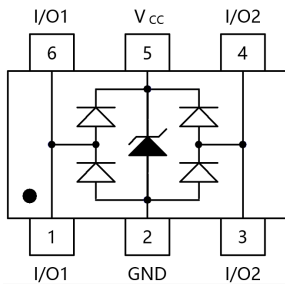


Features

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

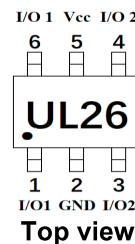
Circuit Diagram



Ordering Information

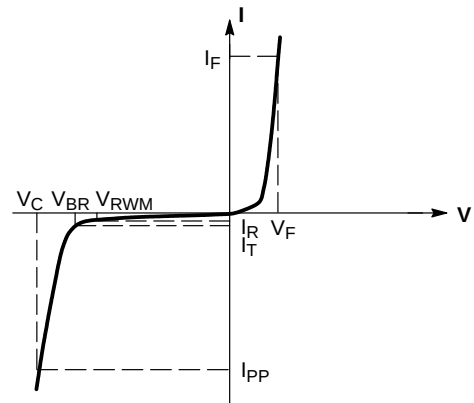
Part Number	Packaging	Reel Size
USBLC6-2SC6-FS	3000/Tape & Reel	7 inch

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}



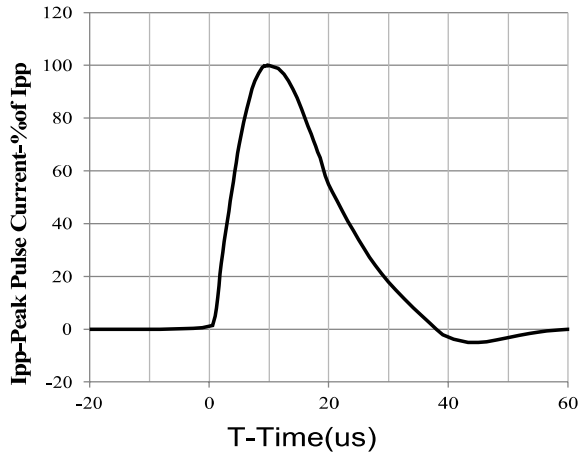
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

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

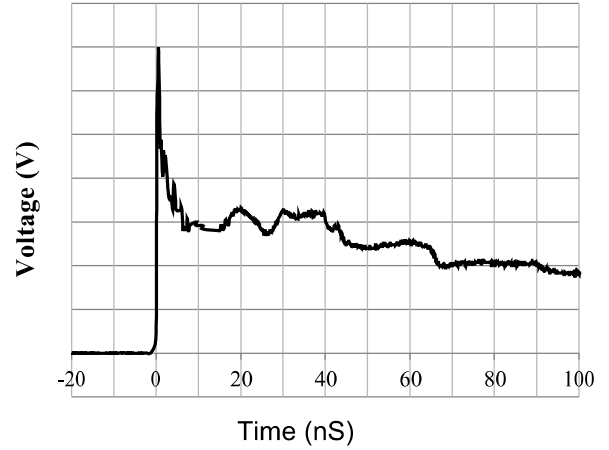
Electrical Characteristics (T_A=25°C unless otherwise specified)

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

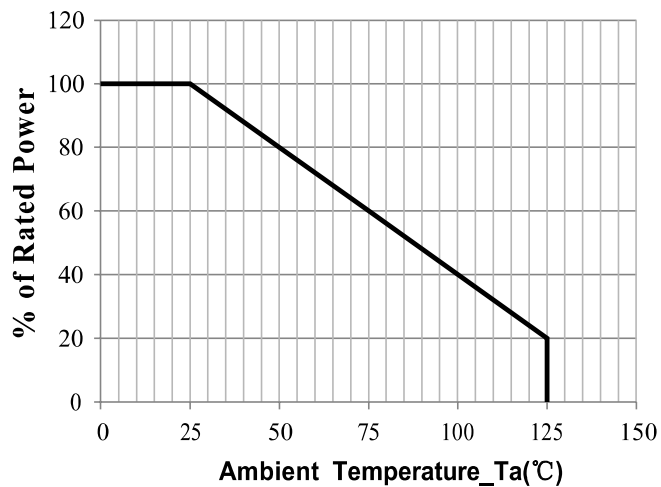
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



