THE DATASHEET OF

LCDA12

Technical Data
Data Sheet N0284, Rev. A

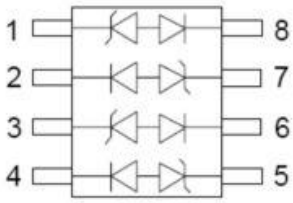
LCDA03 THRU LCDA24 TVS ARRAY SERIES

SO-8

Description

The LCDAXX series of TVS array are designed to protect sensitive electronics from damage or latch-up due to ESD and other voltage-induced transient events. Each device will protect two high-speed lines. They are bi-directed devices and may be used on lines where the signal polarities are above and below ground

Schematic & Pin Configuration



Features

- Protects 3.3, 5, 12, 15, 24 V Components
- Bidirectional
- Low capacitance for high-speed date lines
- 300 W @ 8/20 us
- Protect 2 I/O Lines
- SO-8 Packaging
- Solid-state silicon avalanche technology
- "-A" is an AEC-Q101 qualified device
- This is a Pb − Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Mechanical Characteristics

- SO-8 Surface Mount Package
- Approximate Weight: 0.1 grams
- PIN #1 Indicator: DOT on top of package
- Packaging: Tubes or Tape & Reel per EIA Standard 481

Application

- High-Speed Data Lines
- Microprocessor Based Equipment
- Universal Serial Bus(USB) Port Protection
- Notebooks, Desktops, & Servers
- Instrumentation
- LAN/WAN Equipment
- Peripherals

Absolute Maximum Ratings:

Parameter	Symbol	Value	Units
Peak Pulse Power, 8/20 μs Wave shape	P	300	W
Operating Temperature	T_J	-55 to +125	°C
Storage Temperature	T_{stg}	-55 to +150	°C
Lead Soldering Temperature	T_L	260 (10 Sec.)	°C

LCDA03 THRU LCDA24

Technical Data
Data Sheet N0284, Rev. A

Electrical Characteristics@25°C

Part Number	Stand-off Voltage Vwm (V) Max	Breakdown Voltage V_{BR} @1mA (V) Min	Clamping Voltage Vc @ 1 A (V) Max	Leakage Current I_R @ Vwm (uA) Max	Capacitance (f = 1MHz) C @ 0V (pF) Max	Temperature Coefficient of V_{BR} a(V_{BR}) mv/°C Max
LCDA03	3.3	4	7	200	5	-5
LCDA05	5.0	6	9.8	20	5	1
LCDA12	12.0	13.3	19	1	5	8
LCDA15	15.0	16.7	24	1	5	11
LCDA24	24.0	26.7	43	1	5	28

Ratings and Characteristics Curves

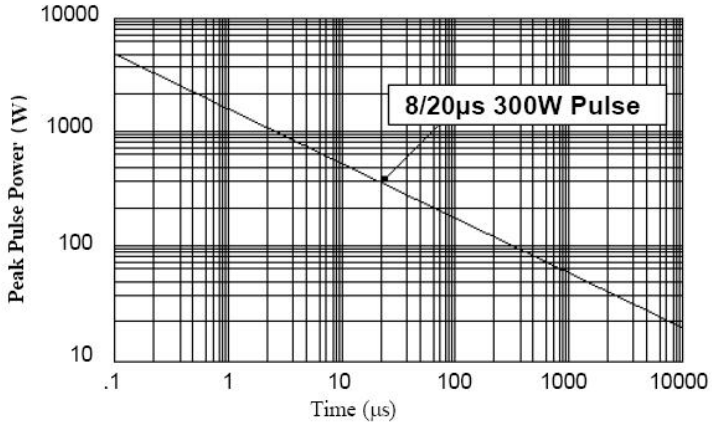


Figure 1. Peak Pulse Power Vs Pulse Time (µs)

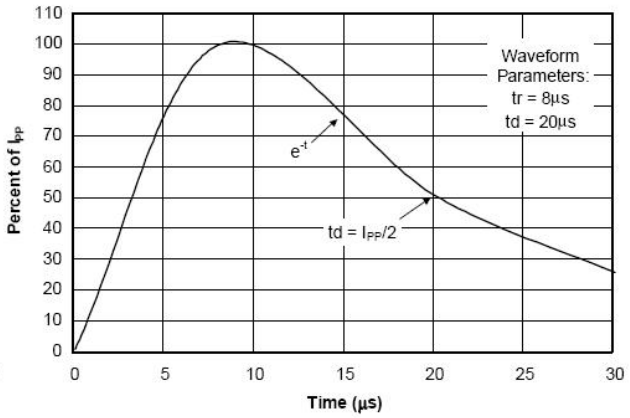


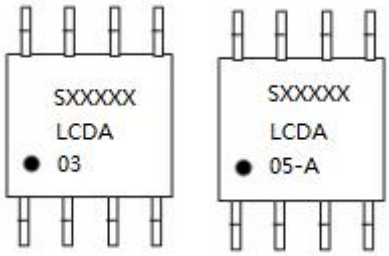
Figure 2. Pulse Wave Form

Ordering Information

Device	Package	Shipping
LCDA03 THRU LCDA24	SO-8 (Pb-Free)	2500pcs / reel
LCDA03TR THRU LCDA24TR	SO-8 (Pb-Free)	2500pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram



