



## UPRTR5V0U4D

DIODE

### INTEGRATED QUAD ULTRA-LOW CAPACITANCE ESD PROTECTION

#### DESCRIPTION

The UTC **UPRTR5V0U4D** is an integrated quad ultra-low capacitance ESD protection diode array. it uses UTC's advanced technology to provide customers with low leakage current, 4 ultra-low input capacitance rail-to-rail ESD protection diodes and low clamping voltage, etc.

The UTC **UPRTR5V0U4D** is suitable for DVI, Ethernet and USB2.0, etc.

#### FEATURES

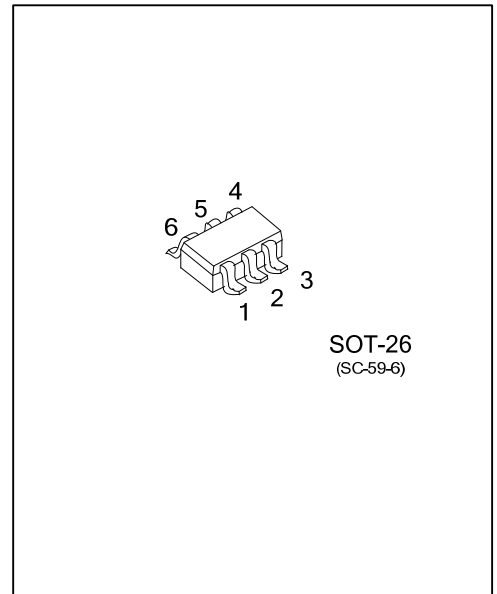
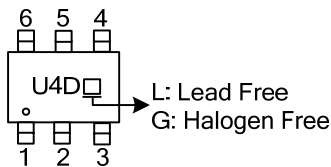
- \* Low clamping voltage
- \* Low leakage current (Max.=100nA)
- \* Four ultra-low input capacitance (typical 1pF)

#### ORDERING INFORMATION

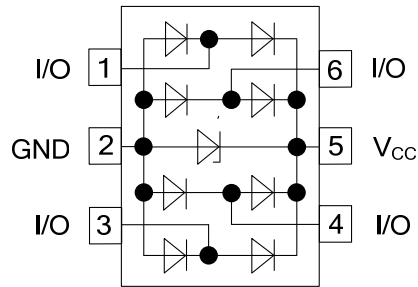
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UPRTR5V0U4DL-AG6-R	UPRTR5V0U4DG-AG6-R	SOT-26	Tape Reel

<p>UPRTR5V0U4DL-AG6-R</p> <p>(1)Packing Type (2)Package Type (3)Lead Free</p>	<p>(1) R: Tape Reel (2) AG6 : SOT-26 (3) L: Lead Free, G: Halogen Free</p>
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#### MARKING



## ■ PIN CONFIGURATION



## ■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	I/O	Terminal of ESD 1
2	GND	Ground
3	I/O	Terminal of ESD2
4	I/O	Terminal of ESD 3
5	V <sub>CC</sub>	Supply Voltage
6	I/O	Terminal of ESD 4

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Input Voltage		$V_{IN}$	0~5.5	V
ESD Voltage (HBM Contact)	IEC 61000-4-2 level 4 Contact Discharge (Note 2, 3)	$V_{ESD}$	8	kV
	MIL-STD-883 Human Body Model		8	kV
Ambient Temperature		$T_A$	-55~+150	°C
Junction Temperature		$T_J$	150	°C
Storage Temperature		$T_{STG}$	-65~+150	°C

Notes: 1. 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.

2. Device stressed with ten non-repetitive ESD pulses.

3. Measured from pin 1, 3, 4 or 6 to pin 2 or 5.

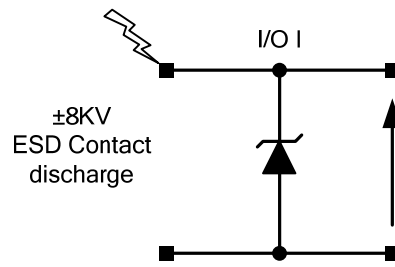
■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$  unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input/Output to Ground Capacitance	$C_{(I/O-GND)}$	$V_{(I/O-GND)}=0V$ , $V_{CC}=3.0V$ , $f=1\text{MHz}$ (Note 1)		1.0		pF
Reverse Leakage Current	$I_{LR}$	$V_R=3.0V$ (Note 1)			100	nA
Breakdown Voltage	$V_{BR}$	$I_I=1\text{mA}$	6		9	V
Supply Pin to Ground Capacitance	$C_{SUP}$	$V_{(I/O-GND)}=0V$ , $V_{CC}=3.0V$ , $f=1\text{MHz}$ (Note 2)		40		pF
Forward Voltage	$V_F$			0.7		V

Notes: 1. Measured from pins 1, 3, 4 and 6 to pin 2.

