

## DESCRIPTION

UET14A05L03 are surge rated diode arrays designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to data and transmission lines from over-voltage caused by electrostatic discharge (ESD), electrical fast transients (EFT), and lightning.

The unique design of this device incorporates one surge rated, and two data lines. Low capacitance steering diodes and a TVS diode in a single package. The low capacitance array configuration allows the user to protect two high-speed data or transmission lines.

The two inductance construction minimizes voltage overshoot during high current surges.

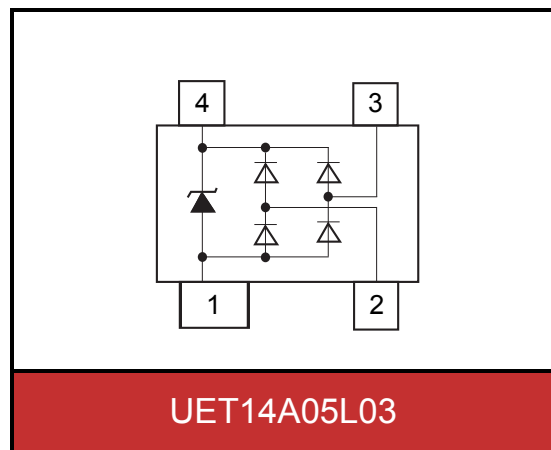


Contact :  $\pm 8\text{kV}$   
Air :  $\pm 15\text{kV}$



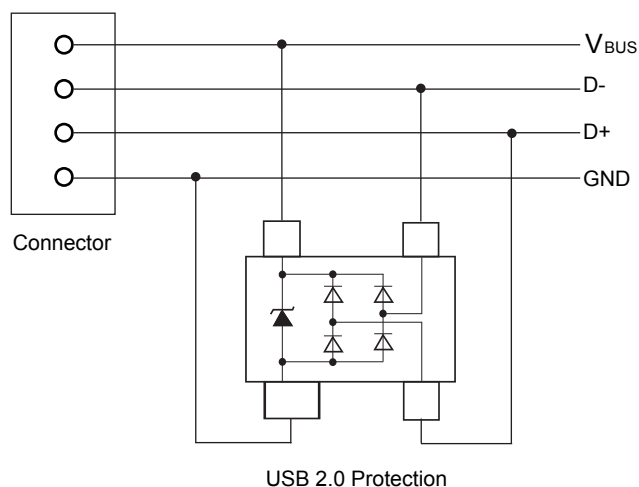
## SPECIFICATION FEATURES

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- Small SOT-143 surface mount package
- Protects two high-speed data lines and one power line
- Array of surge rated, low capacitance diodes
- Low clamping voltage
- Low leakage current
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Marking: B SL3



## APPLICATIONS

- USB power and data line protection
- Ethernet 10BaseT
- Video line protection
- I<sup>2</sup>C bus protection
- WAN/LAN equipment
- ISDN S/T interface
- Microcontroller input protection
- Portable electronics



**ELECTRICAL CHARACTERISTICS (T<sub>J</sub>=25°C)**

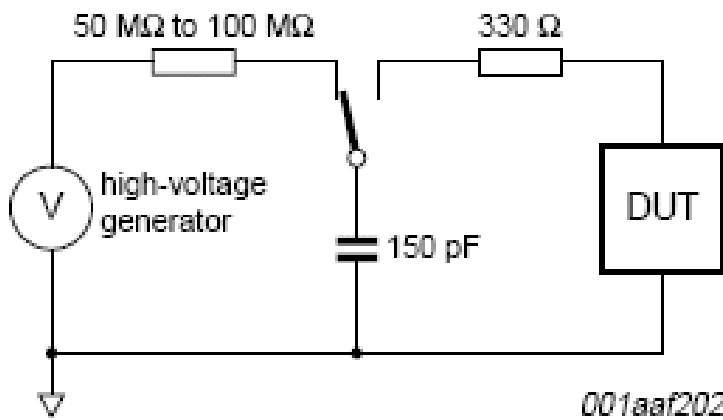
Rating	Symbol	Value	Unit
Peak pulse current (tp=8/20μs)	I <sub>PP</sub>	3	A
ESD voltage (Contact discharge)	V <sub>ESD</sub>	±8	kV
ESD voltage (Air discharge)		±15	
Storage & operating temperature range	T <sub>STG</sub> , T <sub>J</sub>	-55~+150	°C

Rating	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V <sub>RWM</sub>				5	V
Reverse breakdown voltage	V <sub>BR</sub>	I <sub>BR</sub> =1mA	6			V
Reverse leakage current	I <sub>R</sub>	V <sub>R</sub> =5V			5	μA
Clamping voltage (tp=8/20μs)	V <sub>C</sub>	I <sub>PP</sub> =1A			9.8	V
Clamping voltage (tp=8/20μs)	V <sub>C</sub>	I <sub>PP</sub> =2A			15	V
Off state junction capacitance	C <sub>J</sub>	0Vdc, f=1MHz Between I/O pins and GND		0.8		pF

