

1.Description

The CLAMP0504DT has an ultra-low capacitance with a typical value at 0.2pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 25\text{kV}$ air and $\pm 20\text{kV}$ contact discharge. It is assembled into a 6-pin lead-free SOT23 package.

3.Applications

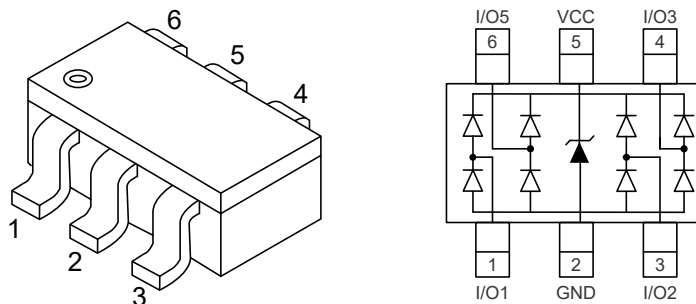
- USB 2.0 and USB 3.0 Ports
- USB OTG
- Digital video interface(DVI)
- Consumer products (STB, DVD, DSC, DVC...)

2.Features

- Ultra low leakage: nA level
- Working voltage: 5V
- Low clamping voltage
- Up to 4 data lines and one power line protects
- Ultra low capacitance: 0.2.pF typical (I/O to I/O)

- Monitor and Flat Panel Displays
- PCI Express and Serial SATA Ports
- Gigabit Ethernet
- IEEE 1394 Firewire Ports

4.Pinning information



SOT23-6



5. Absolute Maximum Ratings $T_A = 25^\circ\text{C}$

Parameter	Symbol	Maximum	Units
Peak Pulse Power (8/20 μs)	P_{pk}	60	W
Peak Pulse Current (8/20 μs)	I_{pp}	4	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 20	kV
Junction Temperature Range	T_J	-55 to 125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$



