NextGen Components,Inc.

PART CODE: SOD523LESD5Z5C

SPECIFICATION SHEET

SPECIFICATION SHEET NO.	Q0725- SOD523LESD5Z5C
DATE	July 25. 2023
REVISION	A0
DESCRIPITION	SMD Plastic-Encapsulate ESD Protection Diodes, SOD-523 series, 2 pads LESD5Z5.0C Type, TVs for ESD protection Reverse Working Voltage : 5.0V, Reverse Leakage Current @5V: 1.0μA Operating Temp. Range -40°C ~+150°C, Package in Tape/Reel, 3000pcs/Reel RoHS/RoHS III compliant
CUSTOMER	
CUSTOMER PART NUMBER	
CROSS REF. PART NUMBER	
ORIGINAL PART NUMBER	MDD LESD5Z5.0C
PART CODE	SOD523LESD5Z5C

VENDOR APPROVE
Issued/Checked/Approved NextGen Components, Inc. Mandy Xu NextGen Components, Inc. Ruby Zhang NextGen Components, Inc. Jack Zhang
DATE: July 25. 2023

CUSTOMER APPROVE
DATE:

SMD ESD PROTECTION DIODES SOD-523 SERIES

DESCRIPTION

The LESD5Z5.0C is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. This device has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

MAIN FEATURE

- Peak power dissipation 128W (8/20μs)
- IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- Protects one directional I/O line
- Low clamping voltage
- Low leakage current
- Working voltages : 5.0V
- Meet MSL 1 requirement

APPLICATION

- High speed line: USB1.0/2.0, VGA, DVI SDI
- Serial and parallel pots
- Notebooks, Desktops, and Servers Cellular
- Cellular handsets and accessories
- Portable Instrumentation
- Peripherals & Projection TV

RFQ
Request For Quotation

PART CODE GUIDE

SOD523	LESD5Z	5C
1	2	3

1) **SOD523:** SMD Plastic-Encapsulate ESD Protection Diodes, SOD-523 series, 2 pads

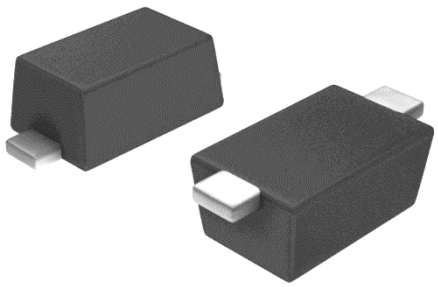
2) **LESD5Z:** Type code for original part number LESD5Z5.0C

3) **5C**: Internal Control Code, (A~Z or 1~9 or Blank) or custom parametric data code

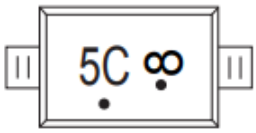
SMD ESD PROTECTION DIODES SOD-523 SERIES

DIMENSION (Unit: Inch/mm)

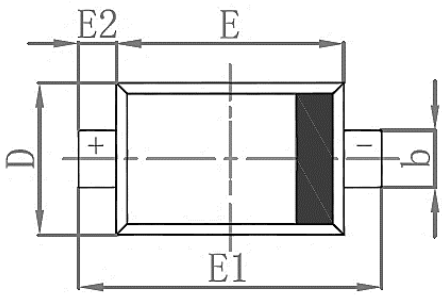
Image for reference

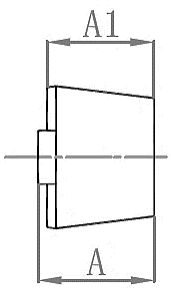


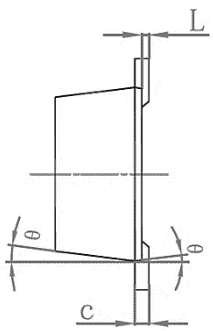
Marking: 5C



SOD-523

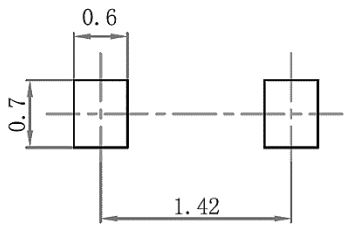




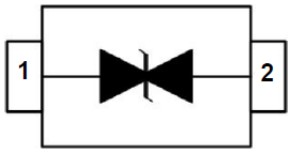


Symbol	Value (mm)		
	Min.	Typ.	Max.
A	0.51		0.770
A1	0.50		0.70
b	0.250		0.350
c	0.080		0.150
D	0.750		0.850
E	1.10		1.30
E1	1.50		1.70
E2	0.20 Ref.		
L	0.010		0.070
K	7° Ref.		

