

1.Description

SDT23C24L02 component is designed to protect sensitive electronics from damage or latch-up due to ESD and other voltage induced transient events. It is designed for use in applications where board space is at a premium. The device will protect up to two lines. It is bidirectional devices and may be used on lines where the signal polarities are above ground.

3.Features

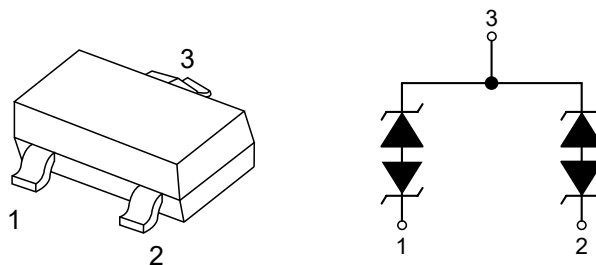
- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- SOT-23 surface mount package
- Protects bidirectional two I/O lines
- Peak power dissipation of 350W under 8/20 μ s waveform

2.Applications

- RS-232 and RS-422 data lines
- Microprocessor based equipment
- LAN/WAN equipment
- Desktops PC and servers
- Notebook, Laptop and Palmtop computers
- Set Top Box
- Peripherals
- Serial and Parallel ports

- Working voltage: 24V
- Low leakage current
- Low operating and clamping voltages
- Solder reflow temperature: Pure Tin-Sn, 260~270°C

4.Pinning information



SOT-23



5. Absolute Maximum Ratings

Parameter	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$ waveform)	P_{PP}	350	W
ESD voltage (Contact discharge)	V_{ESD}	± 8	kV
ESD voltage (Air discharge)		± 15	kV
Storage & junction temperature range	T_J, T_{STG}	-55 to 150	$^{\circ}C$

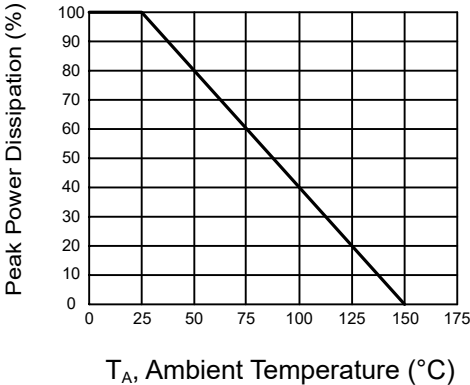
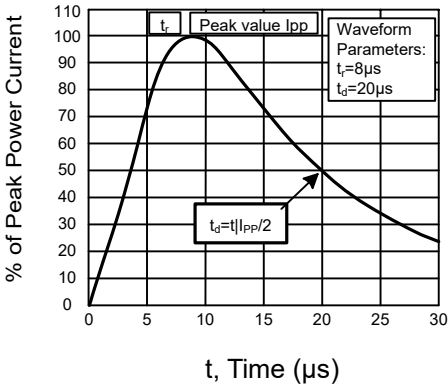
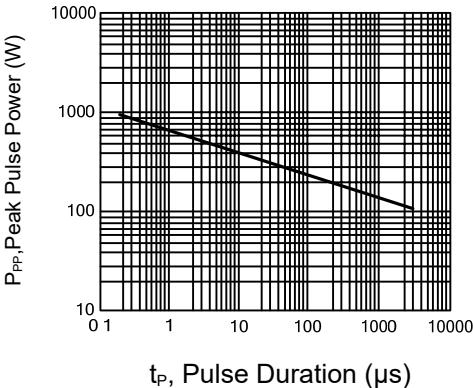
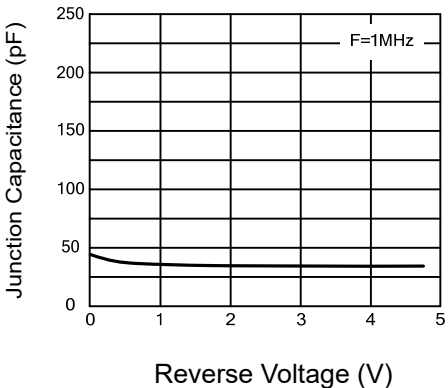


6. Electrical Characteristics ($T_J=25^{\circ}\text{C}$)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				24	V
Reverse Breakdown Voltage	V_{BR}	$I_{BR}=1\text{mA}$	26.7			V
Reverse Leakage Current	I_R	$V_R=24\text{V}$, Each I/O pin			1	μA
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_C	$I_{PP}=1\text{A}$			43	V
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_C	$I_{PP}=5\text{A}$			52	V
Off state junction capacitance	C_J	0Vdc, $f=1\text{MHz}$ Between I/O pins and GND		40		pF



