

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

ST0561D4-MS

Product specification

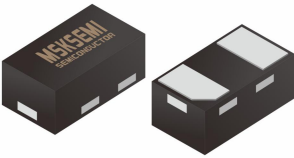
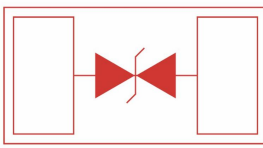
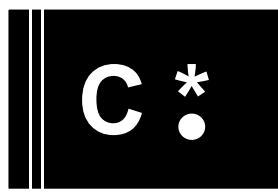
Features

- Capacitance: 15pF(typ.)
- Reverse Working Voltage: 5V
- IEC 61000-4-2 (ESD Air): $\pm 25\text{KV}$
IEC 61000-4-2 (ESD Contact): $\pm 25\text{KV}$
IEC 61000-4-5 (Lightning 8/20 μs): 8A

Applications

- Smart Phone and Tablet PC
- TV and Set Top Box
- Wearable Devices
- PDA

Reference News

DFN1006	Schematic Diagram	Marking
		

Limiting Values($T_A = 25\text{ }^\circ\text{C}$, unless otherwise specified)

Symbol	Parameter	Conditions	Min	Max	Unit
V_{ESD}	Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	-	± 25	kV
		IEC 61000-4-2; Air Discharge	-	± 25	kV
P_{PP}	Peak Pulse Power	$t_p = 8/20\text{ }\mu\text{s}$	-	80	W
I_{PPM}	Rated Peak Pulse Current	$t_p = 8/20\text{ }\mu\text{s}$	-	8	A
T_A	Ambient Temperature Range	-	-55	125	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-	-55	150	$^\circ\text{C}$

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

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V_{RWM}	Reverse Working Voltage	$T_A = 25\text{ }^\circ\text{C}$	-	-	5.0	V
V_{BR}	Breakdown Voltage	$I_R = 1\text{mA}$; $T_A = 25\text{ }^\circ\text{C}$	5.6	6.5	8.4	V
I_R	Reverse Leakage Current	$V_{\text{RWM}} = 5\text{V}$; $T_A = 25\text{ }^\circ\text{C}$	-	-	0.1	μA
V_C	Clamping Voltage	$I_{\text{PP}} = 1\text{A}$, $t_p = 8/20\mu\text{s}$	-	-	6	V
		$I_{\text{PP}} = 8\text{A}$, $t_p = 8/20\mu\text{s}$	-	-	10	V
C_J	Junction Capacitance	$V_R = 0\text{V}$, $f = 1\text{ MHz}$	-	15	18	pF

Typical Characteristics

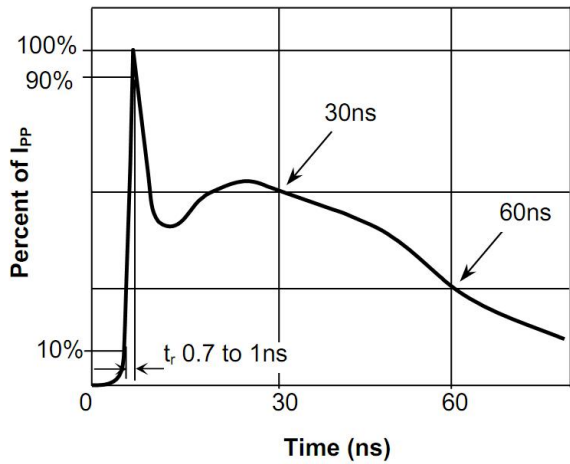


Fig.1 Pulse Waveform-ESD (IEC61000-4-2)

