



UESD3V3U1B01

Preliminary

TVS

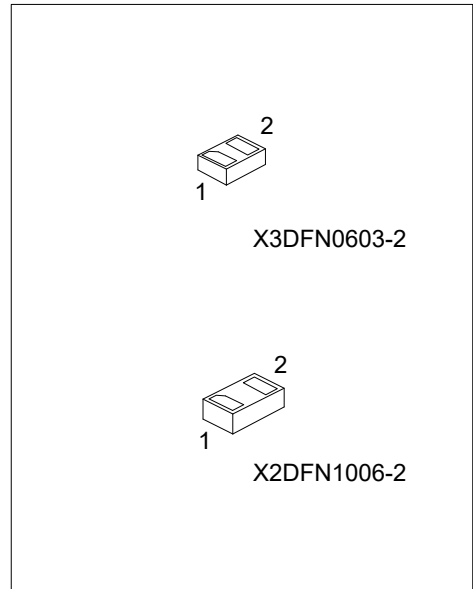
ULTRA LOW CAPACITANCE TVS DIODE

DESCRIPTION

The UTC **UESD3V3U1B01** 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
- * 30Watts peak pulse power ($t_p = 8/20\mu s$)
- * Solid-state silicon-avalanche technology
- * Capacitance: 0.35pF typical
- * Low clamping voltage
- * Low leakage current
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 18KV$
 - Contact discharge: $\pm 16KV$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 4A (8/20 μs)



SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
UESD3V3U1B01L-KAQ-R	UESD3V3U1B01G-KAQ-R	X3DFN0603-2	K	K	Tape Reel
UESD3V3U1B01L-KAZ-R	UESD3V3U1B01G-KAZ-R	X2DFN1006-2	K	K	Tape Reel

Note: Pin Assignment: K: Cathode

<p>UESD3V3U1B01G-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>
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MARKING

X3DFN0603-2	X2DFN1006-2

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

PARAMETER		SYMBOL	RATINGS	UNIT	
ESD Discharge	IEC61000-4-2	Air Discharge	± 18	kV	
		Contact Discharge	± 16	kV	
Peak Pulse Current	IEC61000-4-5	$t_p=8/20\mu\text{s}$	I_{PP}	7	A
Peak Pulse Power			P_{PK}	30	W
Operating Junction Temperature		T_J	-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}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=0.1\text{mA}$	5			V
Reverse Current	I_R	$V_R=3.3\text{V}$			0.1	μA
ESD Dynamic Turn-on Resistance	R_{dyn}	IEC61000-4-2 0 ~ +8kV, Contact mode, $T_A=25^\circ\text{C}$		0.175		Ω
Clamping Voltage	V_{CL}	$I_{PPM}=1.0\text{A}$, $t_p=8/20\mu\text{s}$		1.8		V
		$I_{PPM}=7.0\text{A}$, $t_p=8/20\mu\text{s}$		3.9	4.3	V
Junction Capacitance	C_J	$V_{DC}=0\text{V}$, $f=1\text{MHz}$		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.

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