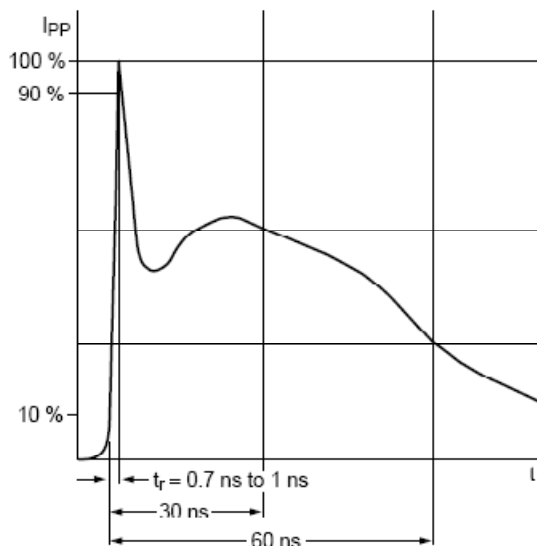
## ESD PROTECTION STANDARDS

### IEC 61000-4-2

Interfaces of consumer electronic equipment are widely specified according to the International Electrotechnical Commission standard IEC 61000-4-2. This standard is not targeted towards particular devices but towards general equipment, systems and subsystems that may be involved in electrostatic discharge. consists of a 150 pF capacitor and a 330  $\Omega$  series resistor representing the counterpart to the Device Under Test (DUT).



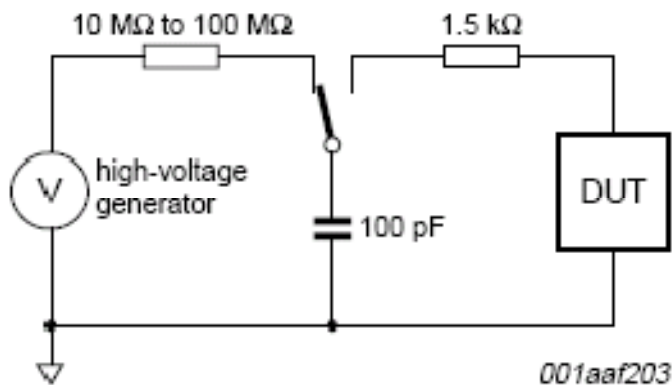
Test circuit according IEC 61000-4-2



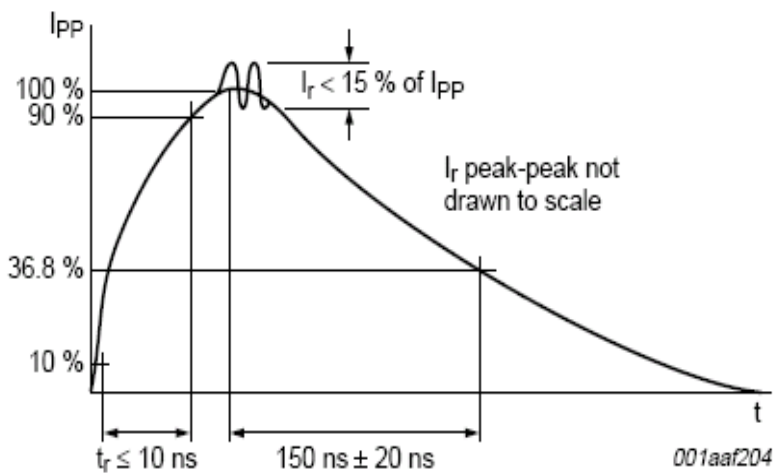
ESD surge according IEC 61000-4-2

### Human Body Model (HBM, MIL-883E method 3015.7)

The HBM standard simulates an ESD surge generated by human contact to electronic components.



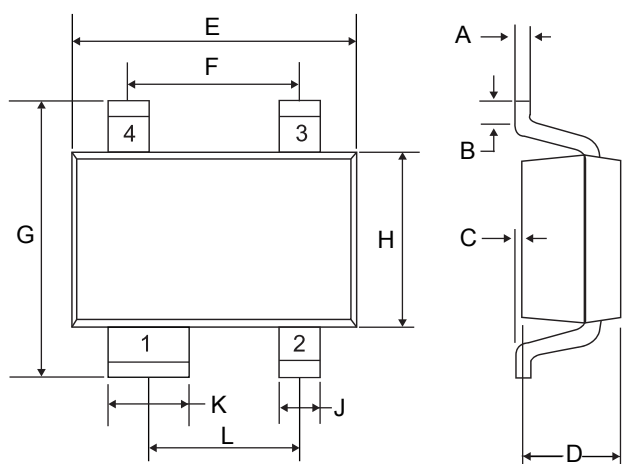
Test circuit according to MIL-883E method 3015.7



ESD surge according to MIL-883E method 3015.7

**PACKAGE AND SUGGESTED PAD LAYOUT DIMENSION**

**SOT-143 (unit:mm)**



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.003	0.006	0.08	0.15
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	-	0.045	-	1.14
E	0.110	0.120	2.79	3.04
F	0.075		1.90	
G	-	0.098	-	2.50
H	0.047	0.055	1.19	1.40
J	0.014	0.020	0.36	0.50
K	0.030	0.037	0.76	0.93
L	0.067		1.70	

