UMW SDT23C24L02

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.

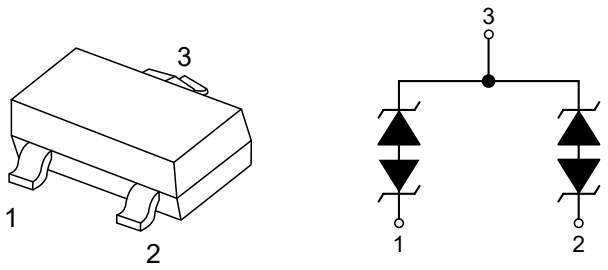
2.Applications

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

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 8/20μs waveform
- 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=8/20μs 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	°C

6.Electrical Characteristics(T_J=25°C)

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

7.Typical characteristic

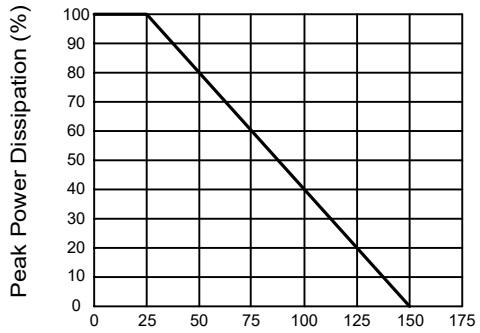


Figure 1: Power Derating Curve

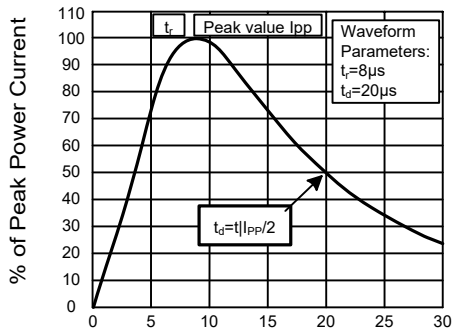


Figure 2: Pulse Waveforms

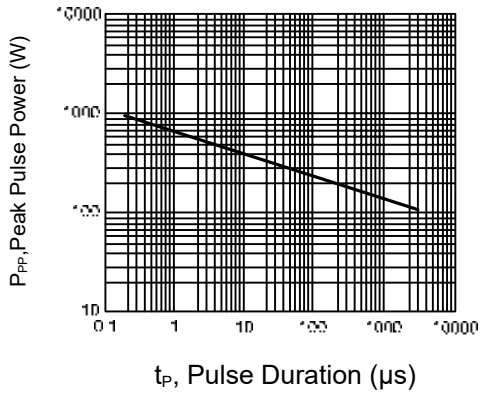


Figure 3: Non-Repetitive Peak Pulsevs. Pulse Time

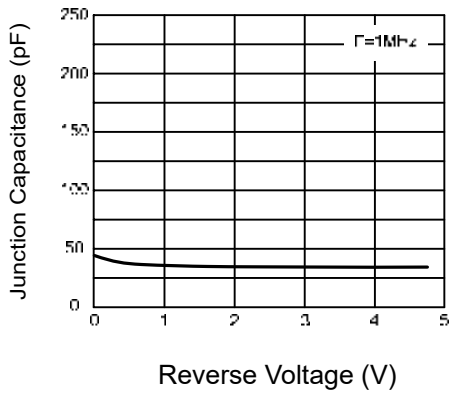
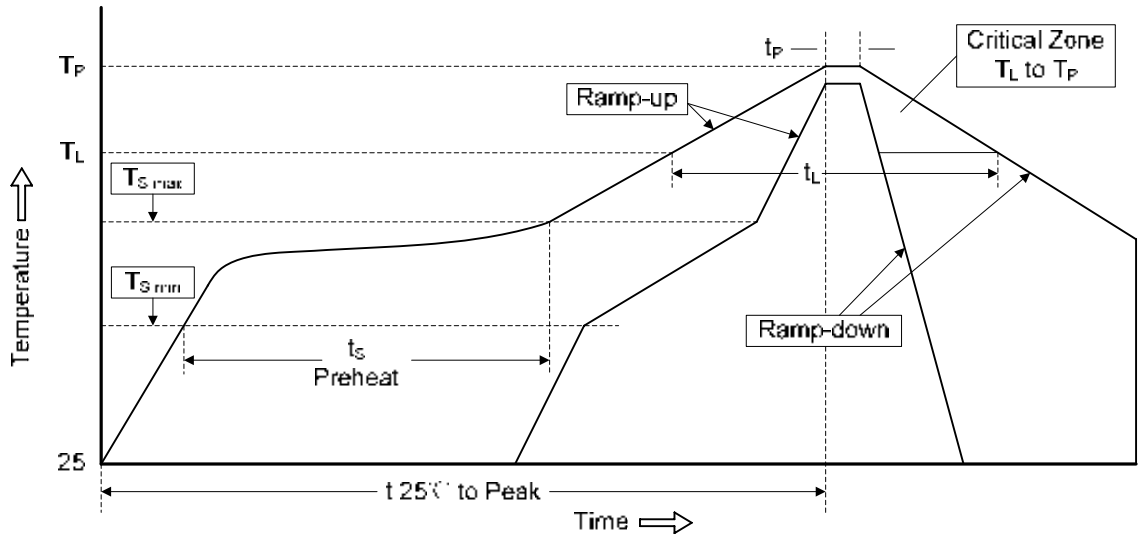


