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ESD



TVS



TSS



MOV



GDT



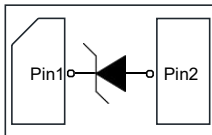
PLED

Product data sheet

www.msksemi.com



DFN1610-2L



Circuit diagram

Descriptions

The ESD56201DXX-MS is a transient voltage suppressor designed to protect power interfaces. It is suitable to replace multiple discrete components in portable electronics.

The ESD56201DXX-MS is specifically designed to protect power lines.

The ESD56201DXX-MS is available in DFN1610-2L package. Standard products are Pb-free and Halogen-free.

Features

- Reverse stand-off voltage: 4.85V ~ 24V
- Surge protection according to IEC61000-4-5 see Table 4
- ESD protection according to IEC61000-4-2 ±30kV (contact and air discharge)
- Low clamping voltage
- Solid-state silicon technology

Applications

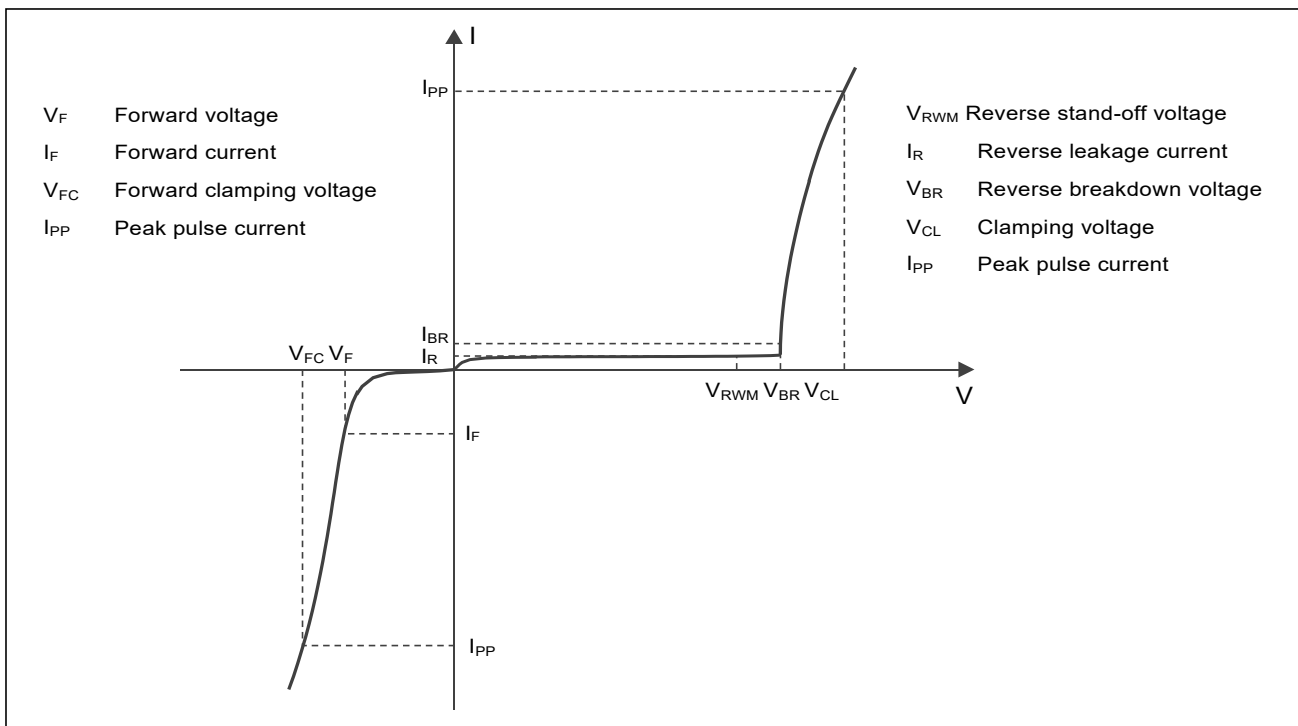
- Power supply protection
- Power management

Order information

Device	Package	Shipping	Marking
ESD56201D04-MS	DFN1610-2L	3000/Tape&Reel	D4*
ESD56201D05-MS	DFN1610-2L	3000/Tape&Reel	I*
ESD56201D10-MS	DFN1610-2L	3000/Tape&Reel	J*
ESD56201D12-MS	DFN1610-2L	3000/Tape&Reel	K*
ESD56201D15-MS	DFN1610-2L	3000/Tape&Reel	L*
ESD56201D18-MS	DFN1610-2L	3000/Tape&Reel	S*
ESD56201D20-MS	DFN1610-2L	3000/Tape&Reel	N*

Parameter	Symbol	Rating	Unit
Peak pulse power (tp = 8/20μs)	P _{pk}	1800	W
ESD according to IEC61000-4-2 air discharge	V _{ESD}	±30	kV
ESD according to IEC61000-4-2 contact discharge		±30	
Junction temperature	T _J	125	°C
Operating temperature	T _{OP}	-40~85	°C
Lead temperature	T _L	260	°C
Storage temperature	T _{STG}	-55~150	°C

Electrical characteristics (T_A = 25°C, unless otherwise noted)



Definitions of electrical characteristics

Electrical characteristics (T_A = 25°C, unless otherwise noted)

