



USM712

Preliminary

TVS

TWO-DIRECTIONAL ESD / TRANSIENT PROTECTION DIODE

DESCRIPTION

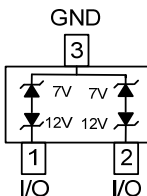
The UTC **USM712** is TVS Diode Array is designed to protect RS-485 applications with asymmetrical working voltages (-7V to 12V) from damage due to electrostatic discharge (ESD), electrical fast transients (EFT), and lightning induced surges.

The **USM712** can absorb repetitive ESD strikes above the aximum level specified in the IEC61000-4-2 international standard without performance degradation and safely issipate up to 7A of 8/20us induced surge current (IEC61000-4-5 2nd edition) with very low clamping voltages.

FEATURES

- * 150W peak pulse power(8/20μs)
- * Operating Voltages: 7V to 12V
- * Low clamping voltage
- * Low leakage current

SYMBOL

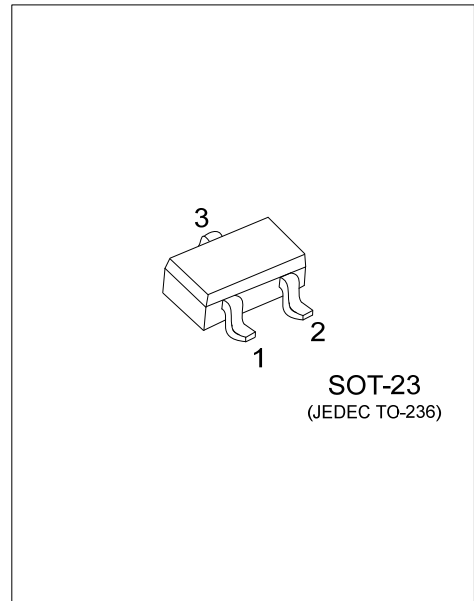
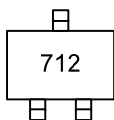


ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
USM712L-AE3-R	USM712G-AE3-R	SOT-23	I/O	I/O	GND	Tape Reel

<p>USM712G-AE3-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) AE3: SOT-23 (3) G: Halogen Free and Lead Free, L: Lead Free
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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	
		Contact Discharge	±30	kV	
Peak Pulse Current	IEC61000-4-5	t _p =8/20μs	I _{PP}	7	A
Peak Pulse Power			P _{PK}	150	W
Operating Junction Temperature		T _J	-55 ~ +125	°C	
Operating Temperature		T _{OPR}	-40 ~ +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}	Pin 3 to Pin 1 and Pin 3 to Pin 2			7	V
		Pin 1 to Pin 3 and Pin 2 to Pin 3			12	V
Reverse Breakdown Voltage	V _{BR}	I _R =1mA, Pin 3 to Pin 1 and Pin 3 to Pin 2	7.5			V
		I _R =1mA, Pin 1 to Pin 3 and Pin 2 to Pin 3	13.3			V
Reverse Current	I _R	V _R = V _{RWM}		0.01	0.5	uA
Diode capacitance	C _d	V _R =0V, f=1MHz		85		pF
		V _R =V _{RWM} , f=1MHz		60		pF
Clamping Voltage	V _{CL}	I _{PP} =1A, t _p =8/20μs, Pin 3 to Pin 1 and Pin 3 to Pin 2			11	V
		I _{PP} =1A, t _p =8/20μs, Pin 1 to Pin 3 and Pin 2 to Pin 3			19	V
		I _{PP} =7A, t _p =8/20μs, Pin 3 to Pin 1 and Pin 3 to Pin 2			15	V
		I _{PP} =7A, t _p =8/20μs, Pin 1 to Pin 3 and Pin 2 to Pin 3			25	V

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

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