Recommend Pad Layout



Circuit Diagram



SMD ESD PROTECTION DIODES SOD-523 SERIES

MECHANICAL DATA

Case	Flammability Rating	Polarity	Mounting Position	Weight per piece
JEDEC SOD-523 molded plastic body	UL 94V-0	-	-	-

ABSOLUTE MAX. RATINGS AT Ta=25 °C (unless otherwise specified)

Parameter	SYMBOLS	VALUE	UNITS
		LIMIT	
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30	KV
ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 30	KV
Peak Pulse Power @8/20μs	P_{PP}	128	W
Operating Temperature Range	T_J	-540~+ 150	°C
Storage Temperature Range	T_{STG}	-40 ~ +150	°C
Lead Solder Temperature- Max. (10 s Duration)	T_L	260 /10s	°C

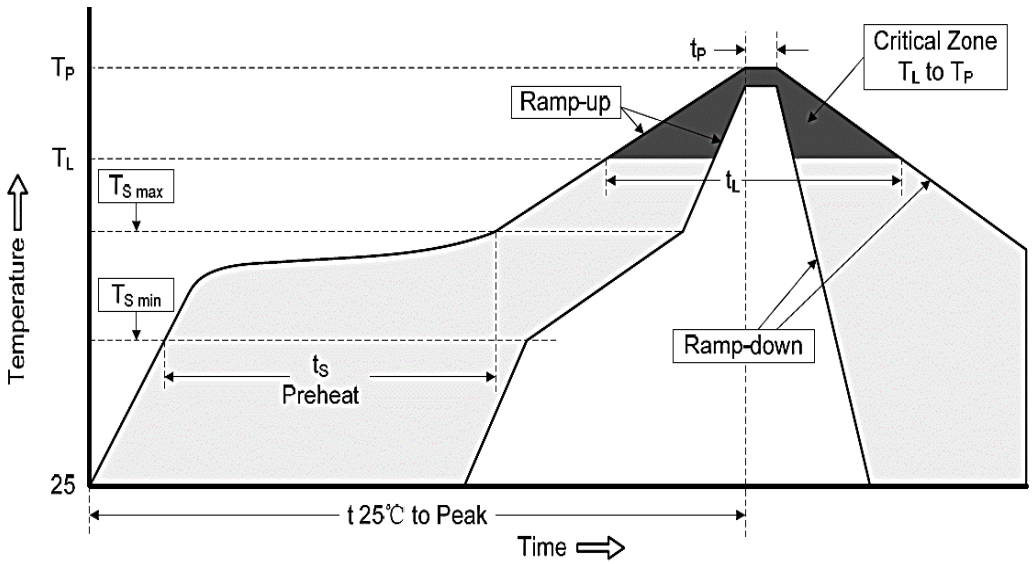
ELECTRICAL CHARACTERISTICS (Ta=25 °C unless otherwise specified)

Parameter	SYMBOLS	VALUE			UNITS
		Min.	Typical	Max.	
Reverse Working Voltage	V_{RWM}			5.0	V
Reverse Breakdown Voltage @ I_T = 1.0mA	V_{BR}	5.6		9.0	V
Reverse Leakage Current @V_{RWM} = 5V	I_R			1.0	µA
Clamping Voltage @ I_{PP} = 5A, t p = 8/20µs	V_C			11.6	V
Clamping Voltage @ I_{PP} = 8A, t p = 8/20µs	V_C			16.0	V
Junction Capacitance @ V R= 0 V, f = 1MHz	C_J		10	15	pF