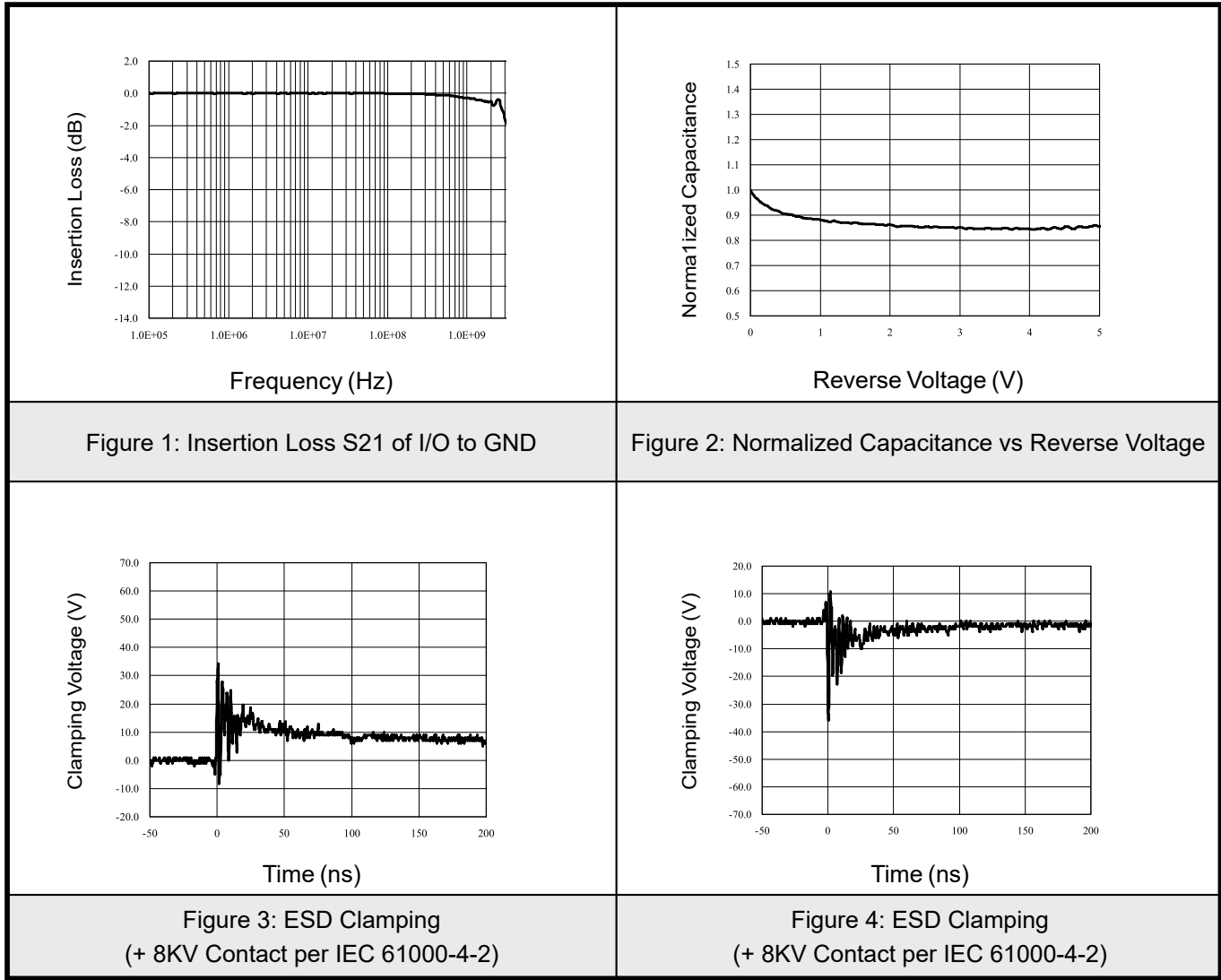
6. Electrical Characteristic ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6		9	V
Reverse leakage current	I_R	$V_{RWM}=5\text{V}$			1	μA
Clamping voltage	V_C	$I_{PP}=1\text{A}$ (8 x 20 μs pulse)			10	V
Clamping voltage	V_C	$I_{PP}=4\text{A}$ (8 x 20 μs pulse)			15	V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$ Between I/O pins and Ground		0.45	0.5	pF
	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$ Between I/O pins		0.2	0.3	pF
	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$ Between V_{CC} and GND		0.8		pF

