# 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.

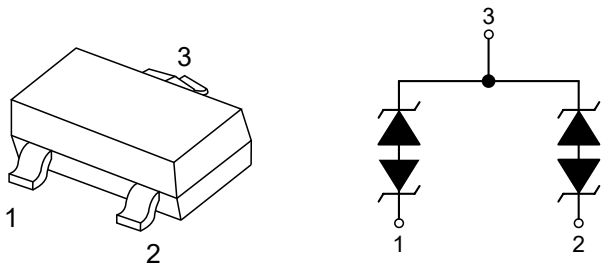
## 2.Applications

- 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<br>Between I/O pins and GND | | 40 | | pF |

## 7.Typical characteristic

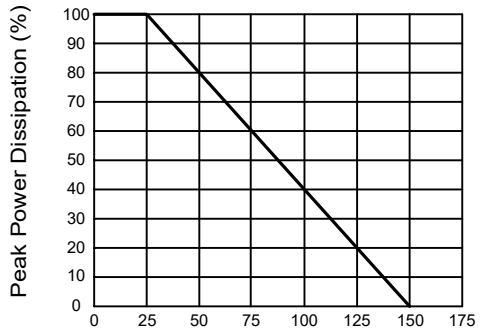



Figure 1: Power Derating Curve

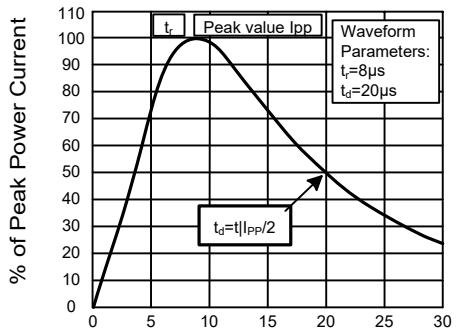



Figure 2: Pulse Waveforms

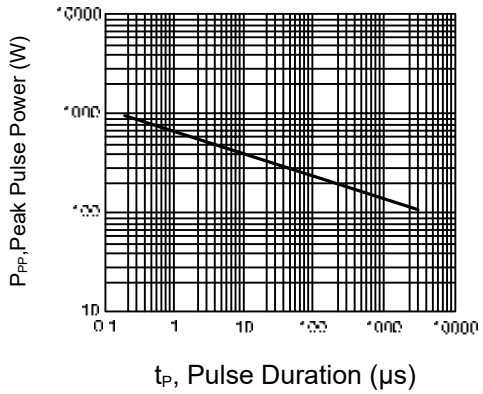



Figure 3: Non-Repetitive Peak Pulsevs. Pulse Time

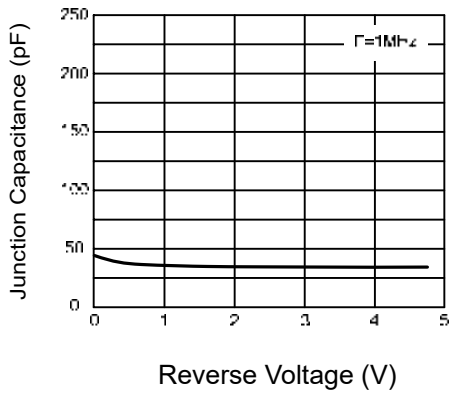
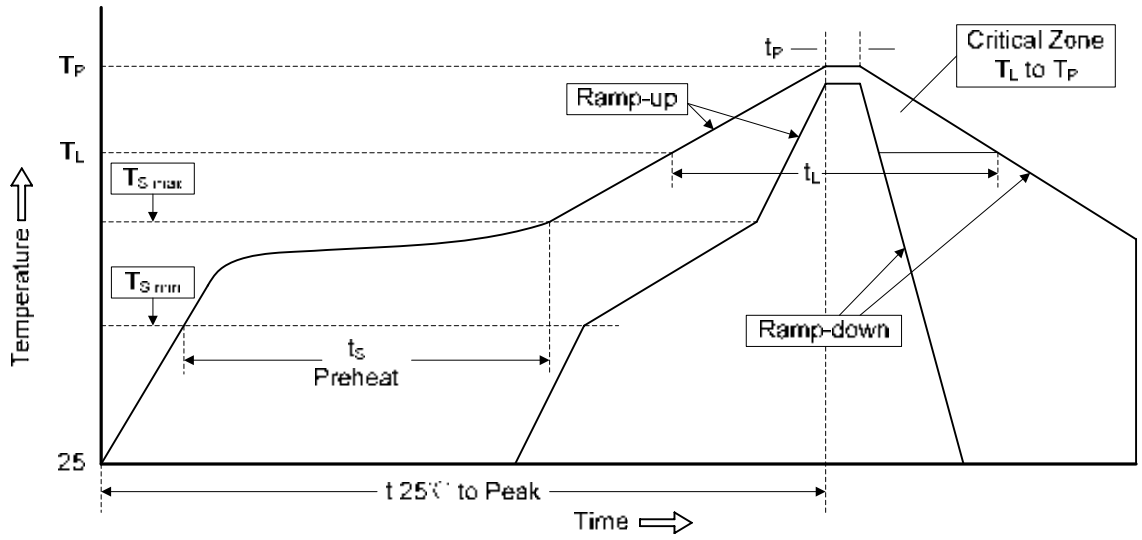


