

# DATA SHEET

**ELECTROSTATIC DISCHARGE  
PROTECTION DEVICES**

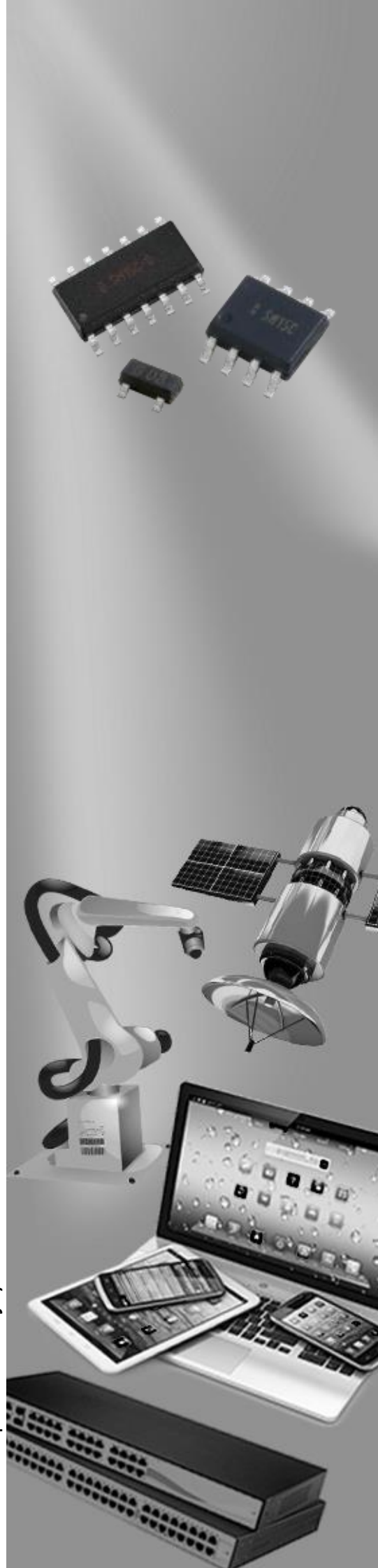
**INDUSTRIAL / CONSUMER**

UDS08A(C)24L04

RoHS compliant & Halogen free



Product specification—July 04, 2023 V.2



## Electrostatic Discharged Protection Devices (ESD) Data Sheet

### Description

UDS08A24L04/ UDS08C24L04 has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by electrostatic discharge (ESD), electrical fast transients (EFT) and lightning.

The ultra low capacitance array configuration of the series allows the user to protect four high-speed data or I/O lines. The high surge capability makes the series suitable for telecommunication systems operating in harsh transient environments.

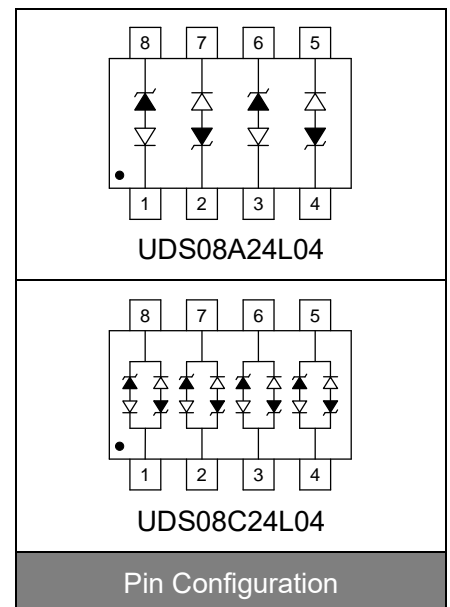


Contact :  $\pm 30\text{kV}$   
Air :  $\pm 30\text{kV}$



### Features

- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance
- SOIC-08 surface mount package
- Protects four I/O lines
- Peak power dissipation of 300W under 8/20 $\mu\text{s}$  waveform
- Working voltage: 24V
- Low leakage current
- Low operating and clamping voltages
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Solder reflow temperature: Pure Tin-Sn, 260~270 $^{\circ}\text{C}$
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020
- Marking: UDS08A24L04: B A24-4  
UDS08C24L04: B C24-4



### Applications

- USB interface
- Personal digital assistants (PDA)
- Serial ATA protection
- Digital visual interface (DVI)
- Wireless system devices
- Handhelds and notebooks
- Digital cameras
- RF interface

