ASMDA15CN
5-Line 15V Bi-directional TVS Diode Array

Description

The ASMDA15CN is a 15V bi-directional TVS diodes array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The ASMDA15CN complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. It is assembled into a lead-free SO-8 package. The small size, low capacitance and high ESD surge protection make ASMDA15CN an ideal choice to protect cell phone, wireless systems, and communication equipment.

Features

- Ultra low leakage: nA level
- Operating voltage: 15V
- Low clamping voltage
- Protects up to 5 lines bi-directional lines
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 10A (8/20μs)
- RoHS Compliant

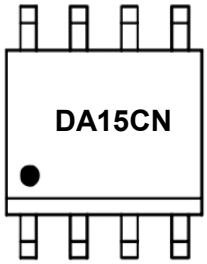
Mechanical Characteristics

- Package: SO-8
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

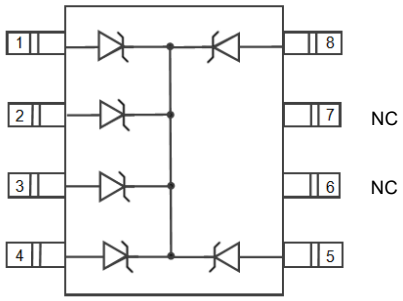
- USB Ports
- Smart Phones
- RS-232/RS-423 Data Line
- LAN/WAN Equipment
- Notebook and Desktop PC

Marking Information



DA15CN = Device Marking Code

Dimensions and Pin Configuration



Top View

Circuit and Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
ASMDA15CN	2500/Tape & Reel	7 inch

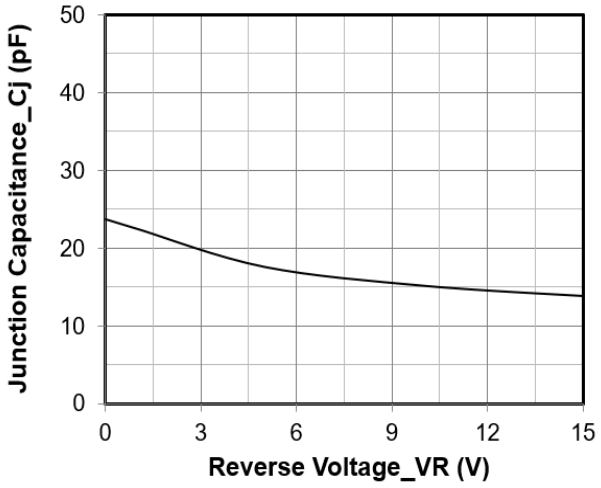
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	300	W
Peak Pulse Current (8/20μs)	I_{PP}	10	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

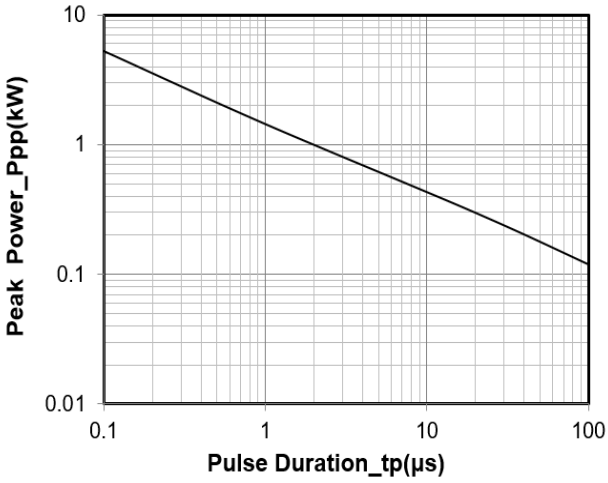
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			15	V	
Breakdown Voltage	V_{BR}	16.7			V	I_T = 1mA
Reverse Leakage Current	I_R			0.5	μA	V_{RWM} = 15V
Clamping Voltage	V_C			20	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C			30	V	I_{PP} = 10A (8 x 20μs pulse)
Junction Capacitance	C_J		25		pF	VR = 0V, f = 1MHz

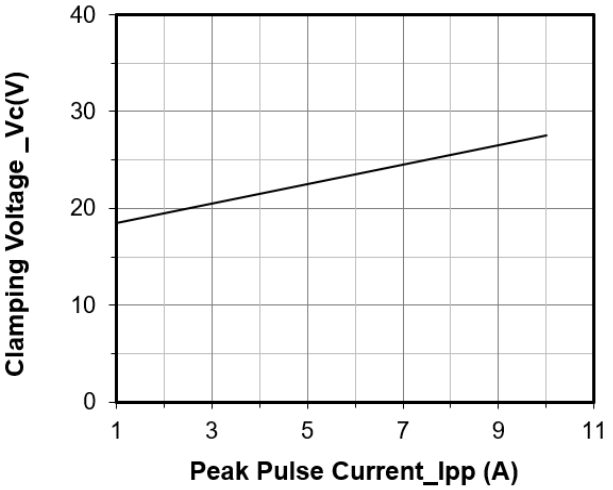
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



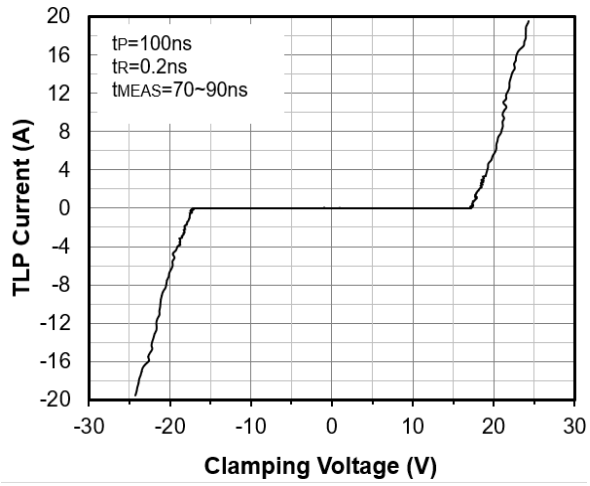
Junction Capacitance vs. Reverse Voltage