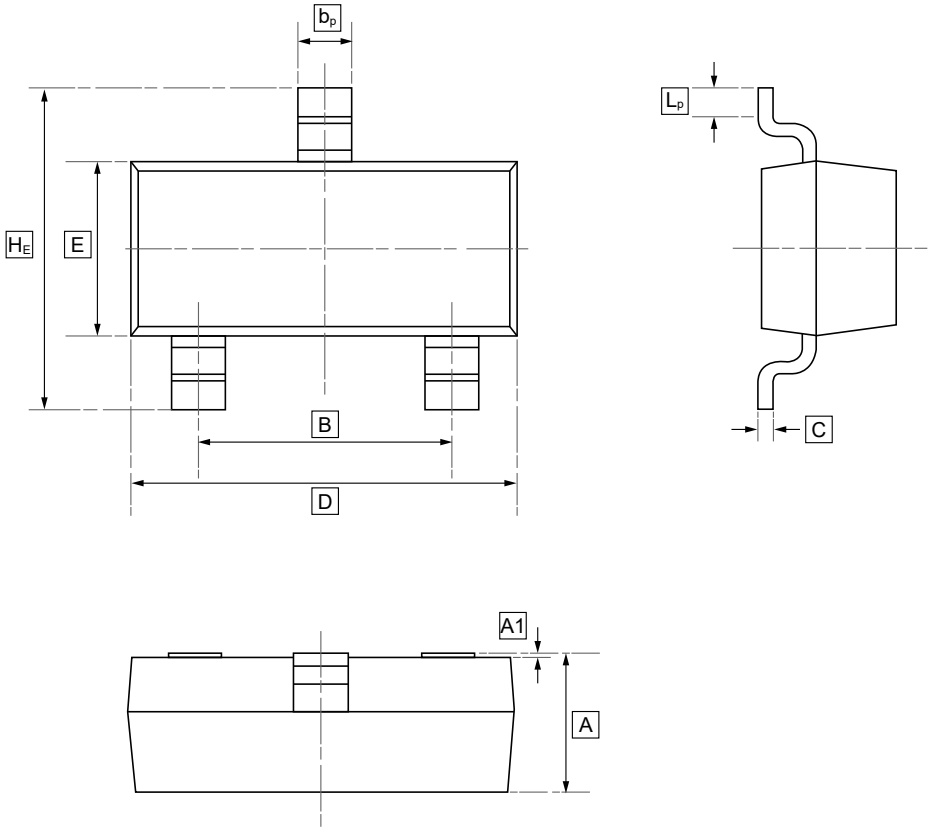

Figure 4: Normalized Capacitance vs. Reverse Voltage

## 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 |



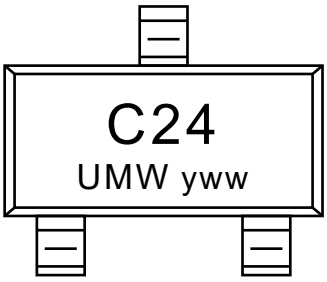
## 9.SOT-23 Package Outline Dimensions




**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

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