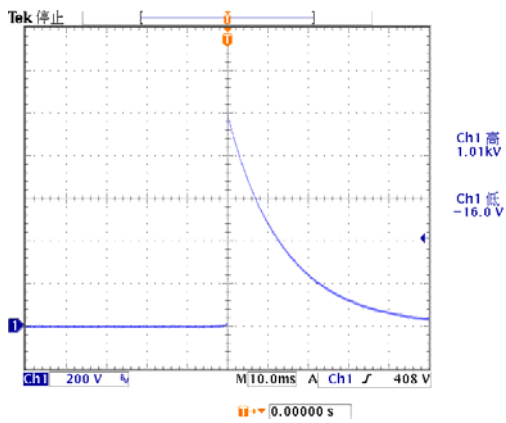
2. Measured from pin 5 to pin 2.

## ■ TYPICAL CHARACTERISTICS

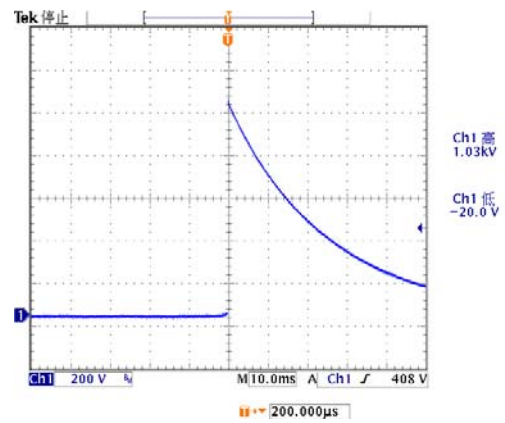


ESD Test Configuration

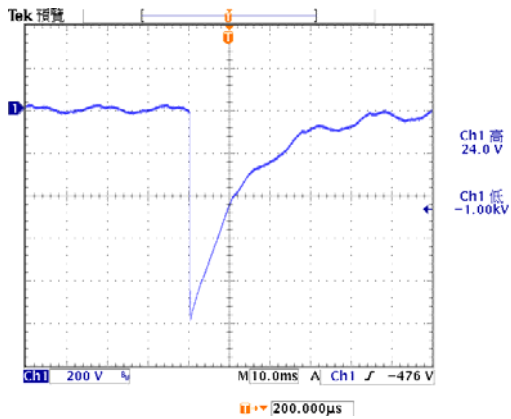
HBM +Voltage Waveform



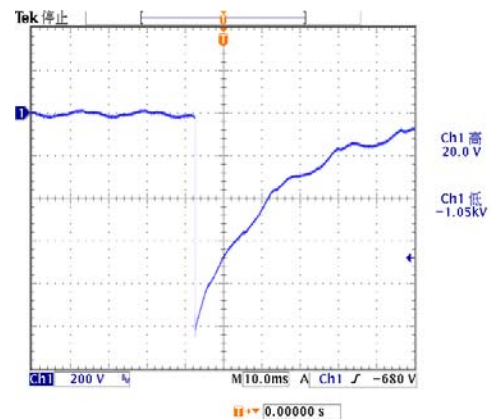
HBM +Voltage Waveform



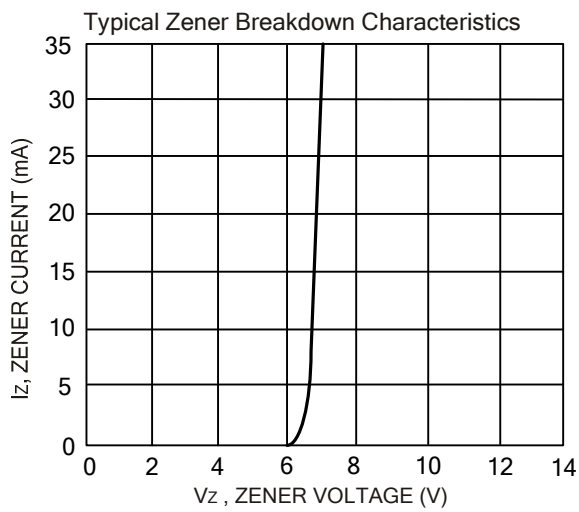
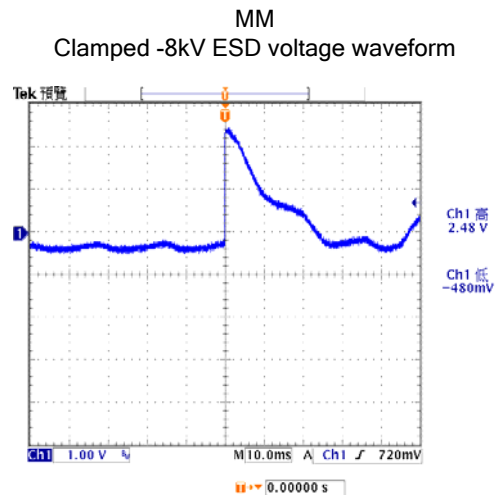
