




SPECIFICATION SHEET

SPECIFICATION SHEET NO.	Q0725- SOD523LESD5Z5C
DATE	July 25. 2023
REVISION	A0
DESCRIPTION	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			
DATE: July 25. 2023			

CUSTOMER APPROVE	
DATE:	
7/25/2023	

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

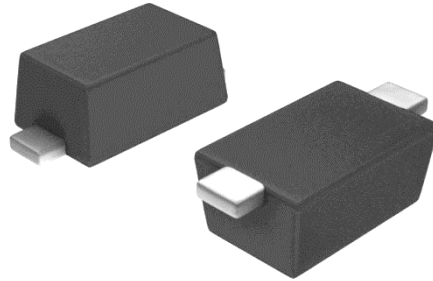
2) **LESD5Z**: Type code for original part number LESD5Z5.0C

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

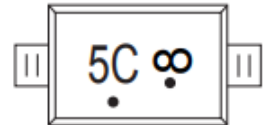
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DIMENSION (Unit: Inch/mm)

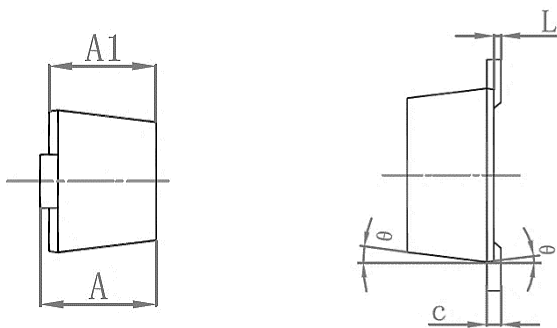
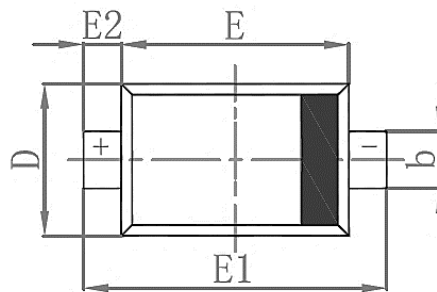
Image for reference



Marking: 5C

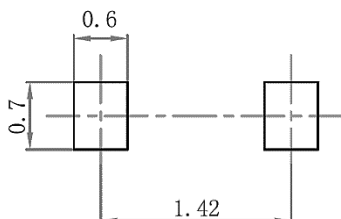


SOD-523

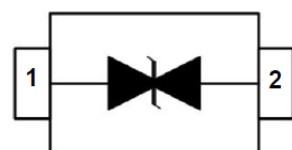


Symbol	Value (mm)		
	Min.	Typ.	Max.
A	0.51		0.770
A1	0.50		0.70
b	0.250		0.350
c	0.080		0.150
D	0.750		0.850
E	1.10		1.30
E1	1.50		1.70
E2	0.20 Ref.		
L	0.010		0.070
K	7° Ref.		

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

SMD ESD PROTECTION DIODES SOD-523 SERIES

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

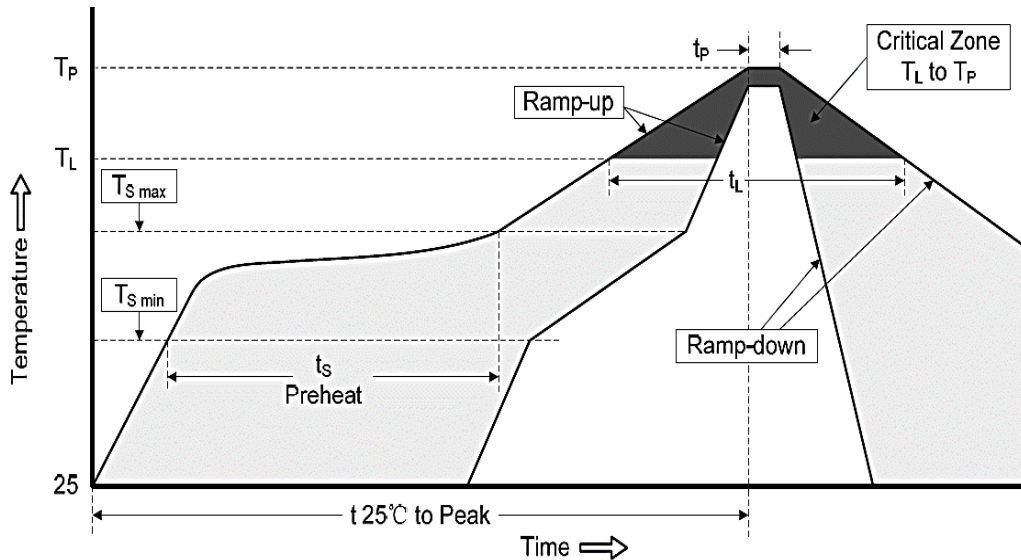
Parameter	SYMBOLS	VALUE			UNITS
		Min.	Typical	Max.	
Reverse Working Voltage	V _{RWM}			5.0	V
Reverse Breakdown Voltage @ I _T = 1.0mA	V _{BR}	5.6		9.0	V
Reverse Leakage Current @V _{RWM} = 5V	I _R			1.0	μA
Clamping Voltage @ I _{PP} = 5A, t _p = 8/20μs	V _C			11.6	V
Clamping Voltage @ I _{PP} = 8A, t _p = 8/20μs	V _C			16.0	V
Junction Capacitance @ V _R = 0 V, f = 1MHz	C _J		10	15	pF