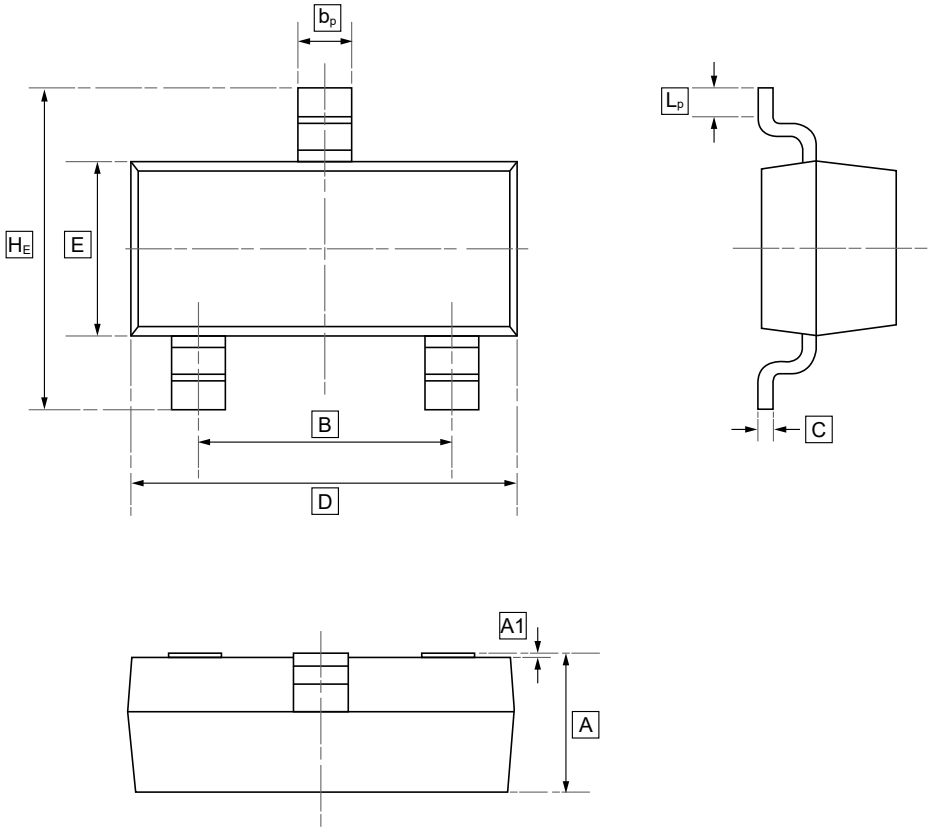
Figure 4: Normalized Capacitance vs. Reverse Voltage

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



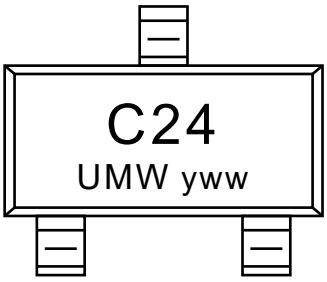
9.SOT-23 Package Outline Dimensions



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

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.

When applying our products, please do not exceed the maximum rated values, as this may affect the reliability of the entire system. Under certain conditions, any semiconductor product may experience faults or failures. Buyers are responsible for adhering to safety standards and implementing safety measures during system design, prototyping, and manufacturing when using our products to prevent potential failure risks that could lead to personal injury or property damage.

Unless explicitly stated in writing, UMW products are not intended for use in medical, life-saving, or life-sustaining applications, nor for any other applications where product failure could result in personal injury or death. If customers use or sell the product for such applications without explicit authorization, they assume all associated risks.

When reselling, applying, or exporting, please comply with export control laws and regulations of China, the United States, the United Kingdom, the European Union, and other relevant countries, regions, and international organizations.

This document and any actions by UMW do not grant any intellectual property rights, whether express or implied, by estoppel or otherwise. The product names and marks mentioned herein may be trademarks of their respective owners.