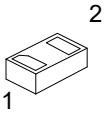
UESD5V0U1B02

TVS

ULTRA LOW CAPACITANCE TVS DIODE

X3DFN0603-2



X2DFN1006-2

■ 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 = 8/20μs)
* 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: ±17KV
  Contact discharge: ±15KV
  IEC61000-4-4 (EFT) 40A (5/50ns)
  IEC61000-4-5 (Lightning) 7A (8/20μs)

■ 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

UESD5V0U1B01G-KAQ-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) KAQ: X3DFN0603-2, KAZ: X2DFN1006-2 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

X3DFN0603-2	X2DFN1006-2
2S	4S

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

PARAMETER			SYMBOL	RATINGS	UNIT
ESD Discharge	IEC61000-4-2	Air Discharge	V_{ESD}	±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