

HESD1524-A

LIN-bus ESD Protection Diode

DESCRIPTION

HESD1524-A in a very small SOD323 Surface Mounted Device (SMD) plastic package designed to protect one automotive Local Interconnect Network (LIN) bus line from the damage caused by ElectroStatic Discharge (ESD) and other transients.

FEATURES

- ✧ IEC61000-4-2 (ESD) $\pm 30\text{KV}$ (Contact)
 $\pm 30\text{KV}$ (Air)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ 160 Watts Peak Pulse Power ($t_p=8/20\mu\text{s}$)
- ✧ Low clamping voltage
- ✧ Ultra low leakage current
- ✧ Working voltages : 15V 24V
- ✧ Qualified according to AEC-Q101

MACHANICAL DATA

- ✧ SOD-323 package
- ✧ Flammability Rating: UL 94V-0
- ✧ High temperature soldering guaranteed:
 $260^\circ\text{C}/10\text{s}$
- ✧ Packaging: Tape and Reel
- ✧ Reel size: 7 inch
- ✧ MSL 1

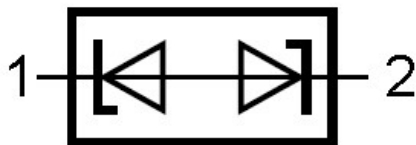
ORDERING INFORMATION

- ✧ Device: HESD1524-A
- ✧ Package: SOD-323
- ✧ Marking: **24**
- ✧ Material: Halogen free
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 3,000pcs

APPLICATIONS

- ✧ LIN-bus protection
- ✧ Automotive applications

PIN CONFIGURATION



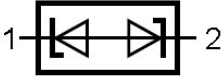
PACKAGE OUTLINE



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PINNING INFORMATION

Pin	Description	Simplified outline	Graphic symbol
1	cathode 1 (15 V)		
2	cathode 2 (24 V)		

ABSOLUTE MAXIMUM RATING

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Contact)	± 30	kV
	ESD per IEC 61000-4-2 (Air)	± 30	
P_{PP}	Peak Pulse Power (8/20 μ s)	160	W
I_{PP}	peak pulse current (8/20 μ s)	3	A
T_j	junction temperature	150	$^{\circ}\text{C}$
T_{OPT}	ambient temperature	-65~150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-65~150	$^{\circ}\text{C}$

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ELECTRICAL CHARACTERISTICS (Tamb=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage (PIN 1 to PIN 2)				15	V
	Reverse Working Voltage (PIN 2 to PIN 1)				24	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 5mA$ (PIN 1 to PIN 2)	17.1		20.5	V
		$I_T = 5mA$ (PIN 2 to PIN 1)	25.4		30.5	V
I_R	Reverse Leakage Current	$V_{RWM} = 15V$ (PIN 1 to PIN 2)			50	nA
		$V_{RWM} = 24V$ (PIN 2 to PIN 1)			50	nA
V_C	Clamping Voltage	$I_{PP} = 1A, t_p = 8/20\mu s$ (PIN 1 to PIN 2)			25	V
		$I_{PP} = 5A, t_p = 8/20\mu s$ (PIN 1 to PIN 2)			44	V
		$I_{PP} = 1A, t_p = 8/20\mu s$ (PIN 2 to PIN 1)			40	V
		$I_{PP} = 3A, t_p = 8/20\mu s$ (PIN 2 to PIN 1)			70	V
C_J	Junction Capacitance	$V_R = 0V, f = 1MHz$			30	pF
r_{dif}	Differential Resistance	$I_T = 5mA$ (PIN 1 to PIN 2)			225	Ω
		$I_T = 5mA$ (PIN 2 to PIN 1)			300	Ω

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ELECTRICAL CHARACTERISTICS CURVE

