Electrostatic Discharged Protection Devices (ESD) Data Sheet

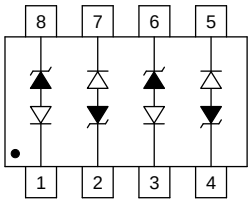
Description

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.

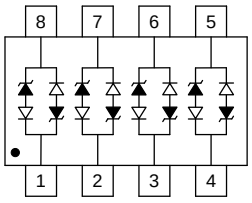
Contact : ±30kV
Air : ±30kV

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 8/20μs 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℃
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020
- Marking: UDS08A24L04: B A24-4
  UDS08C24L04: B C24-4



UDS08A24L04



UDS08C24L04

Pin Configuration

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
Peak pulse current (tp=8/20μs)	I_{PP}	5	A
ESD voltage (Contact discharge)	V_{ESD}	±30	kV
ESD voltage (Air discharge)		±30	
Storage & operating temperature range	T_{STG} ,T_J	-55~+150	℃

Electrical Characteristics (T_J=25℃)

Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse stand-off voltage	V_{RWM}			24	V
Reverse breakdown voltage	V_{BR}	I_{BR}=1mA each I/O pins	26.7		V
Reverse leakage current	I_R	V_R=24V		1	μA
Clamping voltage (tp=8/20μs)	V_C	I_{PP}=1A		43	V
Clamping voltage (tp=8/20μs)	V_C	I_{PP}=5A		57	V
Off state junction capacitance	C_J	0Vdc,f=1MHz Between I/O pins		3	pF