Notes: I/O Pins are pin 1,3,4,6. Pin 5 is V_{CC} . Pin 2 is GND



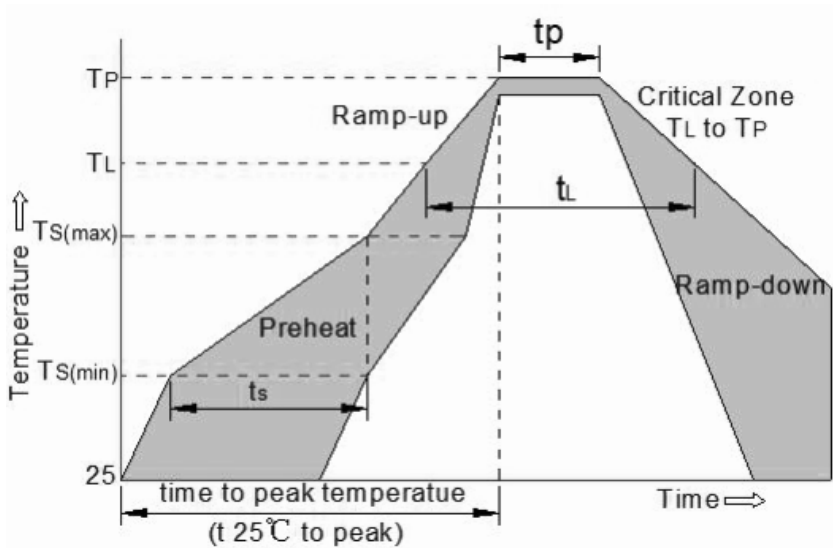
7. Typical characteristic





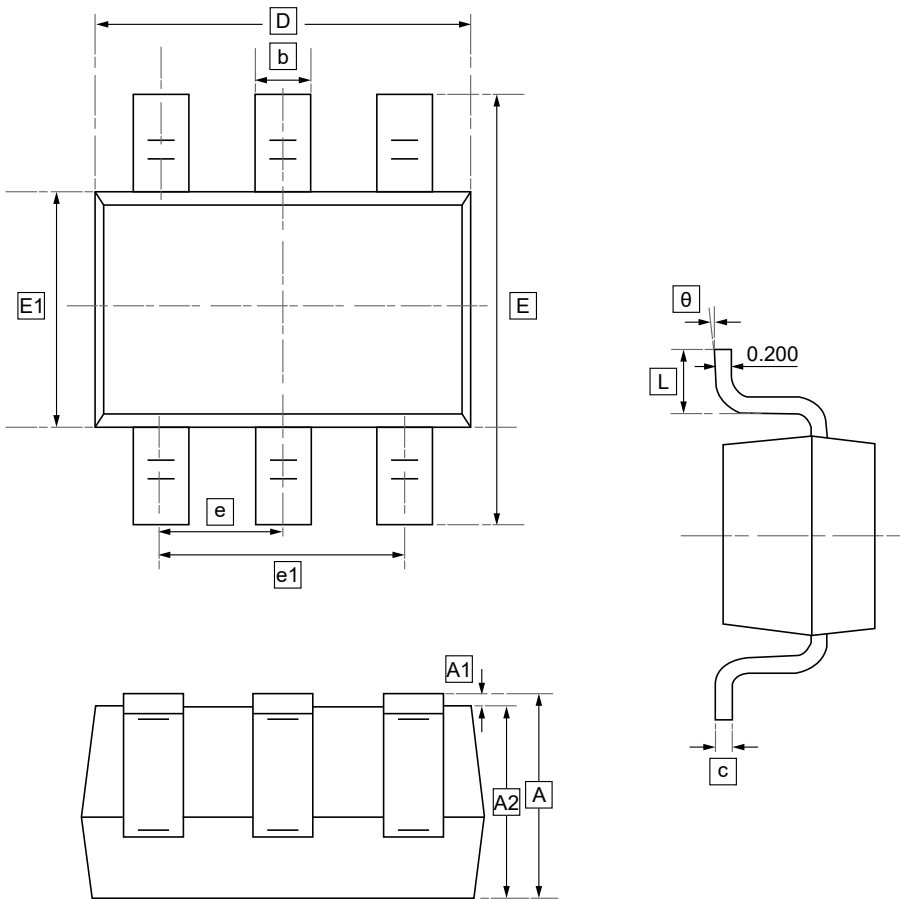
8.Soldering parameters

Reflow Condition		Pb-Free assembly (see FIG.2)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max ($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217°C
	-Temperature(T_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (T_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C





9.SOT-23-6 Package Outline Dimensions

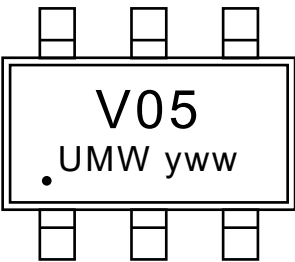


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E1	E	e	e1	L	θ
Min	1.050	0.000	1.050	0.300	0.100	2.820	1.500	2.650	0.950	1.800	0.300	0°
Max	1.250	0.100	1.150	0.500	0.200	3.020	1.700	2.950	BSC	2.000	0.600	8°



10.Ordering information



y: Year Code
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW CLAMP0504DT	SOT23-6	3000	Tape and reel



11.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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