### Maximum Ratings

Rating	Symbol	Value	Unit
ESD voltage (Contact discharge)	$V_{\text{ESD}}$	$\pm 30$	kV
ESD voltage (Air discharge)		$\pm 30$	
Storage & operating temperature range	$T_{\text{STG}}, T_{\text{J}}$	-55~+150	$^{\circ}\text{C}$

**Electrical Characteristics (T<sub>J</sub>=25°C)**

Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse stand-off voltage	V <sub>RWM</sub>			24	V
Reverse breakdown voltage	V <sub>BR</sub>	I <sub>BR</sub> =1mA each I/O pins	26.7		V
Reverse leakage current	I <sub>R</sub>	V <sub>R</sub> =24V		1	μA
Clamping voltage (tp=8/20μs)	V <sub>C</sub>	I <sub>PP</sub> =1A		43	V
Clamping voltage (tp=8/20μs)	V <sub>C</sub>	I <sub>PP</sub> =5A		57	V
Peak pulse current (tp=8/20μs)	I <sub>PP</sub>			5	A
Off state junction capacitance	C <sub>J</sub>	0Vdc, f=1MHz Between I/O pins		3	pF

**Typical Characteristics Curves**

Figure 1. Power Derating Curve

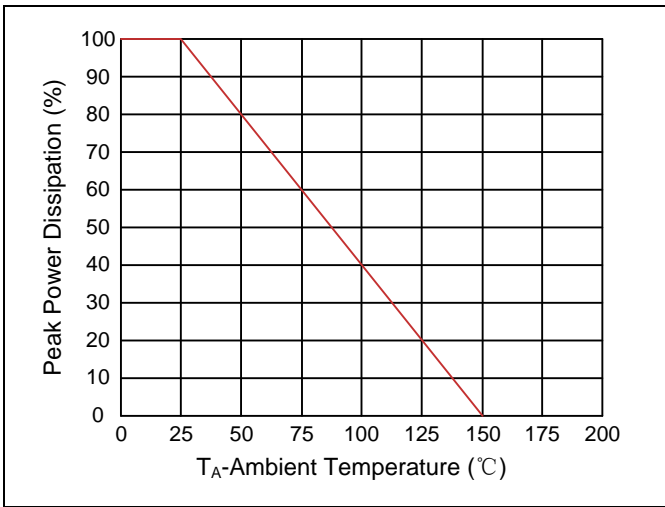


Figure 2. Pulse Waveform

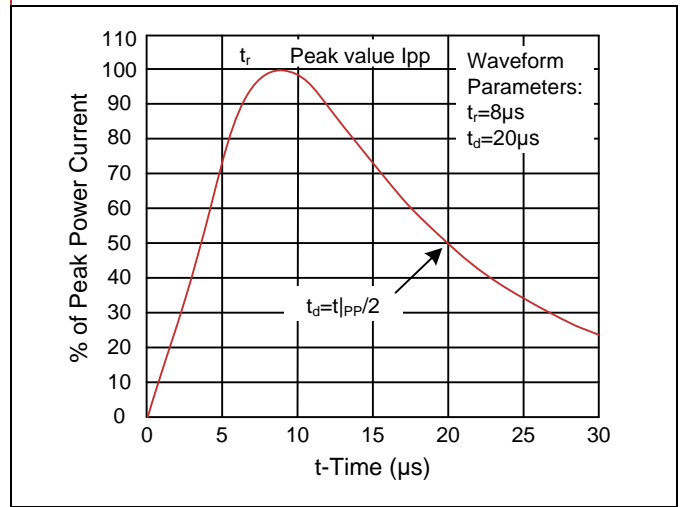


Figure 3. Non-Repetitive Peak Pulse vs Pulse Time

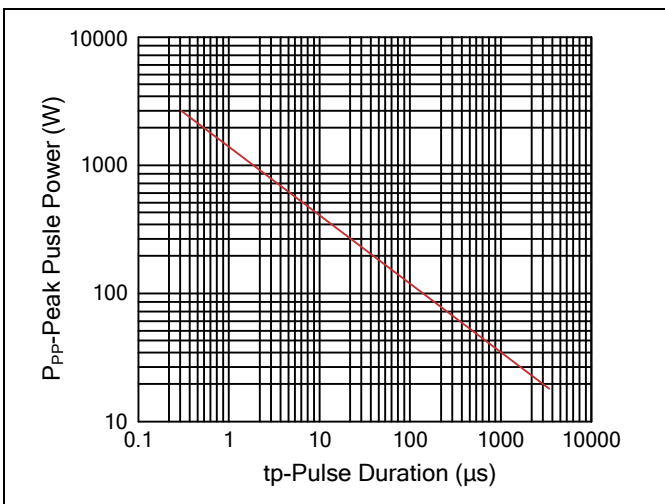
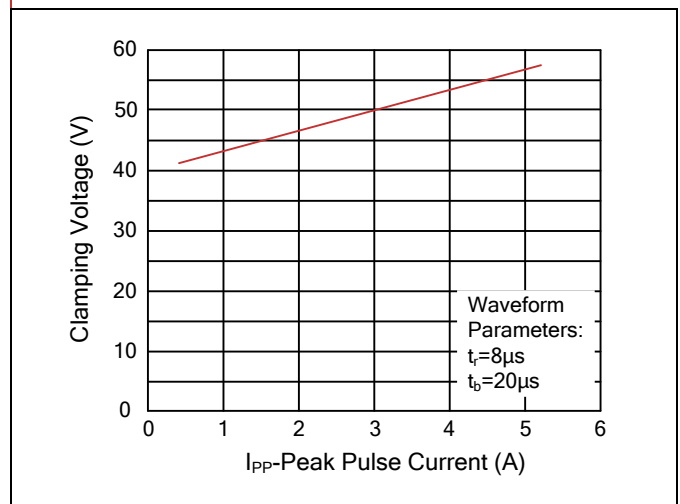
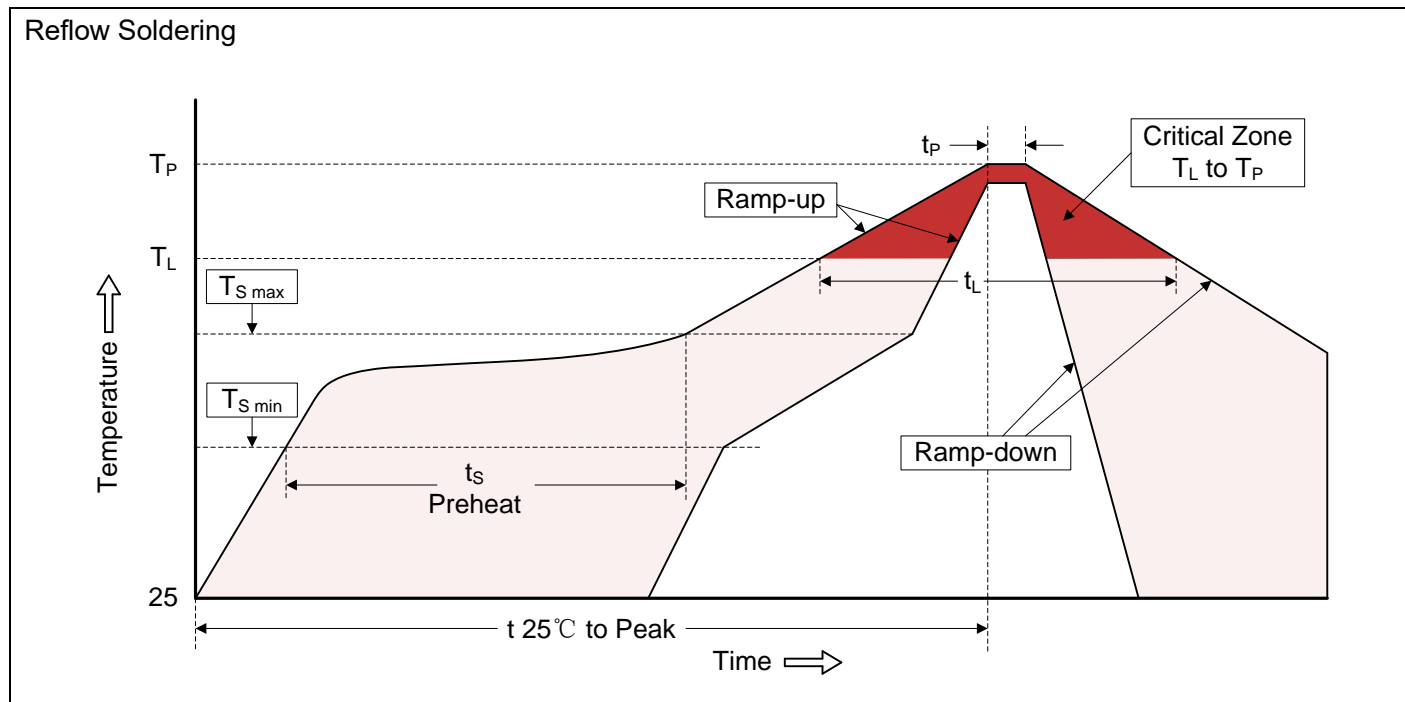