Typical Characteristics Curves

Figure 1. Power Derating Curve

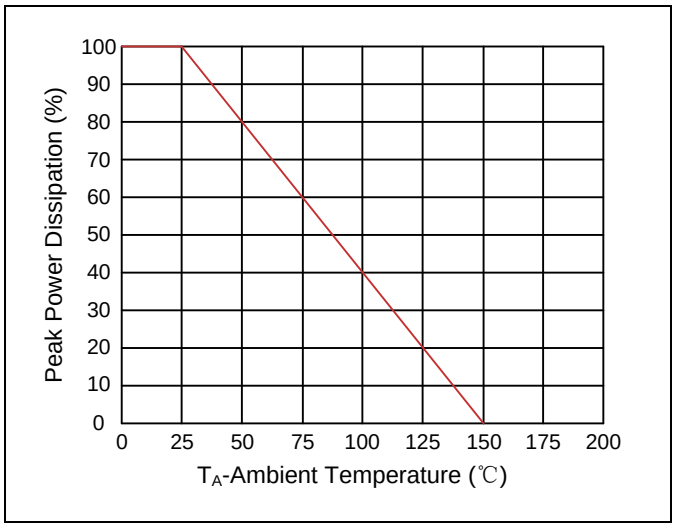


Figure 2. Pulse Waveform

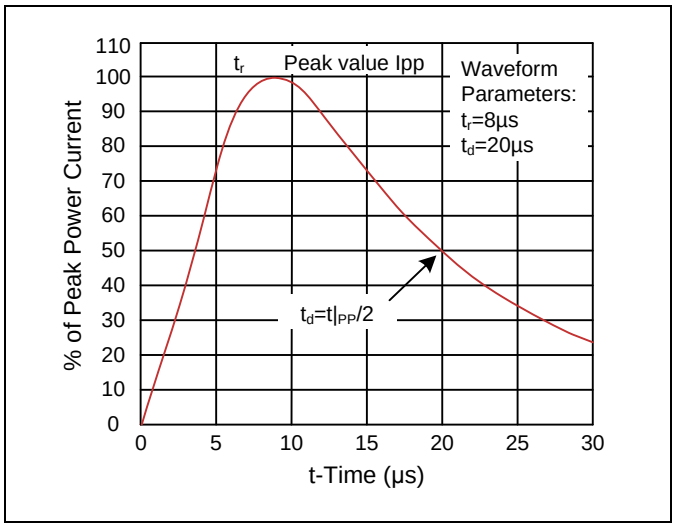


Figure 3. Non-Repetitive Peak Pulse vs Pulse Time

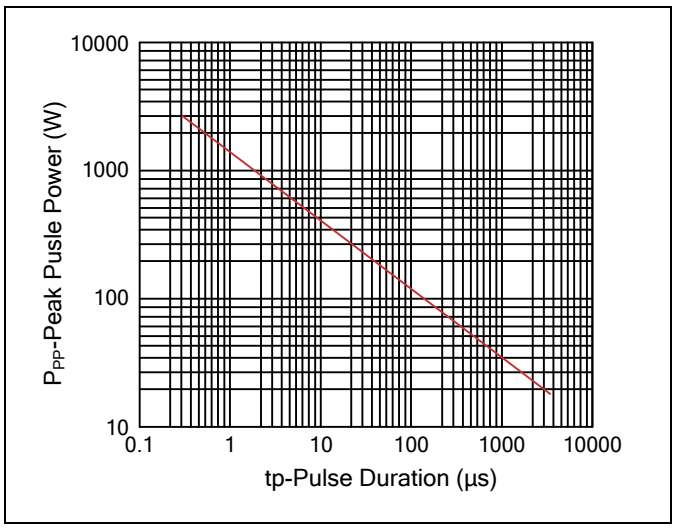
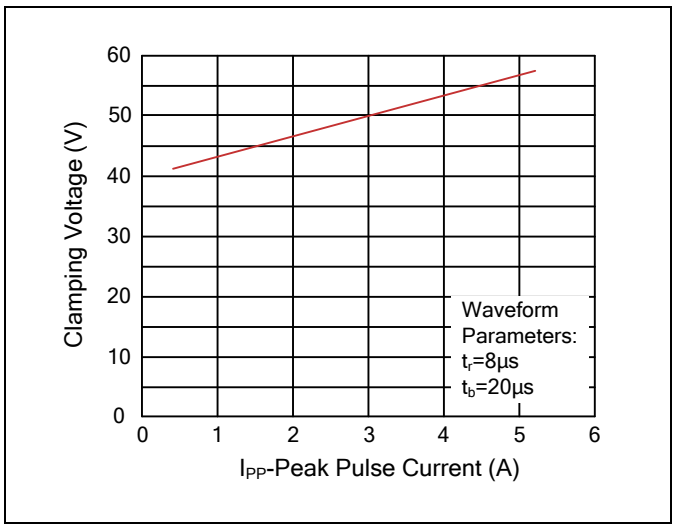
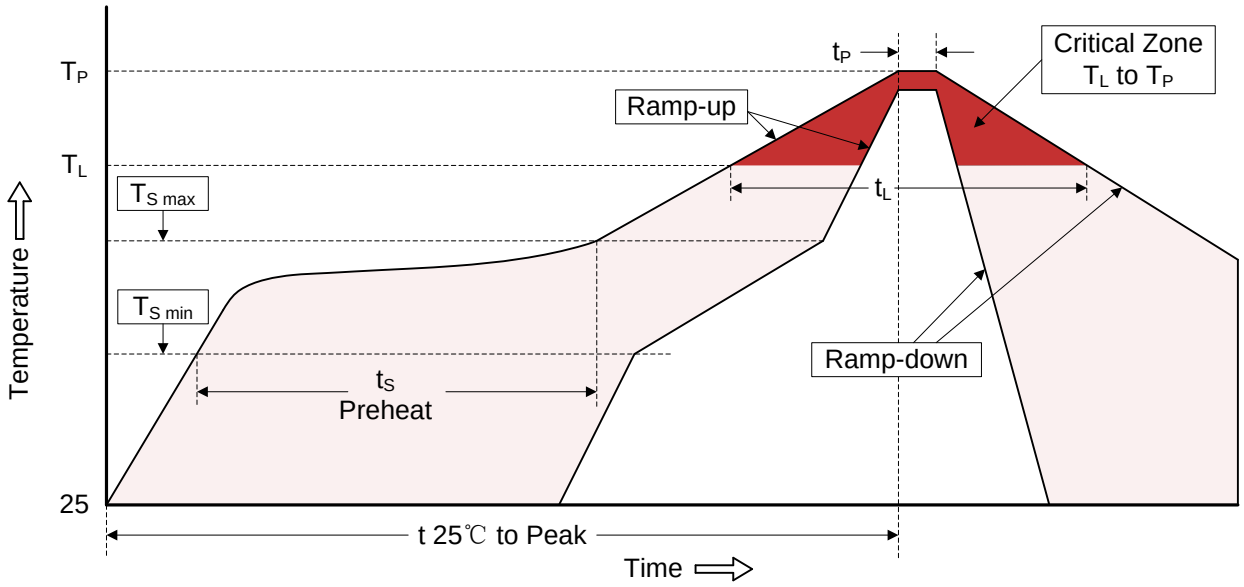