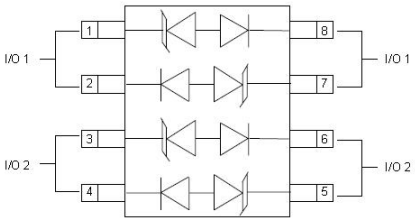
Where XXXXX is YYWWL

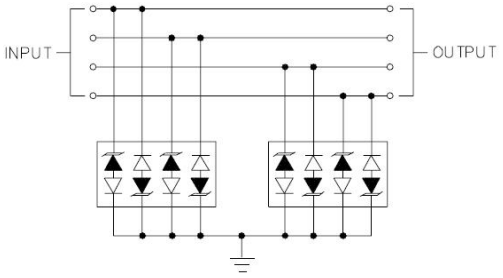
LCDA03 = Part Name
-A = AEC-Q101
S = S
YY = Year
WW = Weak
L = Lot Number

Technical Data
Data Sheet N0284, Rev. A

RoHS

Circuit Diagram





The devices are connected as follows:

✔ Pins 1 and 2 are tied together and pins 7 and 8 are tied together providing the protection circuit for one I/O line. Pins 3 and 4 are tied together and pins 5 and 6 are tied together providing the protection circuit for the second I/O line. Since the device is electrically symmetrical, either side of the connected pairs may be used to protect the lines. The other side of the pair is used to make the ground connection. The ground connections should be made directly to the ground plane for best results. The path length is kept as short as possible to reduce the effects of parasitic inductance in the board traces.
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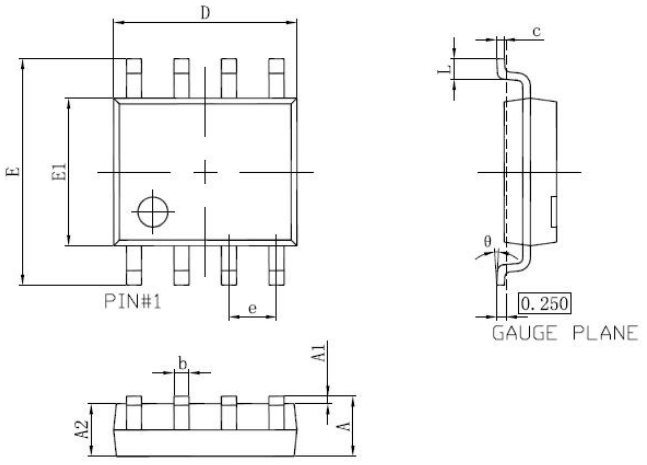
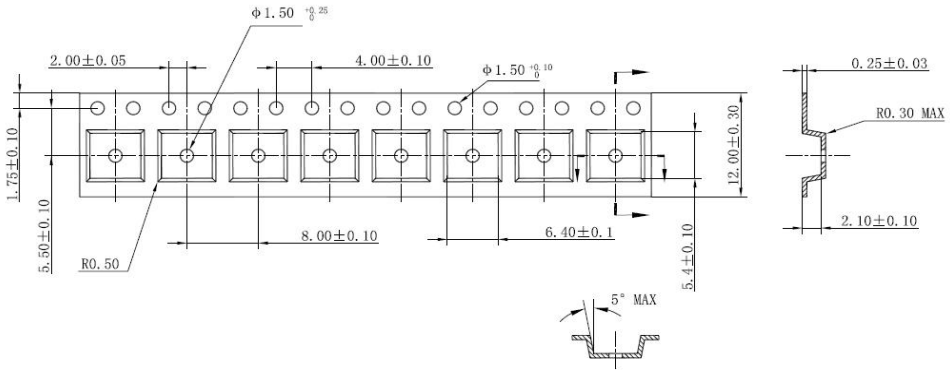
Mechanical Dimensions SO-8



SYMBOL	Millimeters		Inches	
	MIN.	MAX.	MIN.	MAX.
A	1.350	1.800	0.053	0.071
A1	0.100	0.250	0.004	0.010
A2	1.350	1.750	0.053	0.069
b	0.306	0.510	0.012	0.020
c	0.150	0.300	0.006	0.012
D	4.720	5.120	0.186	0.202
e	1.140	1.400	0.045	0.055
E	5.700	6.300	0.224	0.248
E1	3.750	4.150	0.148	0.163
L	0.300	1.270	0.012	0.050
θ	0°	8°	0°	8°

Carrier Tape Specification SO-8



LCDA03 THRU LCDA24

Technical Data
Data Sheet N0284, Rev. A

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