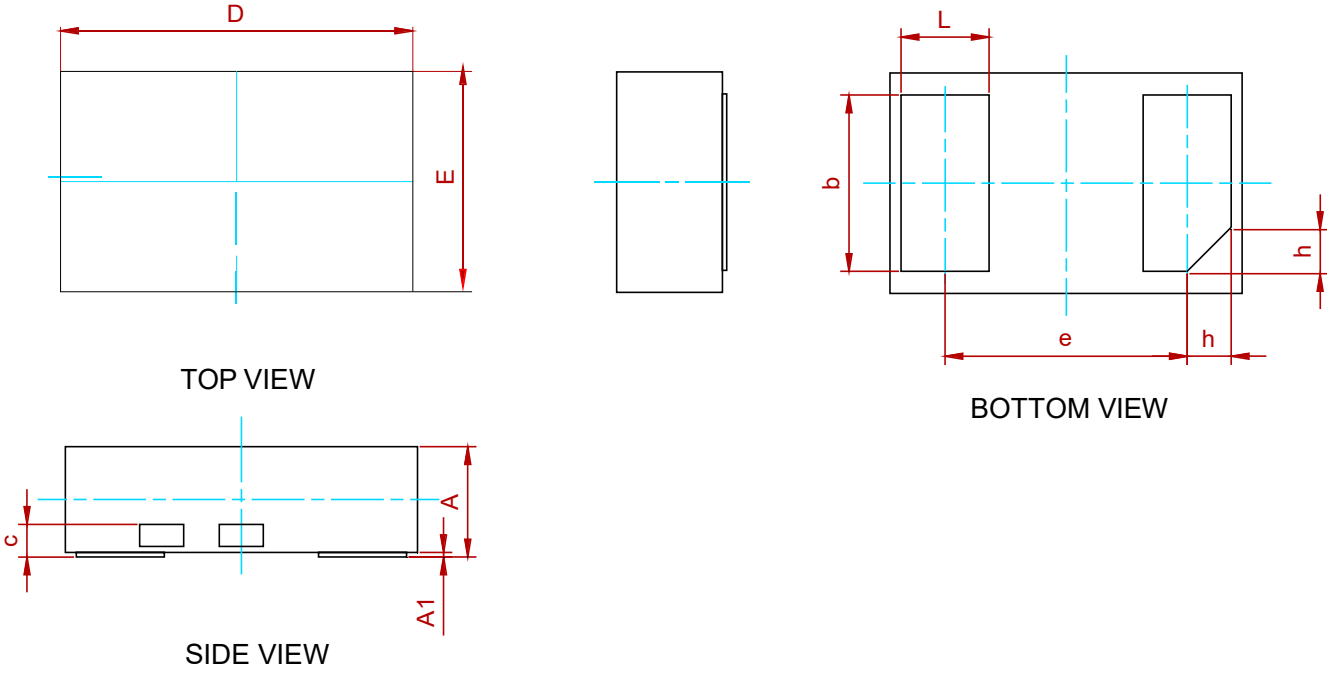
P/N	Reverse Stand-off Voltage V _{RWM} (V)	Breakdown voltage V _{BR} (V) I _{BR} = 1mA			Reverse leakage current I _{RM} (μA) at V _{RWM}		Forward voltage V _F (V) I _F = 20mA		Junction capacitance F = 1MHz, V _R =0V (pF)	
	Max	Min	Typ	Max	Typ	Max	Min	Max	Typ	Max
ESD56201D04-MS	4.85	5.2	5.7	6.2	-	5.0	0.45	1.25	1100	1300
ESD56201D05-MS	5.0	6.6	7.1	7.6	-	2.0	0.45	1.25	1050	1250
ESD56201D10-MS	10.0	10.7	11.3	12.3	-	0.1	0.45	1.25	545	650
ESD56201D12-MS	12.0	12.7	13.7	14.6	-	0.1	0.45	1.25	425	510
ESD56201D15-MS	15.0	16.0	17.5	19.0	-	0.1	0.45	1.25	325	350
ESD56201D18-MS	18.0	19.2	21.1	23.0	-	0.1	0.45	1.25	270	300
ESD56201D20-MS	20.0	21.4	23.2	25.0	-	0.1	0.45	1.25	250	275

P/N	Rated peak pulse current I _{PP} (A) ¹⁾²⁾	Clamping voltage V _{CL} (V) at I _{PP} (A) ¹⁾²⁾	
	Max.	Typ.	Max.
ESD56201D04-MS	120	10.5	12.0
ESD56201D05-MS	100	11.0	13.0
ESD56201D10-MS	86	17.5	20.0
ESD56201D12-MS	75	19.5	22.0
ESD56201D15-MS	60	27.0	30.0
ESD56201D18-MS	50	32.0	35.0
ESD56201D20-MS	45	35.0	38.0

Notes:

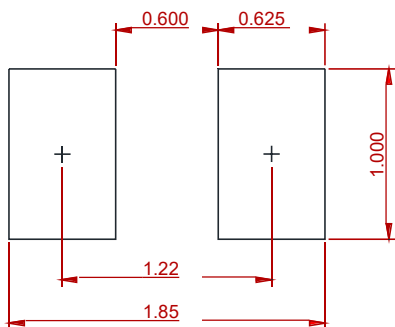
- 1 Non-repetitive current pulse, according to IEC61000-4-5. (8/20μs current waveform)
- 2 Non-repetitive current pulse, according to IEC61000-4-2.
- 3 Measured from pin 1 to pin 2.

PACKAGE MECHANICAL DATA



Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
c	0.15 Ref.		
b	0.75	0.80	0.85
L	0.35	0.40	0.45
D	1.55	1.60	1.65
E	0.95	1.00	1.05
e	1.10 BSC		
h	0.20 Ref.		

Recommend PCB Layout (Unit: mm)



Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

REEL SPECIFICATION

P/N	PKG	QTY
ESD56201DXX-MS	DFN1610-2L	3000

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