



UNIDIRECTIONAL ESD PROTECTION DIODE

DESCRIPTION

The UTC **UESD12VS1U02** unidirectional ElectroStatic Discharge (ESD) protection diode in a X1DFN1006-2 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

- * ESD protection of one line
- * Max. peak pulse power: $P_{PPM} = 175W$
- * Low clamping voltage: $V_{CL} = 35V$
- * Ultra low leakage current: $I_{RM} < 1 nA$
- * ESD protection up to 30 Kv
- * IEC 61000-4-2; level 4 (ESD)
- * IEC 61000-4-5; (surge); $I_{PPM} = 5A$

SYMBOL



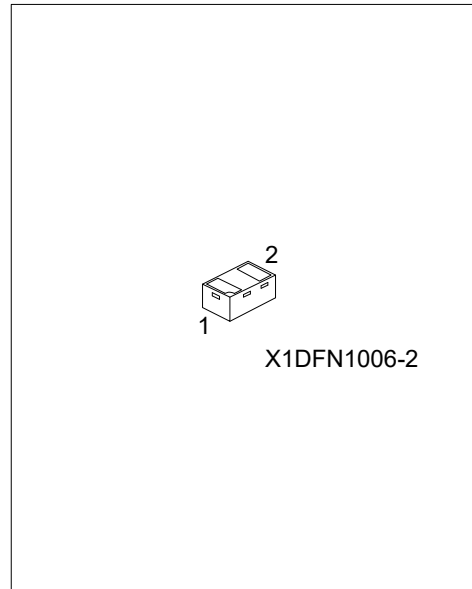
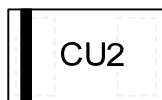
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
UESD12VS1U02L-KAA-R	UESD12VS1U02G-KAA-R	X1DFN1006-2	K	A	Tape Reel

Note: Pin Assignment: K: Cathode A: Anode

<p>UESD12VS1U02G-KAA-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) KAA: X1DFN1006-2 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT	
ESD Discharge	IEC61000-4-2	Air Discharge	±30	kV	
		Human Body Model	±10	kV	
Peak Pulse Current	IEC61000-4-5	t _p =8/20μs	I _{PP}	5	A
Peak Pulse Power			P _{PK}	175	W
Operating Junction Temperature		T _J	+150	°C	
Operating Temperature		T _{OPR}	-55 ~ +150	°C	
Storage Temperature		T _{STG}	-65 ~ +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}				12	V
Reverse Breakdown Voltage (Note 1)	V _{BR}	I _R =5mA	14.1	15	17	V
Reverse Current	I _R	V _R =12V		1	50	nA
Forward Voltage	V _F	I _F =10mA			1.3	V
Diode capacitance	C _d	V _R =0V, f=1MHz		38	75	pF
Clamping Voltage (positive transient) (Note 2)	V _{CL}	I _{PPM} =1.0A, t _p =8/20μs (Note)			20	V
		I _{PPM} =5.0A, t _p =8/20μs (Note)			35	V

Notes: 1. Pulse test: t_p ≤ 300 μs; duty cycle ≤ 0.02.

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

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