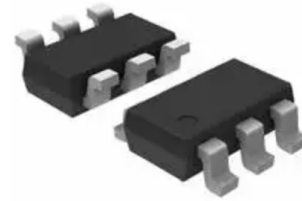


**Features**

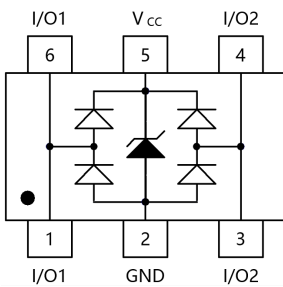
- \* Ultra low leakage: nA level
- \* Low clamping voltage
- \* RoHS Compliant
- \* REACH & SVHC Compliant
- \* Halogen Compliant
- \* SOT-23-6L Package



**Ordering Information**

Part Number	Packaging	Reel Size
USBLC6-2SC6	3000/Tape & Reel	7 inch

**Circuit Diagram**

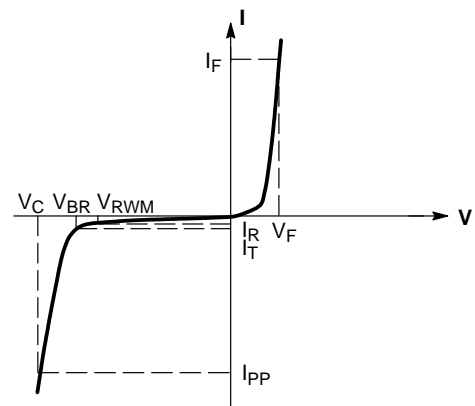


**Marking Diagram**



**Portion Electronics Parameter**

Symbol	Parameter
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$



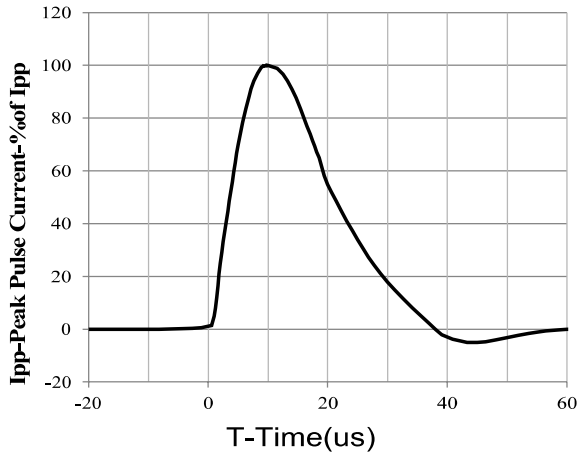
**Absolute Maximum Ratings ( $T_A=25^{\circ}C$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu$ s, I/O-GND)	$P_{pk}$	88	W
Peak Pulse Power (8/20 $\mu$ s, VCC-GND)	$P_{pk}$	120	W
Peak Pulse Current (8/20 $\mu$ s, I/O-GND)	$I_{PP}$	5.5	A
Peak Pulse Current (8/20 $\mu$ s, VCC-GND)	$I_{PP}$	8	A
ESD per IEC 61000-4-2 (Air)	$V_{ESD}$	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	$\pm 30$	kV
Operating Temperature Range	$T_J$	-55 to +125	$^{\circ}C$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^{\circ}C$

