- * Unidirectional device
- * Low leakage current ($I_R \text{ max.} < 0.5\mu\text{A}$ at V_{BR})
- * 4000W peak pulse power (8/20 μs)
- * Protects one data or power line
- * Low clamping voltage
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$

SYMBOL

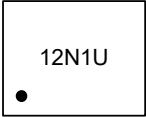


ORDERING INFORMATION

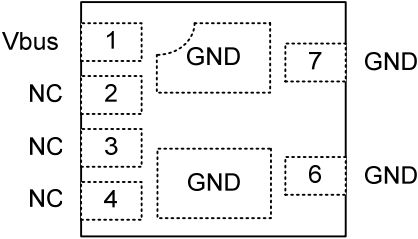
| Ordering Number | | Package | Packing |
|------------------------|------------------------|-----------|-----------|
| Lead Free | Halogen Free | | |
| UESD12VN1UL-K06-2018-R | UESD12VN1UG-K06-2018-R | DFN2018-6 | Tape Reel |

| | |
|--|---|
| <p>UESD12VN1UG-K06-2018-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p> | <p>(1) R: Tape Reel</p> <p>(2) K06-2018: DFN2018-6</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p> |
|--|---|

MARKING



PIN CONFIGURATION



DFN2018-6
(Top View)

■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, unless otherwise specified)

| PARAMETER | | SYMBOL | RATINGS | UNIT | |
|--------------------------------|--------------|-----------------------|------------|------------------|---|
| ESD Discharge | IEC61000-4-2 | Air Discharge | ± 30 | kV | |
| | | Contact Discharge | ± 30 | kV | |
| Peak Pulse Current | IEC61000-4-5 | $t_p=8/20\mu\text{s}$ | I_{PP} | 180 | A |
| Peak Pulse Power | | | P_{PP} | 4000 | W |
| Operating Junction Temperature | | T_J | -55 ~ +125 | $^\circ\text{C}$ | |
| Operating Temperature | | T_{OPR} | -55 ~ +125 | $^\circ\text{C}$ | |
| Storage Temperature | | T_{STG} | -55 ~ +150 | $^\circ\text{C}$ | |

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 ($T_A=25^\circ\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---------------------------------------|-----------|---|------|------|------|------|
| Reverse Stand-Off Voltage | V_{RWM} | | | | 13.5 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_R=1\text{mA}$ | 13.5 | | 17.5 | V |
| Forward Voltage Drop | V_F | $I_F=10\text{mA}$ | | 0.75 | 1.2 | V |
| Reverse Current | I_R | $V_R=13.5\text{V}$ | | | 500 | nA |
| Junction Capacitance | C_J | $V_R=0\text{V}$, $f=1\text{MHz}$ | | 1000 | | pF |
| Clamping Voltage (positive transient) | V_{CL} | $I_{PPM}=100\text{A}$, $t_p=8/20\mu\text{s}$ | | 21 | 25 | V |

Note: Device stressed with 8/20 μs exponential decay waveform according to IEC 61000-4-5.

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