Figure 4. Clamping Voltage vs. Peak Pulse Current



Recommended Soldering Conditions

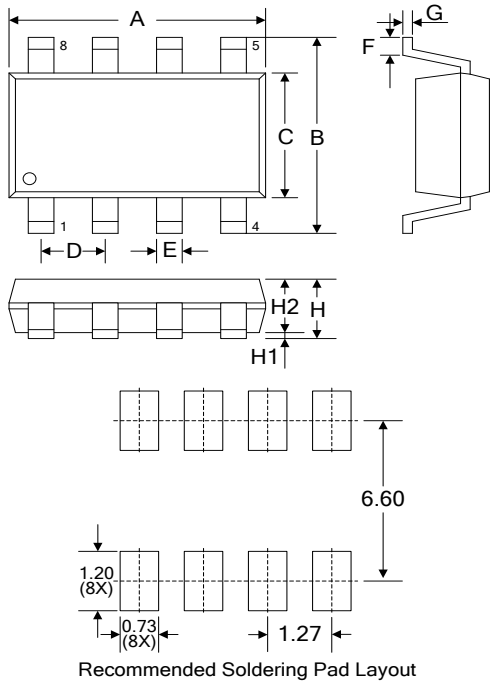
Reflow Soldering



Recommended Condition

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

Dimensions (SOIC-08)

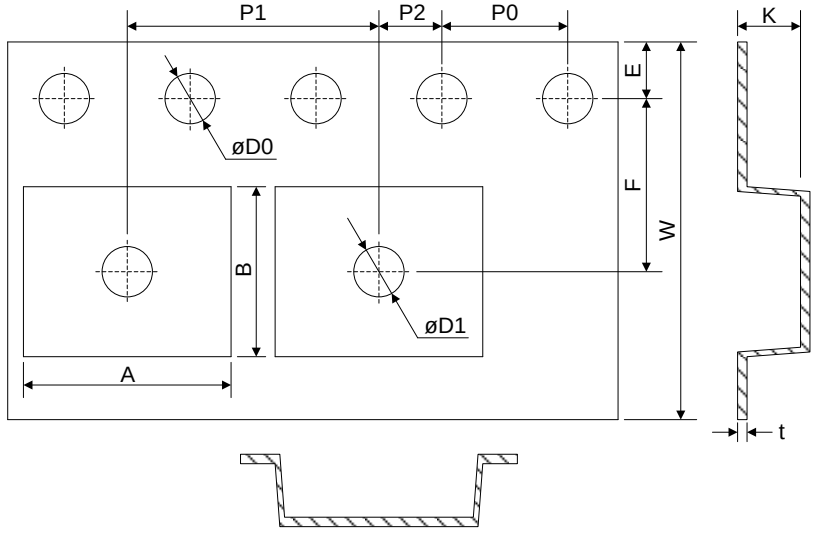


Recommended Soldering Pad Layout

Symbol	Dimension			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.80	5.00	0.189	0.197
B	5.80	6.20	0.228	0.244
C	3.80	4.00	0.150	0.157
D	1.27		0.050	
E	0.33	0.51	0.013	0.020
F	0.40	1.27	0.016	0.050
G	0.19	0.25	0.007	0.010
H	1.35	1.75	0.053	0.069
H1	0.10	0.25	0.004	0.010
H2	1.45		0.057	

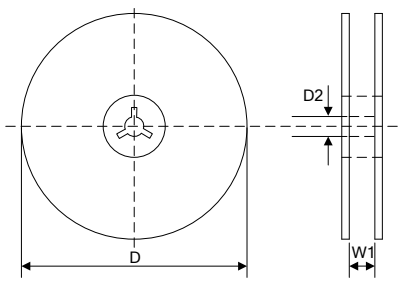
Packaging

Tape



Symbol	Dimension (mm)
W	12.00±0.30
P0	4.00±0.10
P1	8.00±0.10
P2	2.00±0.10
D0	Φ1.55±0.10
D1	Φ1.55±0.05
E	1.75±0.10
F	5.50±0.10
A	6.50±0.10
B	5.40±0.10
K	2.00±0.10
t	0.30±0.05

Reel



D	Φ330.0±3.0
D2	Φ13.0
W1	13.5

Quantity: 2500PCS