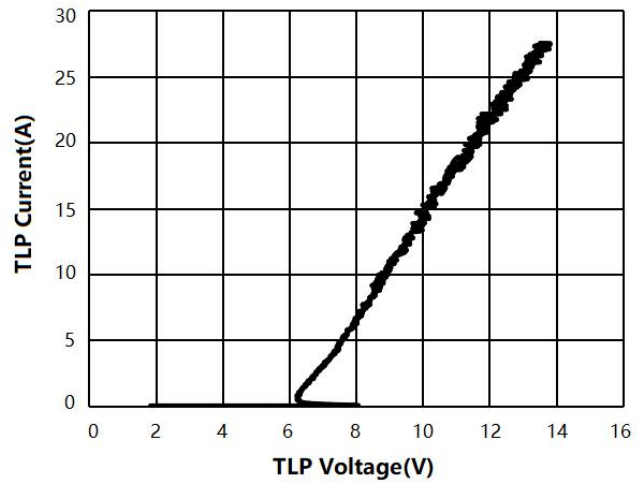


Fig.2 Transmission Line Pulse (TLP)

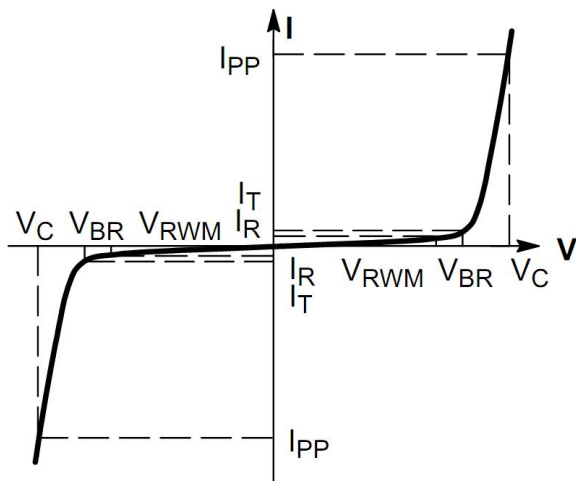


Fig.3 V-I Characteristics for Bidirectional Diode

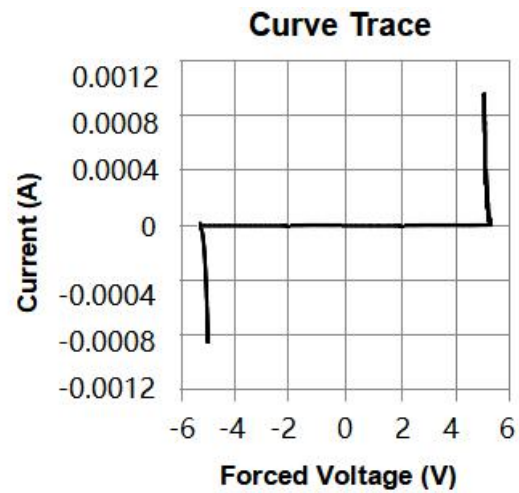


Fig.4 IV Curve

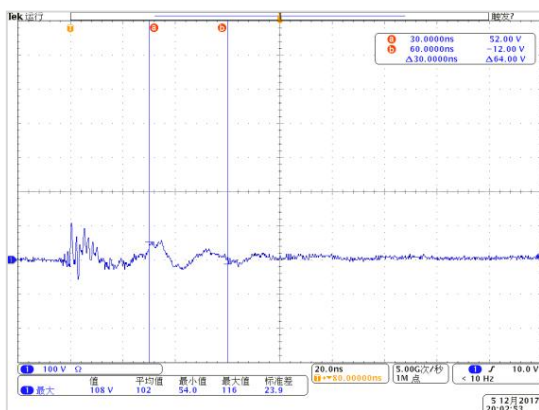


Fig.5 Clamping Voltage at IEC61000-4-2
+8kV Pulse Waveform

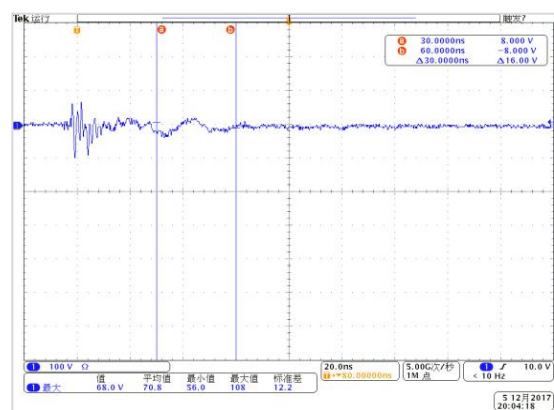
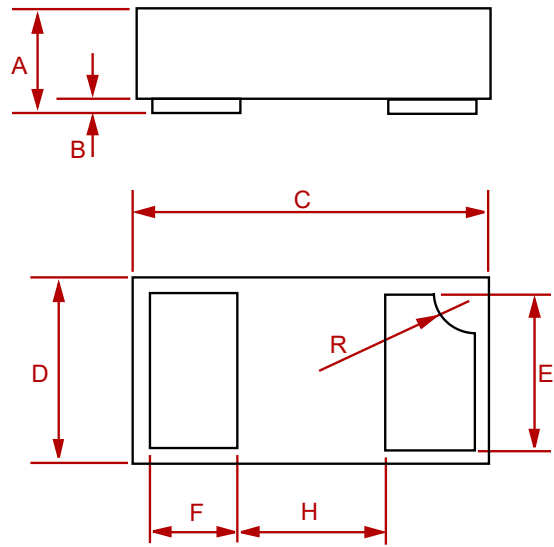


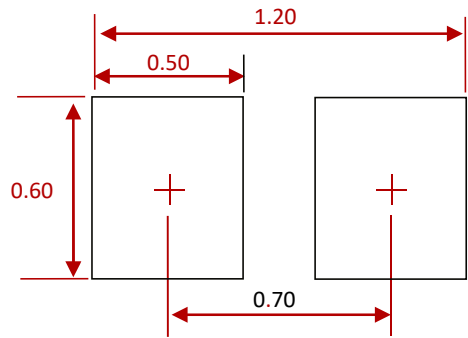
Fig.6 Clamping Voltage at IEC61000-4-2
-8kV Pulse Waveform

PACKAGE MECHANICAL DATA



Dim	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.0125	0.02	0.32	0.52
B	0.000	0.002	0.00	0.05