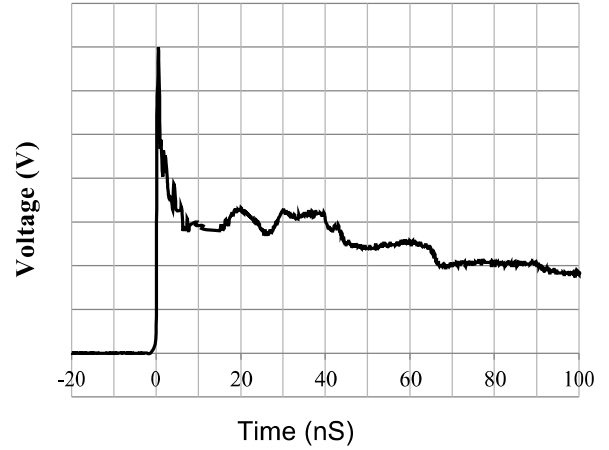
**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V <sub>RWM</sub>				5	V
Breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> = 1mA	6		9	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>RWM</sub> = 5V		<10	100	nA
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> = 1A (8 / 20μs pulse), I/O-GND		8	11	V
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> = 5.5A (8 / 20μs pulse), I/O-GND		10.5	16	V
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> = 1A (8 / 20μs pulse), I/O-I/O		9.5	12	V
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> = 5.5A (8 / 20μs pulse), I/O-I/O		16.5	20	V
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> = 1A (8 / 20μs pulse), VCC-GND		7.8	11	V
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> = 8A (8 / 20μs pulse), VCC-GND		10.4	15	V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> = 0V, f = 1MHz, I/O-GND		0.7	1	pF
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> = 0V, f = 1MHz, I/O-I/O		0.35	0.5	pF
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> = 0V, f = 1MHz, VCC-GND		6	10	pF

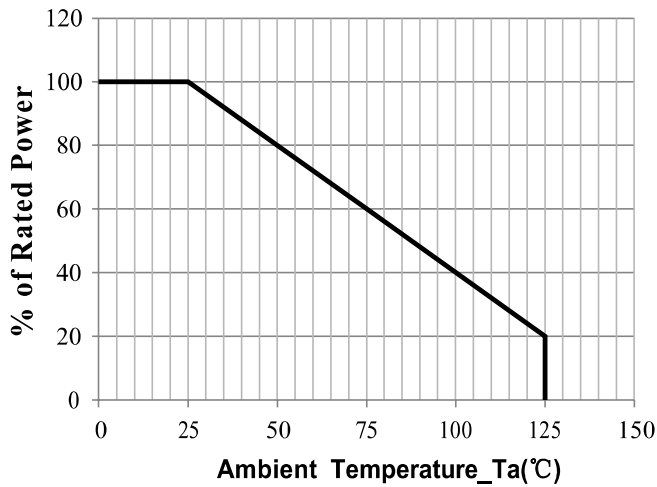
**Typical Performance Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise Specified)**