Figure 4. Clamping Voltage vs. Peak Pulse Current



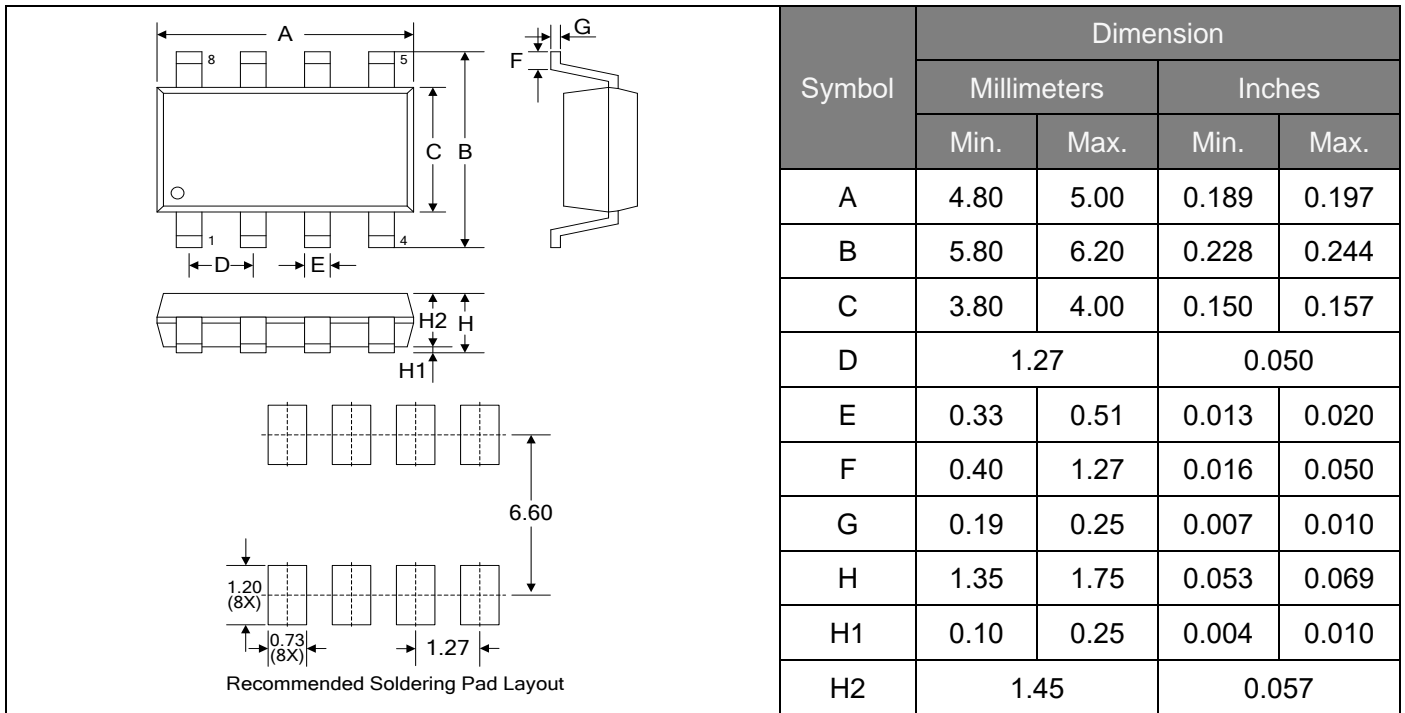
**Recommended Soldering Conditions**



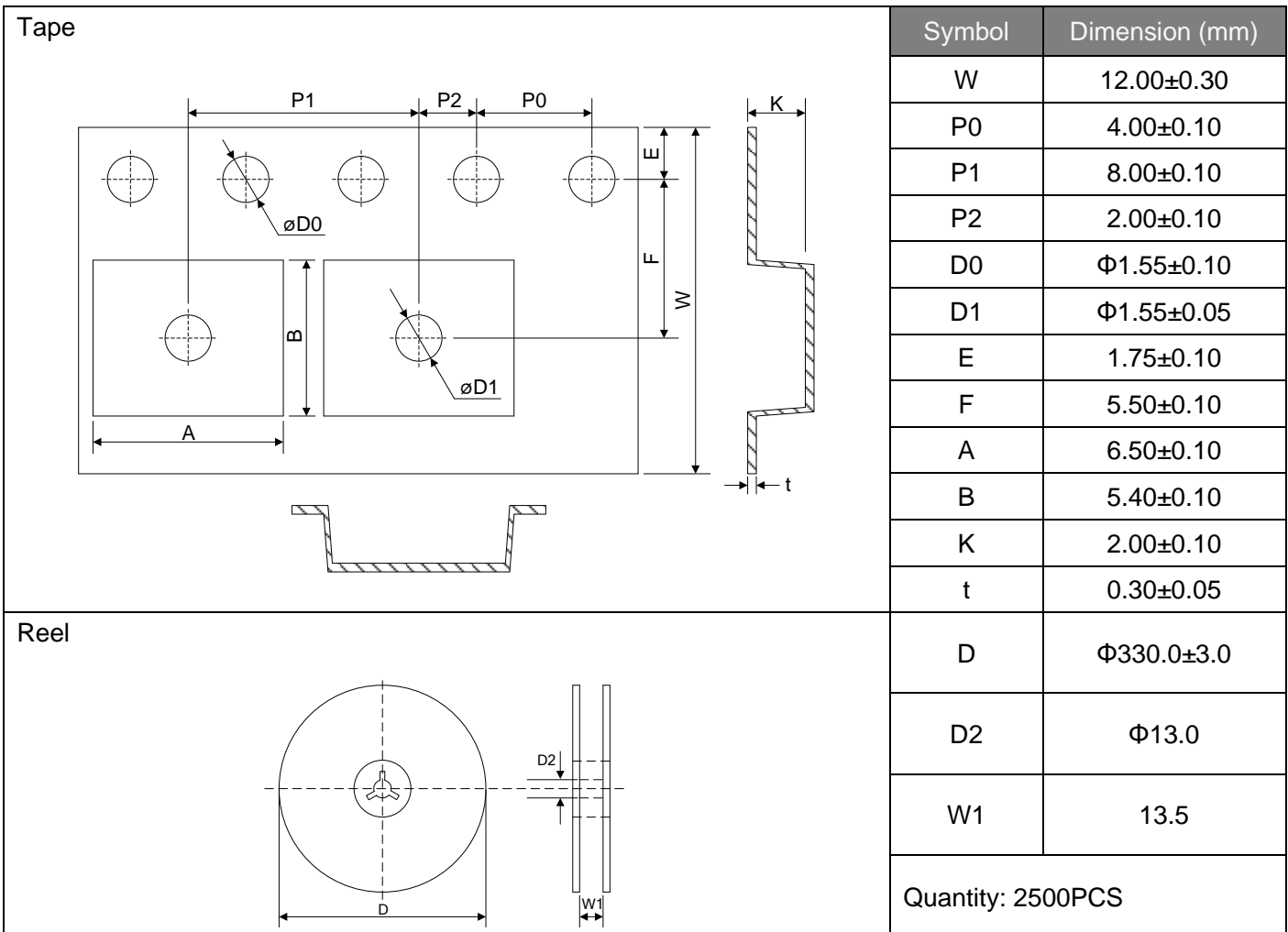
Recommended Condition

Profile Feature	Pb-Free Assembly
Average ramp-up rate ( $T_L$ to $T_P$ )	3°C/second max.
Preheat	
-Temperature Min ( $T_{S\ min}$ )	150°C
-Temperature Max ( $T_{S\ max}$ )	200°C
-Time (min to max) ( $t_s$ )	60-180 seconds
$T_{S\ max}$ to $T_L$	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature ( $T_L$ )	217°C
-Time ( $t_L$ )	60-150 seconds
Peak Temperature ( $T_P$ )	260°C
Time within 5°C of actual Peak Temperature ( $t_P$ )	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

**Dimensions (SOIC-08)**



**Packaging**



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