Fig 1 8/20 μ s Waveform per IEC61000-4-5

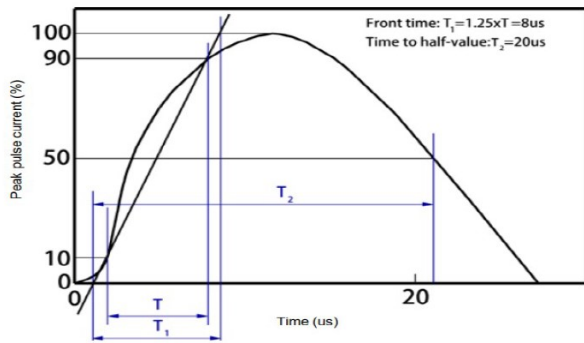


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2

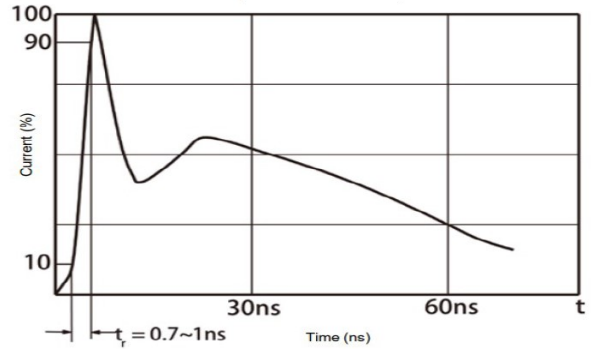


Fig 3 Voltage vs Capacitance

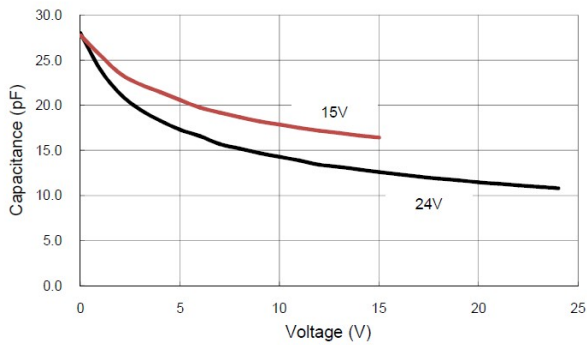
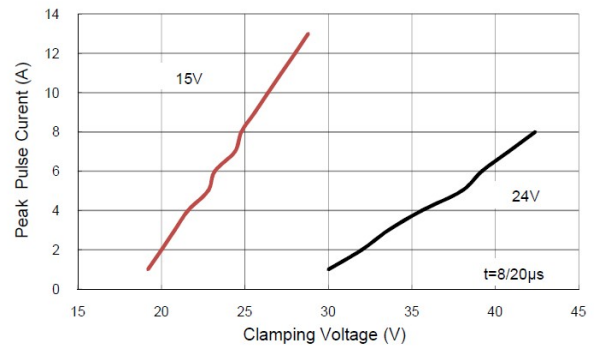


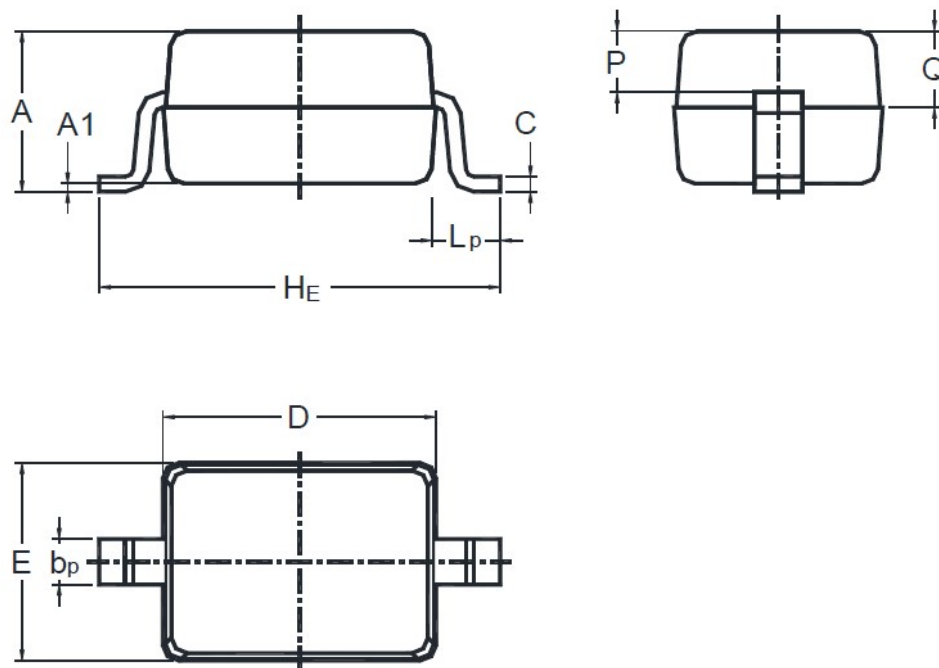
Fig 4 Clamping Voltage vs Peak Pulse Current



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SOD-323 PACKAGE OUTLINE DIMENSIONS



UNIT	A	A ₁	b _p	C	D	E	H _E	L _p	Q	P
mm	1.1 0.8	0.1 0	0.4 0.25	0.18 0.09	1.8 1.6	1.35 1.15	2.8 2.3	0.5 0.1	0.5 0.3	0.4 0.3