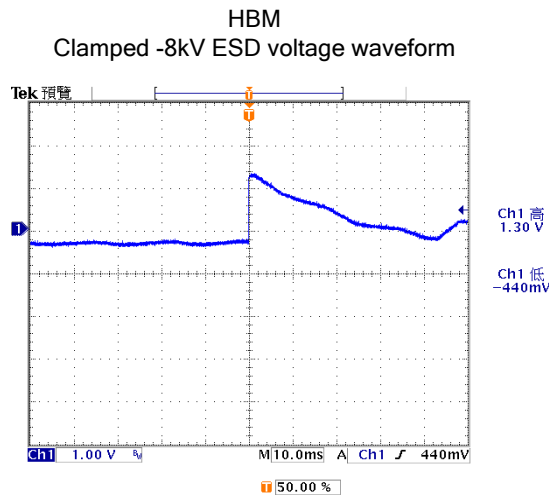
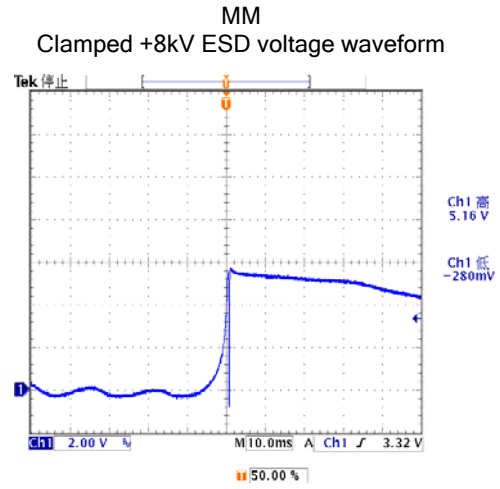
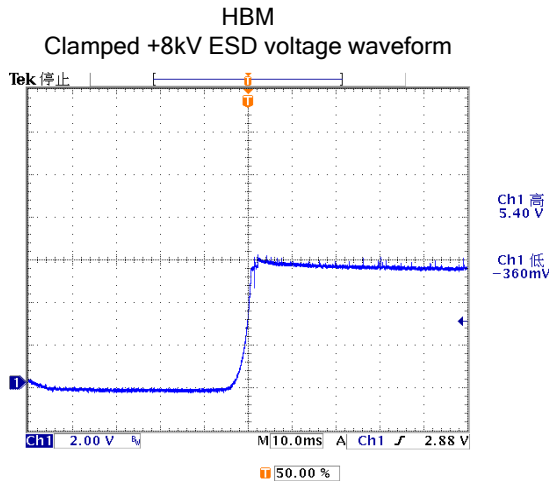
HBM -Voltage Waveform



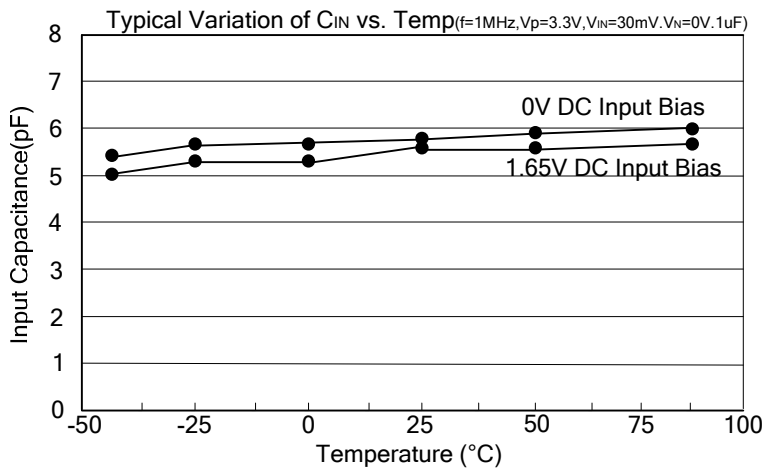
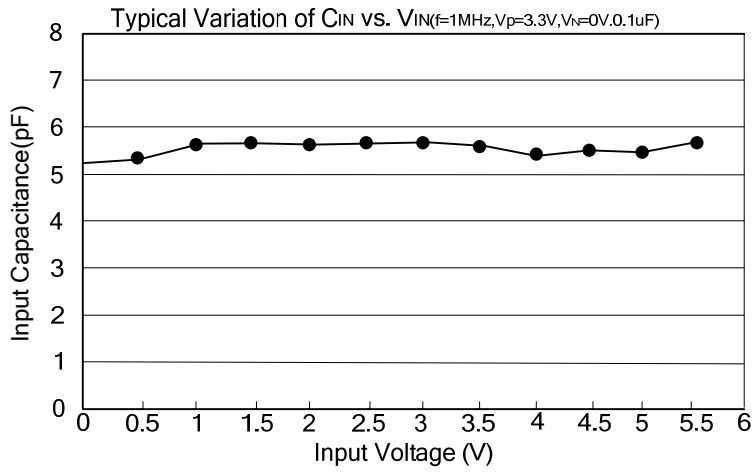
HBM -Voltage Waveform



■ TYPICAL CHARACTERISTICS(Cont.)



■ TYPICAL CHARACTERISTICS(Cont.)



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