C	0.037	0.043	0.95	1.080
D	0.022	0.027	0.55	0.680
E	0.016	0.024	0.40	0.60
F	0.008	0.012	0.20	0.30
H	0.015Typ.		0.40Typ.	
R	0.001	0.005	0.05	0.15

Suggested Pad Layout



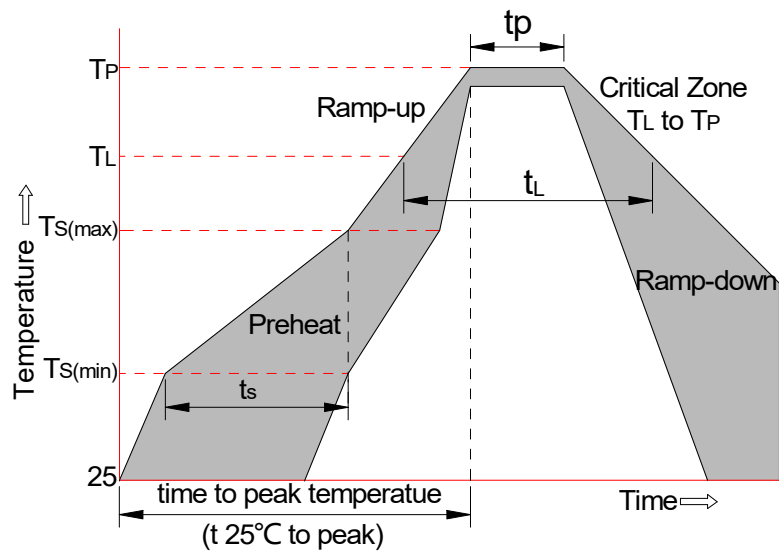
- NOTES:
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 2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY.
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Order information

Orderable Device	Package	Packing Option
ST0561D4-MS	DFN1006	10000PCS

SolderingParameters

FIG.5: Reflow condition



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

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