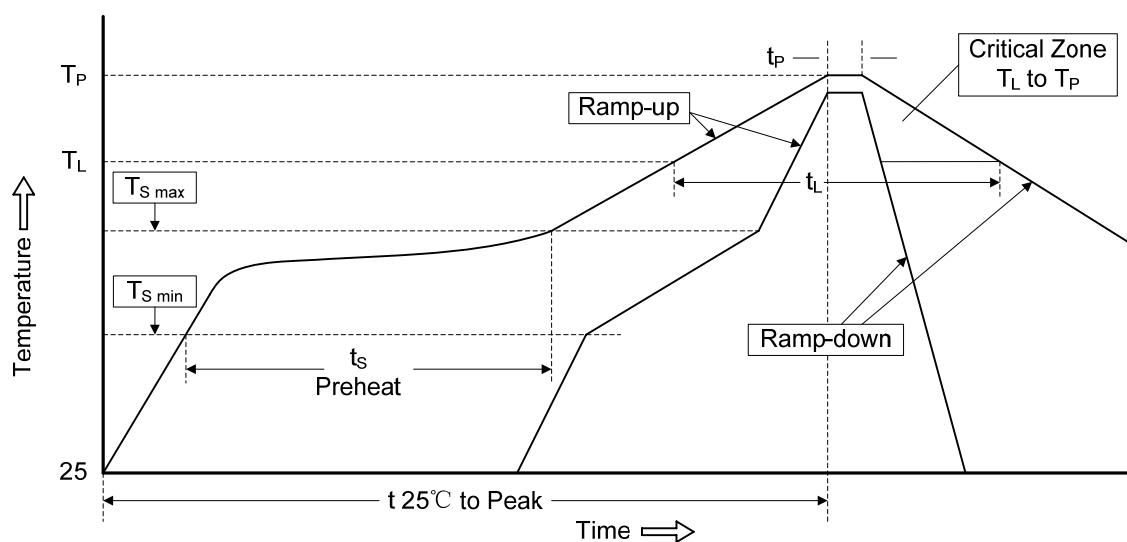
7. Typical characteristic

	
Figure 1: Power Derating Curve	Figure 2: Pulse Waveforms
	
Figure 3: Non-Repetitive Peak Pulse Power vs. Pulse Time	Figure 4: Normalized Capacitance vs. Reverse Voltage



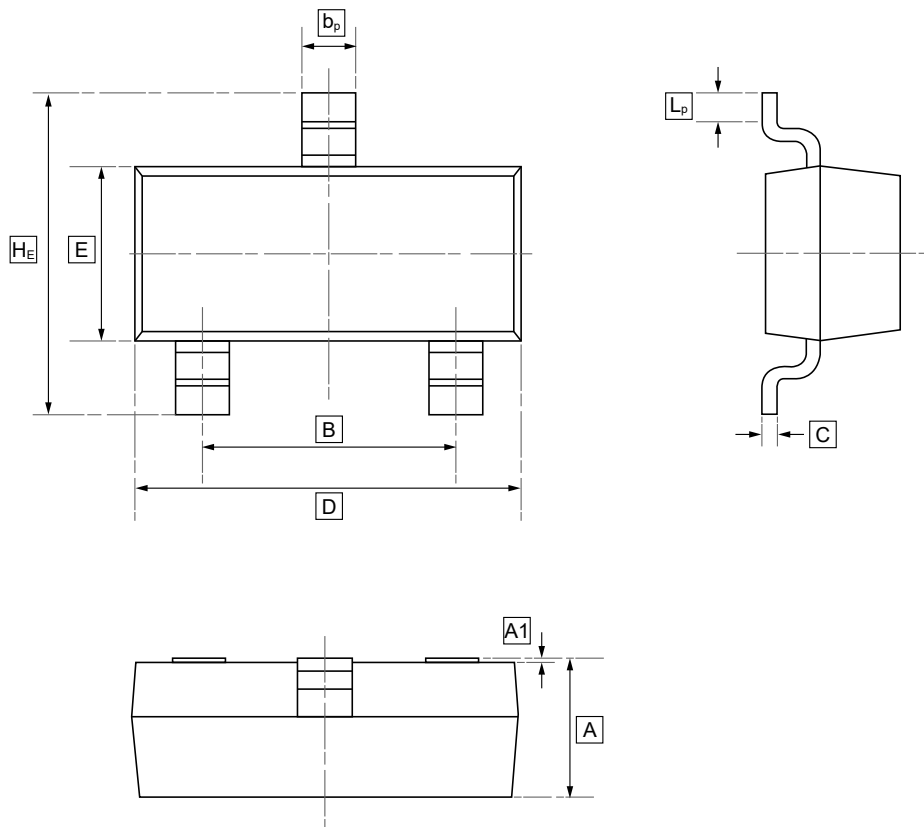
8. Recommended Soldering Conditions

Reflow Condition		Pb-Free Assembly
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 (T_L to T_P)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Time maintained above:	-Temperature(T_L)	217°C
	-Time(T_L)	60-150 secs.
Peak Temp (T_P)		260°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 Temperature		8 min. Max





9.SOT-23 Package Outline Dimensions

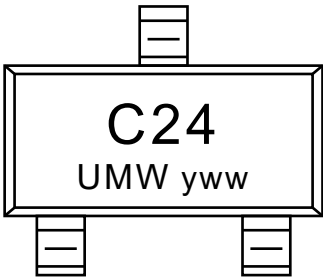


DIMENSIONS (mm are the original dimensions)

Symbol	A	B	b_p	C	D	E	H_E	A1	L_p
Min	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20
Max	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50



10.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW SDT23C24L02	SOT-23	3000	Tape and reel



11.Disclaimer

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