SE1D600U24A

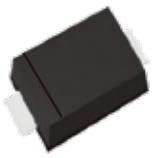
Electrostatic Discharge Protection Device

FEATURES

- 5950Watts peak pulse power (tp = 8/20μs)
- Protects one data or power line
- Working voltage: 24V
- Fast turn-on and low clamping voltage
- Response Time is Typically < 1 ns
- Solid-state silicon-avalanche and active circuit triggering technology

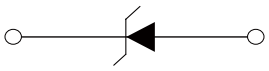
APPLICATIONS

- Smart Phone and Tablet PC
- Digital cameras, PDA
- TV and Set Top Box
- Wearable Devices
- Power supplies



SOD-123FL

Marking



Schematic Symbol

IEC COMPATIBILITY

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

THERMAL CONSIDERATIONS

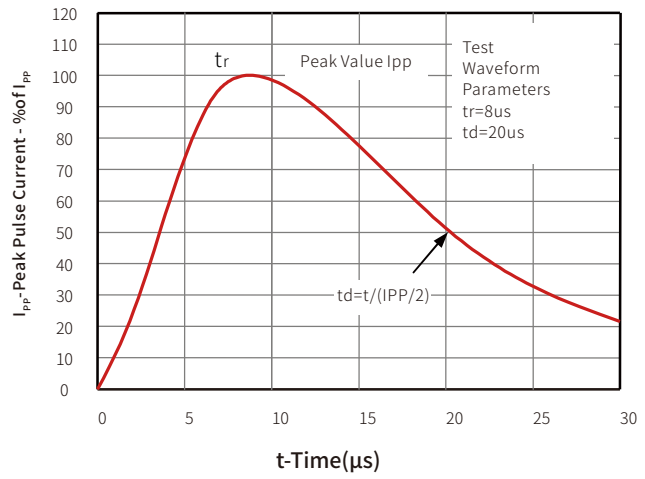
Symbol	Parameter	Value	Unit
P_{pp}	Peak Pulse Power (tp=8/20μs waveform)	5950	Watts
T_J	Operating Temperature Range	-55 to +150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

ELECTRICAL CHARACTERISTICS

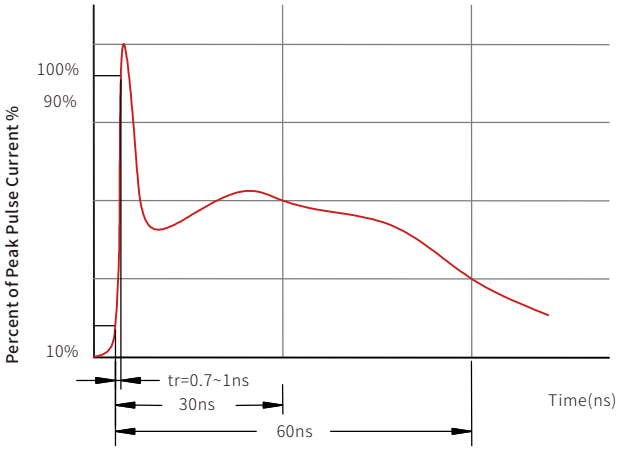
Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
V_{RWM}	Reverse Stand-off Voltage				24	V
V_{BR}	Reverse Breakdown Voltage	I_T=1mA	25			V
I_R	Reverse Leakage Current	V_{RWM}=24V			1	μA
V_F	Forward Voltage	I_F=10mA	0.5	0.8	1.2	V
V_C	Clamping Voltage	I_{PP}=100A,tp=8/20μs		24	30	V
V_C	Clamping Voltage	I_{PP}=170A,tp=8/20μs		29	35	V
I_{PP}	Peak Pulse Current	tp=8/20μs			170	A
C_J	Off State Junction Capacitance	V_R=0V, f=1MHz		590		pF

CHARACTERISTIC CURVES

8/20μs Pulse Waveform

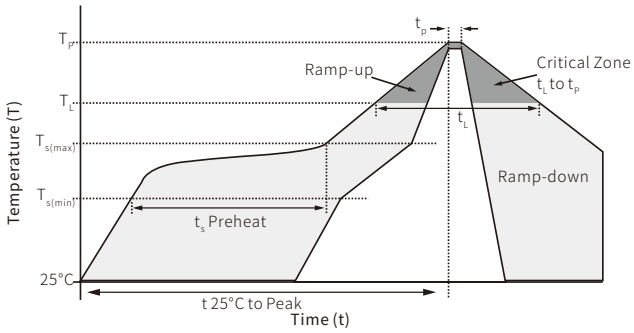


ESD Pulse Waveform (according to IEC 61000-4-2)

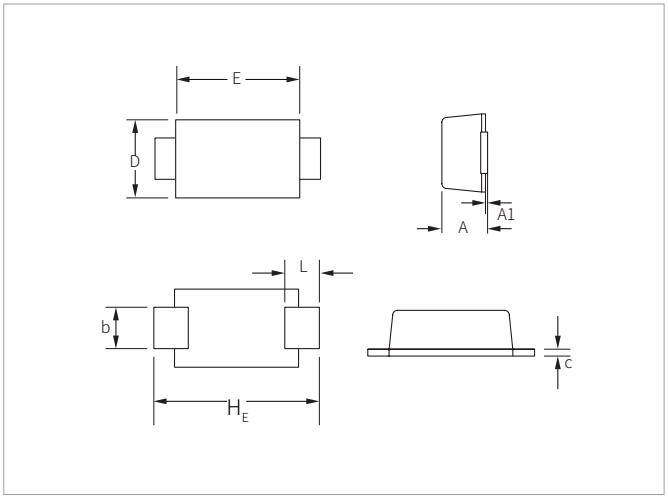


SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
	$T_{S(max)}$ to T_L - Ramp-up Rate	3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes max.
Do not exceed		260°C

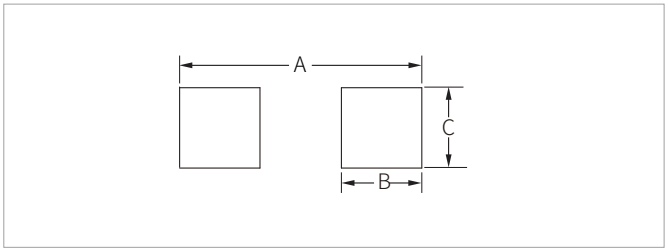


SOD-123FL PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.95	1.45	0.037	0.057
A1	0.00	0.10	0.000	0.004
b	0.70	1.20	0.028	0.047
c	0.05	0.30	0.002	0.012
D	1.50	2.00	0.059	0.079
E	2.50	3.10	0.098	0.122
L	0.35	0.90	0.014	0.035
H_E	3.40	3.90	0.134	0.154

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
A	4.20	0.165
B	1.50	0.059
C	1.20	0.047

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SE1D600U24A	SOD-123FL	3000PCS	7”

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