



UESD4C5V6C08

Preliminary

TVS

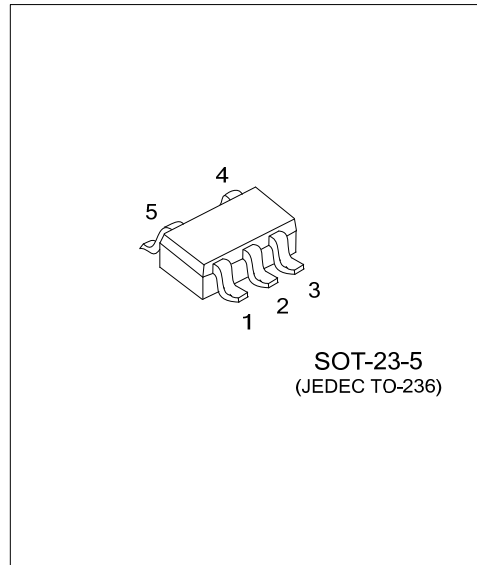
LOW CAPACITANCE ESD PROTECTION ARRAY FOR HIGH SPEED DATA INTERFACES

DESCRIPTION

The UTC **UESD4C5V6C08** is high performance design which includes surge rated diode arrays to protect high speed data interfaces.

The **UESD4C5V6C08** family has been specifically designed to protect sensitive components, which are connected to data and transmission lines, from over-voltage caused by Electrostatic Discharging (ESD), Electrical Fast Transients (EFT) and Lightning.

UESD4C5V6C08 is a unique design which includes surge rated, low capacitance steering diodes and a unique design of clamping cell which is an equivalent TVS diode in a single package. During transient conditions, the steering diodes direct the transient to either the power supply line or to the ground line. The internal unique design of clamping cell prevents over-voltage on the power line, protecting any downstream components.



FEATURES

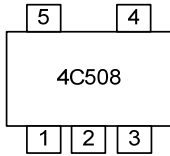
- * ESD Protect for 4 high-speed I/O channels
- * Supports USB 3.0 Data Rates (5 Gbps)
- * Low Capacitance: 1.0pF (Typ.)
- * IEC 61000-4-2 ESD Protection (Level 4 Contact)
- * IEC 61000-4-5 Surge Protection -5A (8/20µs)
- * Fast turn-on and Low clamping voltage
- * Array of surge rated diodes with internal equivalent TVS diode
- * Solid-state silicon-avalanche and active circuit triggering

ORDERING INFORMATION

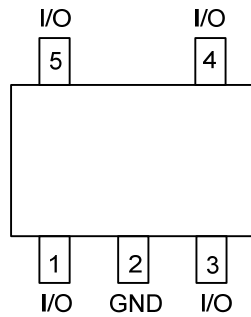
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UESD4C5V6C08L-AE5-R	UESD4C5V6C08G-AE5-R	SOT-23-5	Tape Reel

UESD4C5V6C08G-AE5-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AE5: SOT-23-5
	(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



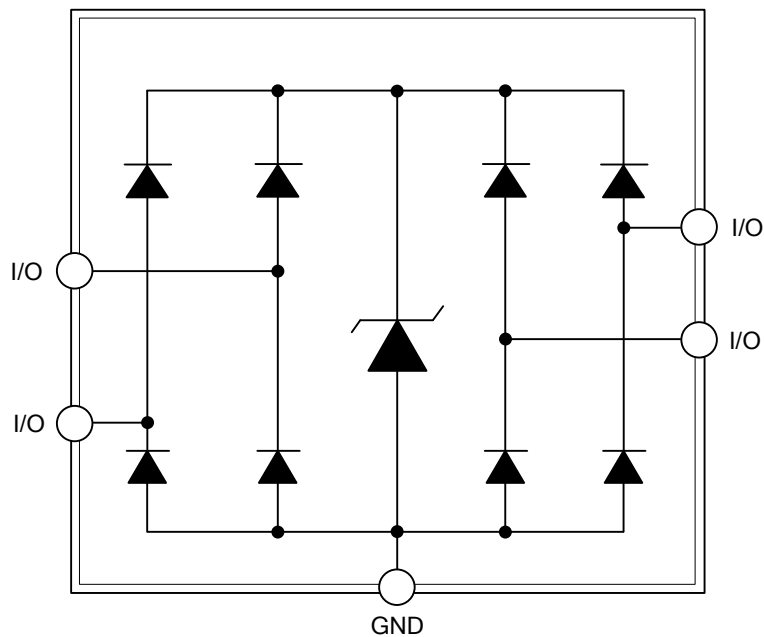
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	I/O	Terminal of ESD 1
2	GND	Ground
3	I/O	Terminal of ESD 2
4	I/O	Terminal of ESD 3
5	I/O	Terminal of ESD 4

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
ESD Discharge	IEC1000-4-2	Air Discharge	± 15	kV
		Contact Discharge	± 8	kV
Peak Pulse Power (8/20 μs)		I_{PP}	5.5	A
Operating Junction Temperature		T_J	125	$^\circ\text{C}$
Operating Temperature		T_{OPR}	-55 ~ +85	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^\circ\text{C}$

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 ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reverse Stand-Off Voltage	V_{RWM}	Pin 5 to Pin 2			5.0	V
Reverse Breakdown Voltage	V_{BV}	$I_R=1\text{mA}$, Pin 5 to Pin 2	6.2			V
Forward Voltage Drop	V_F	$I_F=15\text{mA}$, Pin 5 to Pin 2		0.8	1.2	V
Clamping Voltage	V_{CL}	$I_{PP}=5\text{A}$, $t_p=8/20\mu\text{s}$, Any Channel pin to Ground		9.0	10	V
ESD Holding Voltage	V_{HOLD}	IEC 61000-4-2 +6kV, Contact mode, Any Channel pin to Ground.		14		V
Reverse Leakage Current	I_{LEAK}	$V_{RWM}=5\text{V}$, Pin 5 to Pin 2			2.0	μA
Channel Leakage Current	I_{CH_LEAK}	$V_{PIN\ 5}=5\text{V}$, $V_{PIN\ 2}=0\text{V}$			1.0	μA
Channel Input Capacitance	C_{IN}	$V_{PIN\ 5}=5\text{V}$, $V_{PIN\ 2}=0\text{V}$, $V_{IN}=2.5\text{V}$, $f=1\text{MHz}$, Any Channel pin to Ground		1.0		pF
Channel to Channel Input Capacitance	C_{CROSS}	$V_{PIN\ 5}=5\text{V}$, $V_{PIN\ 2}=0\text{V}$, $V_{IN}=2.5\text{V}$, $f=1\text{MHz}$, Between Channel pins		0.5		pF

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