RELIABILITY

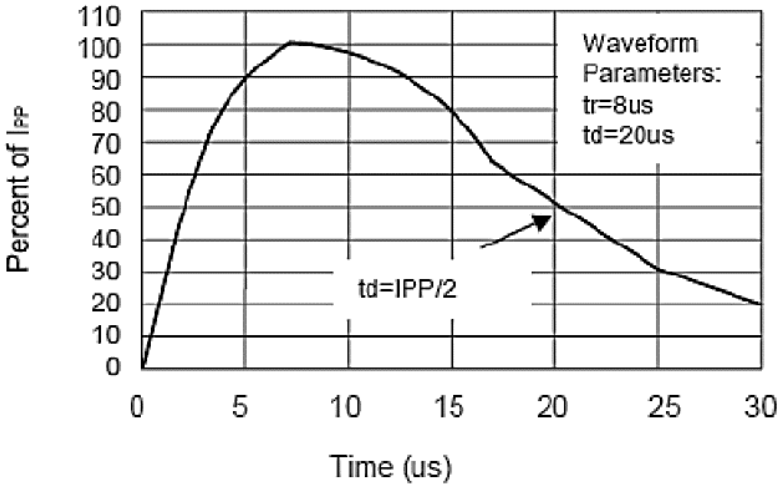
Number	Experiment Items	Experiment Method And Conditions	Reference Documents
1	Solder Resistance Test	Test 260°C± 5°C for 10 ± 2 sec. Immerse body into solder 1/16" ± 1/32"	MIL-STD-750D METHOD-2031.2
2	Solderability Test	230°C ±5°C for 5 sec.	MIL-STD-750D METHOD-2026.1 0
3	Pull Test	1 kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036.4
4	Bend Test	0.5Kg Weight Applied To Each Lead, Bending Arcs 90 °C ± 5 °C For 3 Times	MIL-STD-750D METHOD-2036.4
5	High Temperature Reverse Bias Test	T_A=100°C for 1000 Hours at V_R=80% Rated V_R	MIL-STD-750D METHOD-1038.4
6	Forward Operation Life Test	TA=25°C Rated Average Rectified Current	MIL-STD-750D METHOD-1027.3
7	Intermittent Operation Life Test	On state: 5 min with rated IRMS Power Off state: 5 min with Cool Forced Air. On and off for 1000 cycles.	MIL-STD-750D METHOD-1036.3
8	Pressure Cooker Test	15 PSIG, T_A=121°C, 4 hours	MIL-S-19500 APPENOIXC
9	Temperature Cycling Test	-55°C~+125°C; 30 Minutes For Dwelled Time 5 minutes for transferred time. Total: 10 cycles.	MIL-STD-750D METHOD-1051.7
10	Thermal Shock Test	0°C for 5 minutes., 100°C for 5minutes, Total: 10 cycles	MIL-STD-750D METHOD-1056.7
11	Forward Surge Test	8.3ms Single Sale Sine-wave One Surge.	MIL-STD-750D METHOD-4066.4
12	Humidity Test	T_A=65°C, RH=98% for 1000 hours.	MIL-STD-750D METHOD-1021.3
13	High Temperature Storage life Test	150°C for 1000 Hours	MIL-STD-750D METHOD-1031.5

SUGGESTED REFLOW PROFILE (For Reference Only)

