

General Description

The ESD56151W04 is designed to protect voltage sensitive components from damage or latch-up due to surge current. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to surge current protection for board level. Because of its small size and bi-directional design, it is ideal for use in cellular phones and portable applications that require audio line protection.

Specification Features

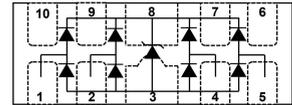
- Miniaturized packaging size suitable for high-density applications
- 4-Channel uni-directional ESD diode
- Standard Capacitance 0.65 pF
- Low Clamping Voltage: $V_C=15V@I_{PP}=4.5A$
- Reverse Working (Stand-off) Voltage: 5.0V
- Low Leakage current
- Response Time is Typically < 1 ns

Application

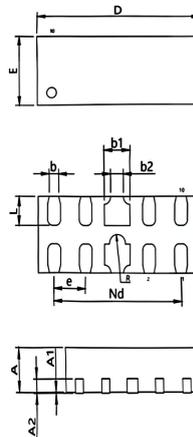
- Smartphones, tablet computers
- Blu-ray and DVD recorders and players
- Video equipment and accessories



DFN2510-10L (Pb-Free)



Schematic Diagram



DFN2510-10L

	Min.(mm)	Typ.(mm)	Max.(mm)
D	2.45	2.50	2.55
E	0.95	1.00	1.05
b1	0.35	0.40	0.45
b2	0.15	0.20	0.25
b	0.10	0.15	0.20
L	0.33	0.38	0.43
Nd	2.00bsc		
e	0.59bsc		
R	0.125bsc		
A	0.45	0.50	0.55
A1	0.152ref		
A2	-	0	0.05

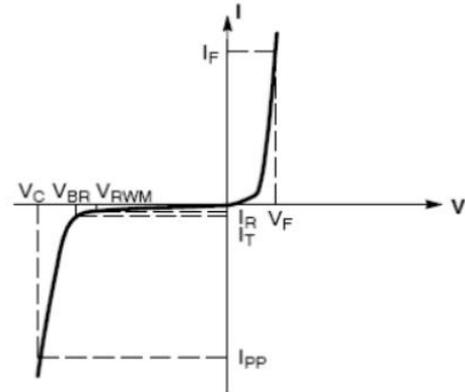
Absolute Maximum Rating

Rating	Symbol	Value	Unit
Peak pulse power ($t_p = 8/20\mu s$)	P_{PK}	± 30	kV
ESD according to IEC61000-4-2 air discharge	V_{ESD}	2800	W
ESD according to IEC61000-4-2 contact discharge		-40 to +85	°C
Operating Temperature Range	T_J	-55 to +150	
Storage temperature	T_{STG}	260	°C

ESD5304D

Characteristics($T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
P_{PK}	Peak Power Dissipation
C	Max. Capacitance @ $V_R = 0$ and freq.=1 MHz



Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RW}				5.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6.0			V
Forward Voltage	V_F	$I_F=15\text{mA}$			1.2	V
Reverse Leakage Current	I_R	$V_{RWM}=5.0\text{V}$			100	nA
Clamping Voltage	V_C	$I_{PP}=1.0\text{A}$, $t_p=8/20\text{us}$			10	V
Clamping Voltage	V_C	$I_{PP}=4.5\text{A}$, $t_p=8/20\text{us}$			15	V
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$, Any I/O to Ground		0.45	0.65	pF
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$, between I/O pins		0.25	0.35	pF