**8 / 20us Pulse Waveform**

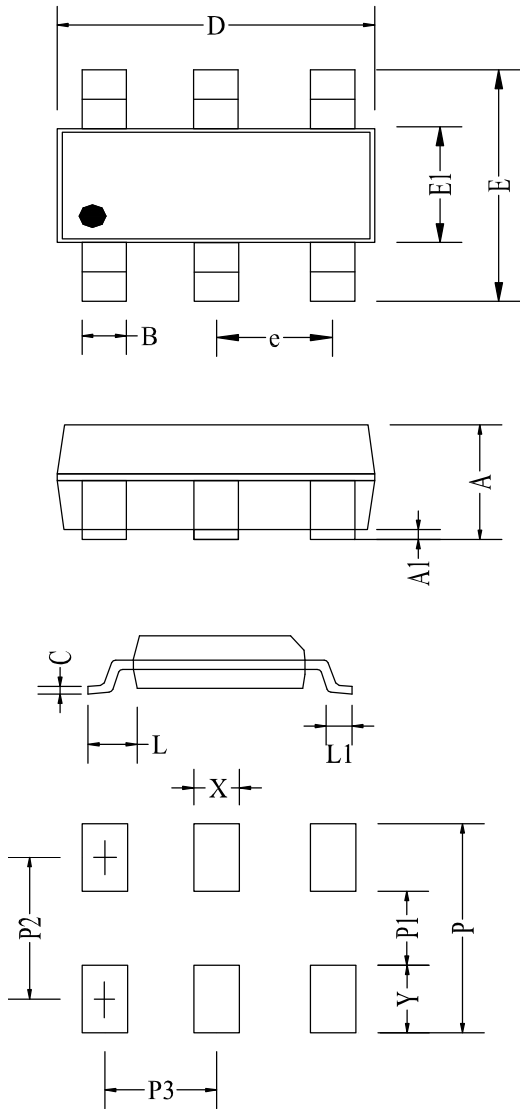


**IEC61000-4-2 Pulse Waveform**



**Power Derating Curve**

**SOT-23-6L Package Outline Drawing**

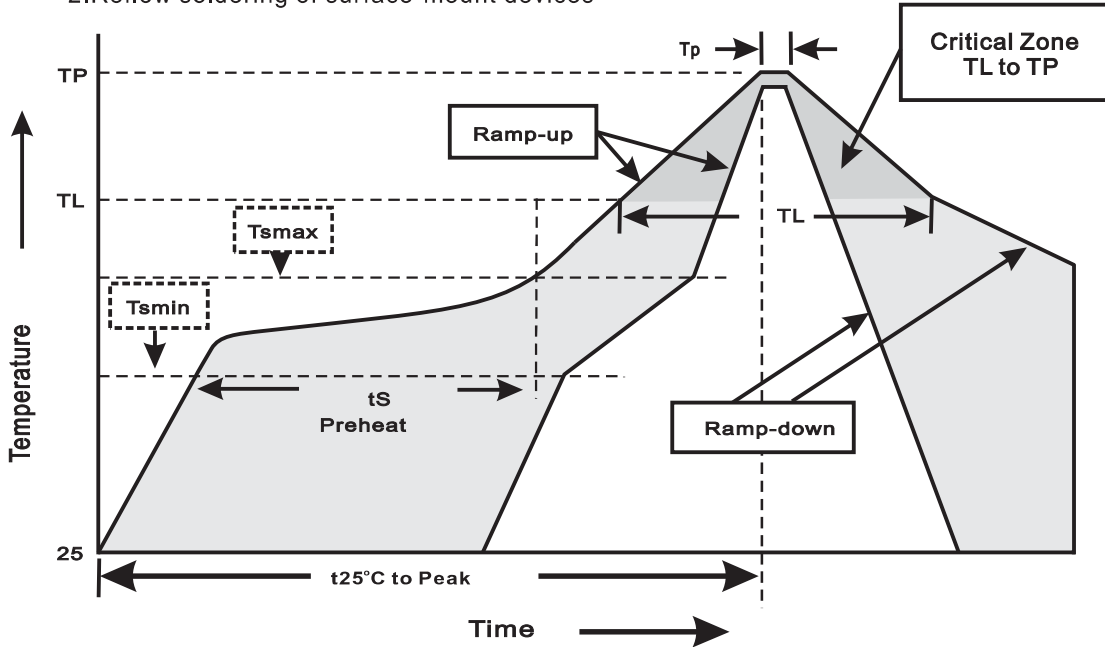


**Land Pattern**

Symbol	Millimeter			Inches		
	Min	Typ	Max	Min	Typ	Max
A	0.90	1.18	1.45	0.035	0.046	0.057
A1	0.02	0.08	0.14	0.001	0.003	0.006
B	0.30	0.40	0.50	0.012	0.016	0.020
C	0.08	0.15	0.20	0.003	0.006	0.008
D	2.80	3.00	3.10	0.110	0.118	0.122
e	0.69	0.95	1.02	0.027	0.037	0.040
E1	1.50	1.60	1.75	0.059	0.063	0.069
E	2.80BSC			0.110BSC		
L1	0.35	0.45	0.55	0.014	0.018	0.022
L	0.6			0.024		
X	0.6			0.024		
Y	1.1			0.043		
P	3.6			0.142		
P1	1.4			0.055		
P2	2.5			0.098		
P3	0.95			0.037		

**Suggested thermal profiles for soldering processes**

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(TL to TP)	<3°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(ts)	150°C 200°C 60~120sec
Tsmax to TL -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(TL) -Time(tL)	217°C 60~260sec
Peak Temperature(TP)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(tp)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

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