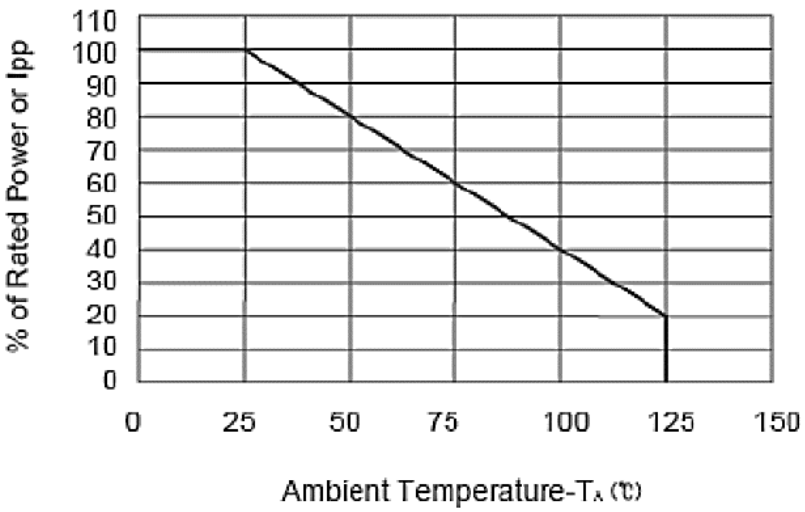


Profile Feature		Pb-Free Assembly
Average Ramp-up Rate (Ts Max to Tp)		3℃/second Max
Preheat	**Temperature Min (Ts Min.)**	150℃
	Temperature Max (Ts Max.)	200℃
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	**Temperature (TL)**	217℃
	Time (tL)	60 ~ 150 seconds
Peak/Classification Temperature (Tp)		260 ℃
Time within 5℃ of actual Peak Temperature (tp)		20 ~ 40 seconds
Ramp-down rate		6 ℃ /Second Max.
Time 25 ℃ to Peak Temperature		8 minutes Max.
Suggest reflow times		3 Times Max.

RATINGS AND CHARACTERISTIC CURVES (For Reference Only)



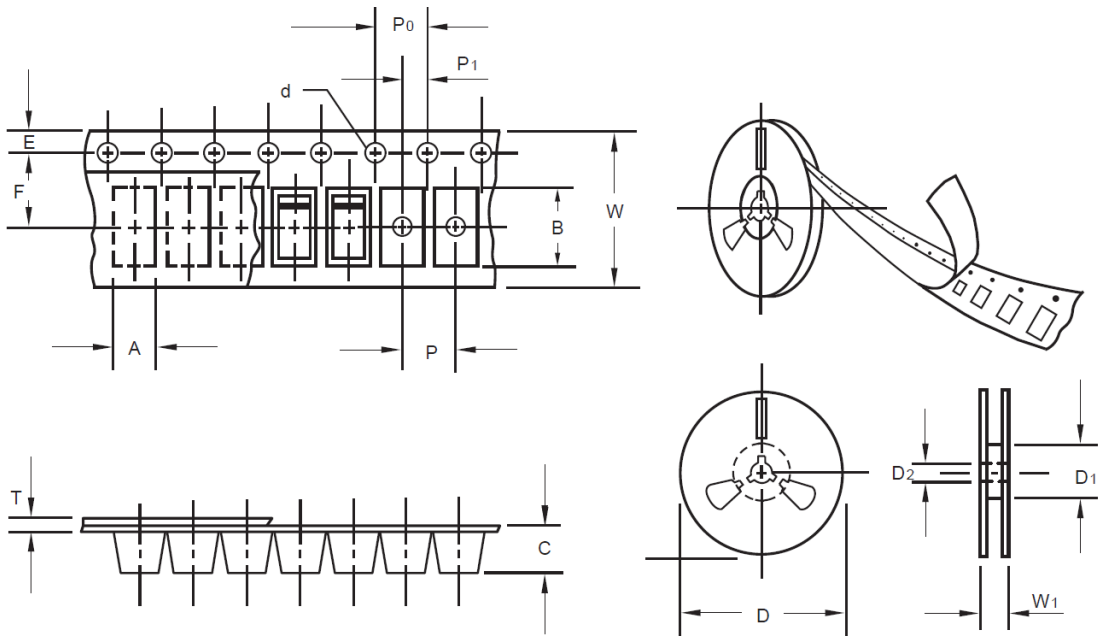
Pulse Waveform



Power Derating Curve

TAPE/REEL (Unit: mm)

All Devices are packed in accordance with EIA standard RS-481-A and specifications.



Item	Symbol	Tolerance	SOD-523
Carrier width	A	0.1	2.10
Carrier Length	B	0.1	4.00
Carrier Depth	C	0.1	1.60
Sprocket hole	d	0.05	1.55
7”Reel outside diameter	D	2.0	178.00
7”Reel inner diameter	D1	Min.	50.00
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	8.15
Reel width	W1	1.0	10.50

SPQ PACKAGE for Reference

Item	Unit	Value
Case Code		SOD-523
Reel Size	Inch	7
Reel Size	mm	178
Tape Space	mm	/
SPQ /Reel	pcs	3000
Weigh /SPQ	LBs	
Weigh /SPQ	KGs	
Qty. Per Box	pcs	6,000
Inner Box	Inch	L8.0*W8.0*H1.5

DISCLAIMER

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