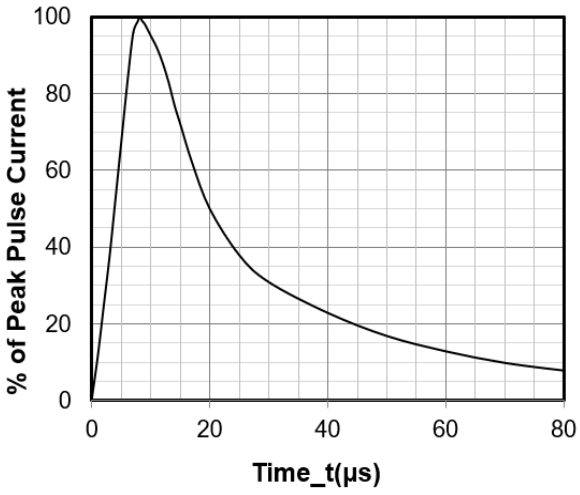
Peak Pulse Power vs. Pulse Time



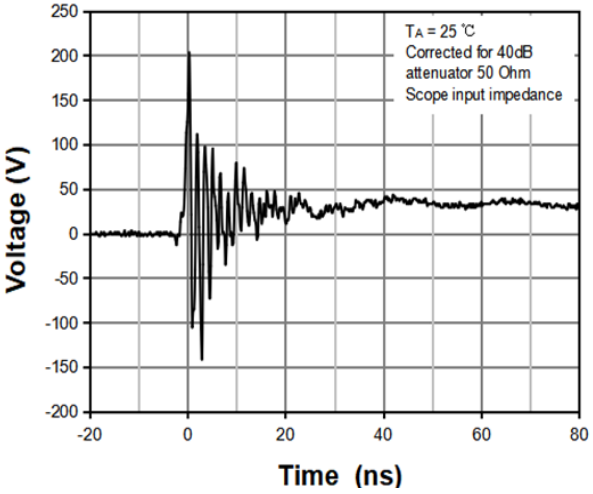
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



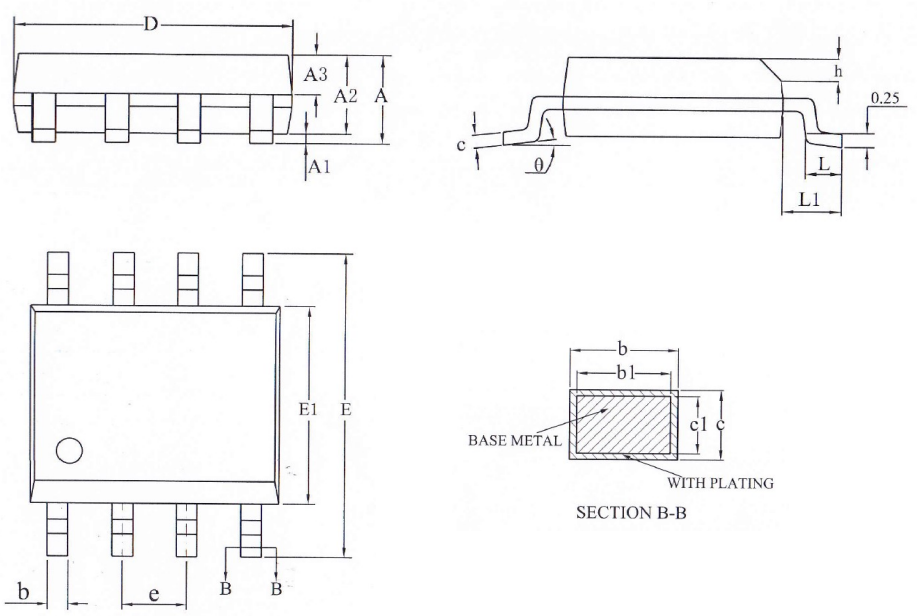
8 X 20μs Pulse Waveform



ESD Clamping Voltage

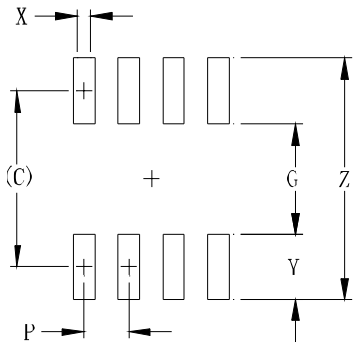
8 kV Contact per IEC61000−4−2

SO-8 Package Outline Drawing



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	-	-	1.75
A1	0.10	-	0.23
A2	1.30	1.40	1.50
A3	0.60	0.65	0.70
b	0.39	-	0.47
b1	0.38	0.41	0.44
c	0.20	-	0.24
c1	0.19	0.20	0.21
D	4.80	4.90	5.00
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
e	1.27 BSC		
h	0.25	-	0.50
L	0.50	-	0.80
L1	1.05REF		
θ1	0°	-	8°

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	(5.20)	0.205
G	3.00	0.118
P	1.27	0.050
X	0.60	0.024
Y	2.20	0.087
Z	7.40	0.291

Contact Information

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