8 / 20us Pulse Waveform

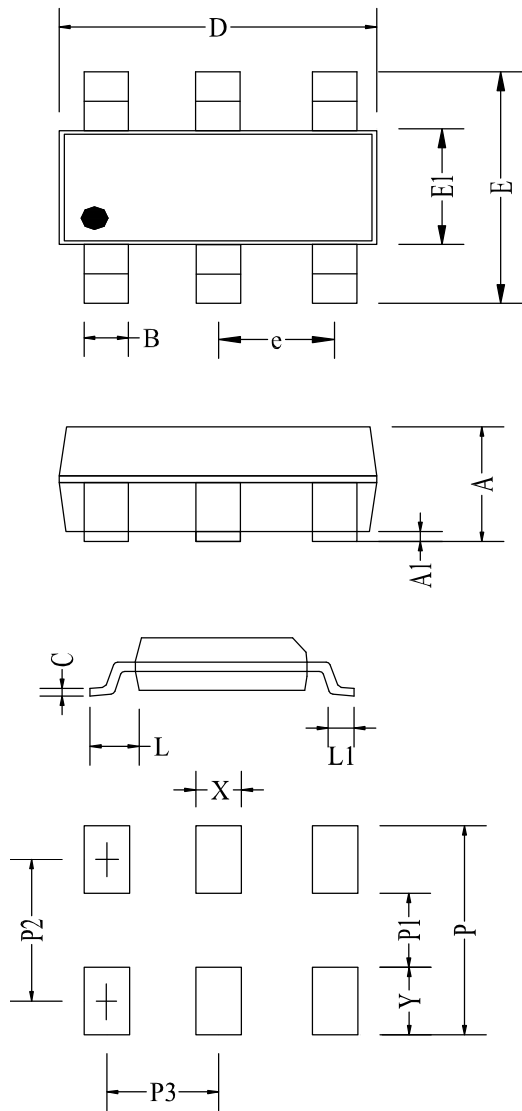


IEC61000-4-2 Pulse Waveform



Power Derating Curve

SOT-23-6L Package Outline Drawing



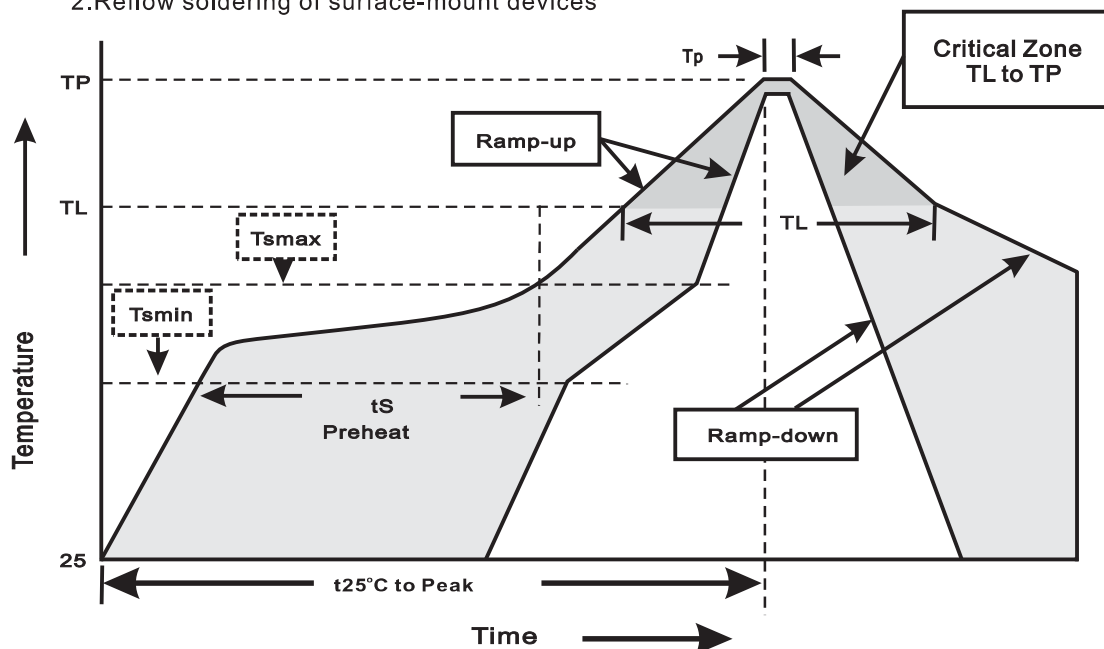
Land Pattern

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(T _L to T _P)	<3°C/sec
Preheat -Temperature Min(T _{smín}) -Temperature Max(T _{smáx}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smáx} to T _L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T _L) -Time(t _L)	217°C 60~260sec
Peak Temperature(T _P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t _P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes