1.Description

- Protects four I/O lines
- 150 watts peak pulse power per line(tP=8/20μs)
- Low clamping voltage
- Low operating voltage
- Low capacitance

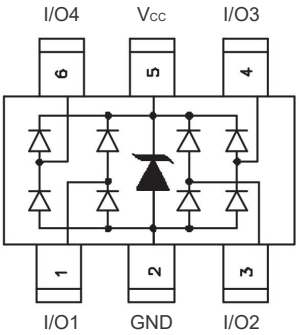
2.Applications

- USB 2.0&3.0 power and data line protection
- Digital video interface (DVI)
- Notebook computers
- Video graphics cards
- Monitors and flat panel displays
- 10/ 100/ 1000 ethernet
- SIM ports
- ATM interfaces

3.Protection Solution To Meet

- IEC61000-4-2 (ESD) ±20kV (air) ±20kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 5A (8/20μs)

4.Pinning information



SOT23-6

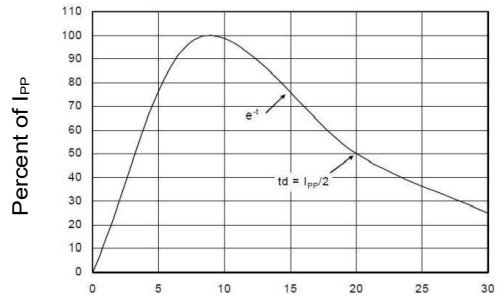
5.Absolute Maximum Ratings T_A= 25°C

Parameter	Symbol	Maximum	Units
Peak pulse power dissipation on 8/20μs waveform	P_{PP}	150	W
ESD per IEC 61000−4−2 (Air)	V_{ESD}	±20	kV
ESD per IEC 61000−4−2 (Contact)		±20	kV
Lead soldering temperature	T_L	260 (10 sec.)	°C
Junction Temperature Range	T_J	-55 to 125	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

6.Electrical Characteristic (T_A=25°C unless otherwise noted)

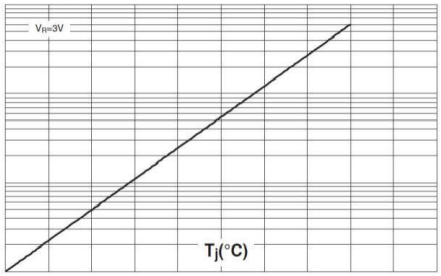
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse working voltage	V_{RWM}				5	V
Reverse breakdown voltage	V_{BR}	I_T=1mA	6			V
Reverse leakage current	I_R	V_{RWM}=5V			1	μA
Forward voltage	V_F	I_T=10mA		0.8	1	V
Clamping voltage (I/0 pin to Ground)	V_C	I_{PP}=1A, t_P=8/20μs		9.5	11	V
		I_{PP}=5A, t_P=8/20μs		12.5	15	V
Junction capacitance	C_J	V_{RWM}=0V, f=1MHz Any I/O pin to Ground		0.65	0.8	pF
		V_{RWM}=0V, f=1MHz Between I/O pins		0.3	0.5	pF

7.Typical characteristic



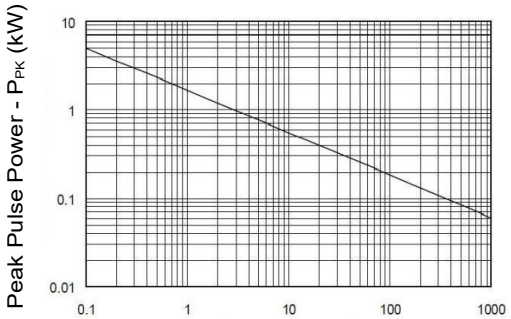
Time(μs)

Figure 1: Pulse Waveform



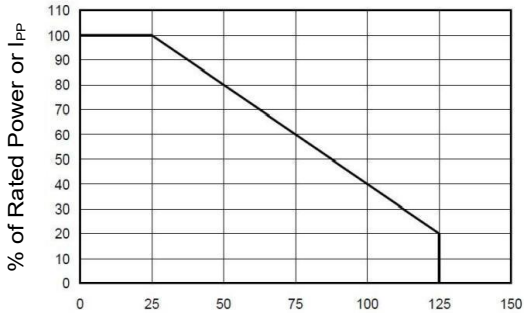
T_J(°C)

Figure 2: $I_R(T_J)/I_R(T_J=25°C)$



Pulse Duration - t_P(μs)

Figure 3: Non-Repetitive Peak Pulse Power vs. Pulse Time

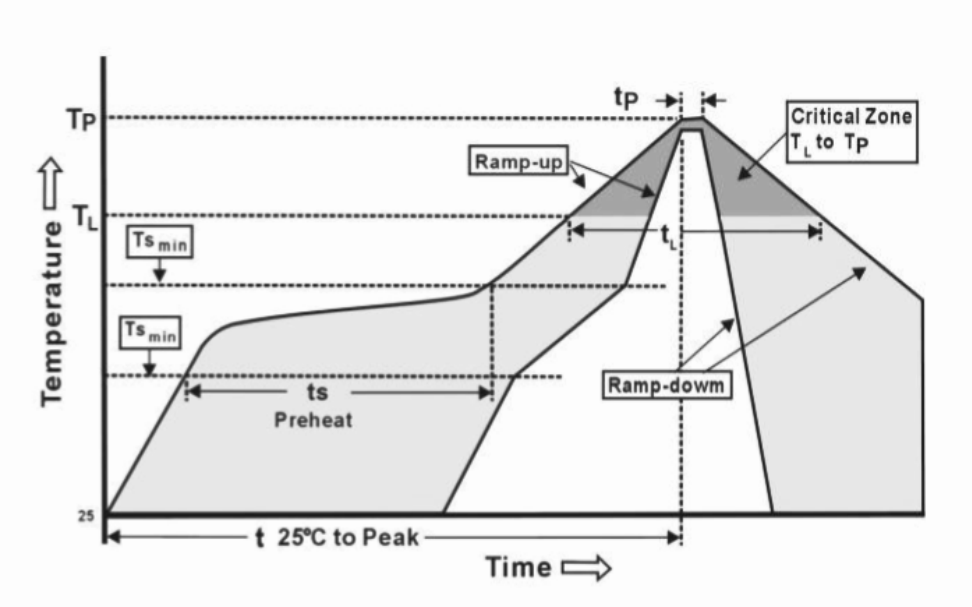


Ambient Temperature - T_A(°C)

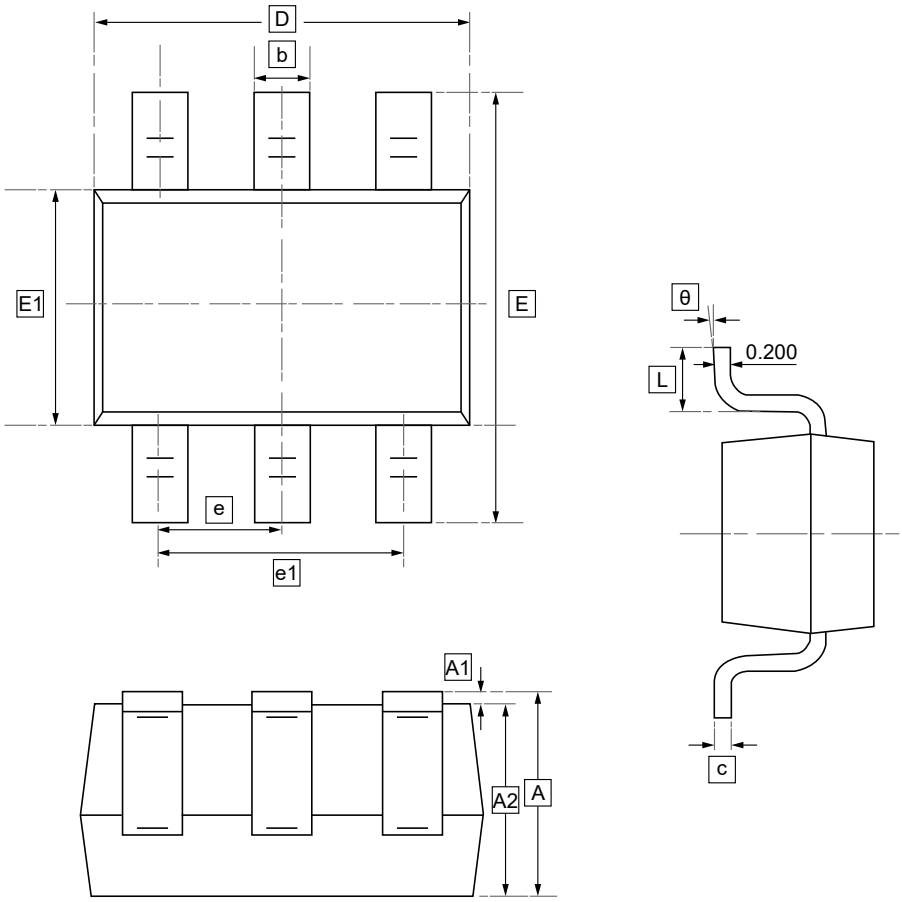
Figure 4: Power Derating Curve

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) (ts)	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) (Liquidus)	+217°C
	-Temperature(T_L)	60-150 secs.
Peak Temp (T_p)		+250 $^{+0/-5}$ °C
Time within 5°C of actual Peak Temp (T_p)		20-40 seconds
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		260°C



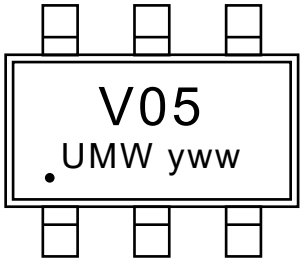
9.SOT-23-6 Package Outline Dimensions



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



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW PDWL050019	SOT23-6	3000	Tape and reel

11.Disclaimer

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