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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	TA=100°C for 1000 Hours at VR=80% Rated VR	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, TA=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	TA=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

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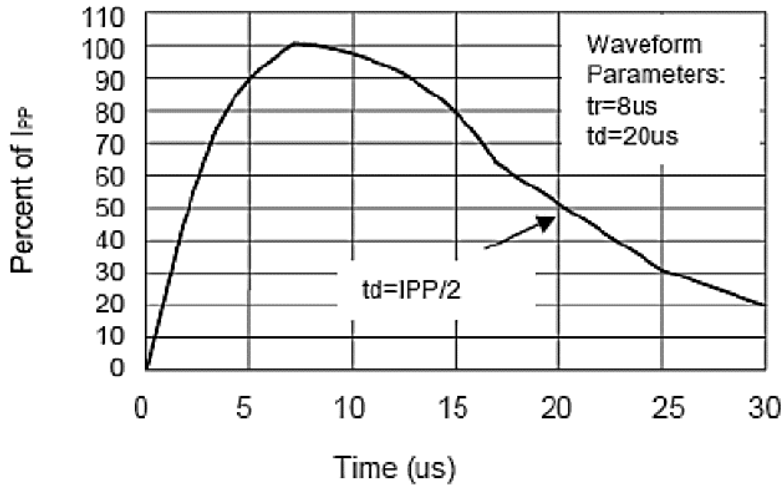
SUGGESTED REFLOW PROFILE (For Reference Only)



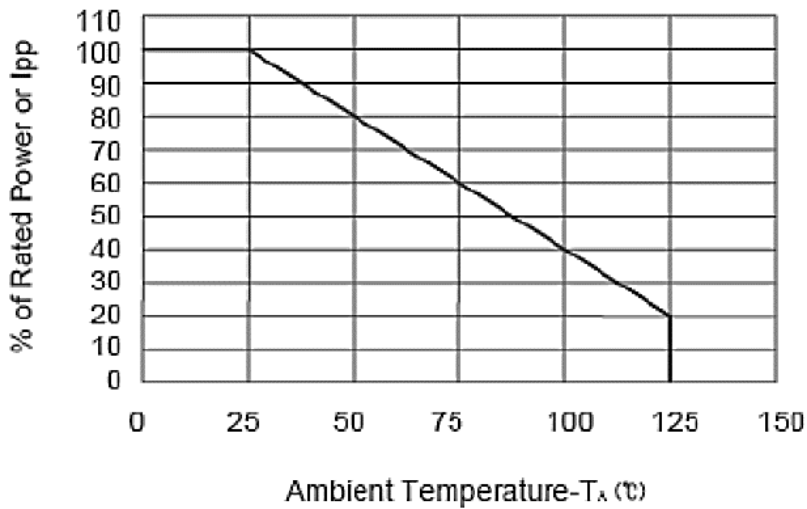
Profile Feature		Pb-Free Assembly
Average Ramp-up Rate (Ts Max to Tp)		3°C/second Max
Preheat	Temperature Min (Ts Min.)	150°C
	Temperature Max (Ts Max.)	200°C
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	Temperature (Tl)	217°C
	Time (ti)	60 ~ 150 seconds
Peak/Classification Temperature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

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RATINGS AND CHARACTERISTIC CURVES (For Reference Only)



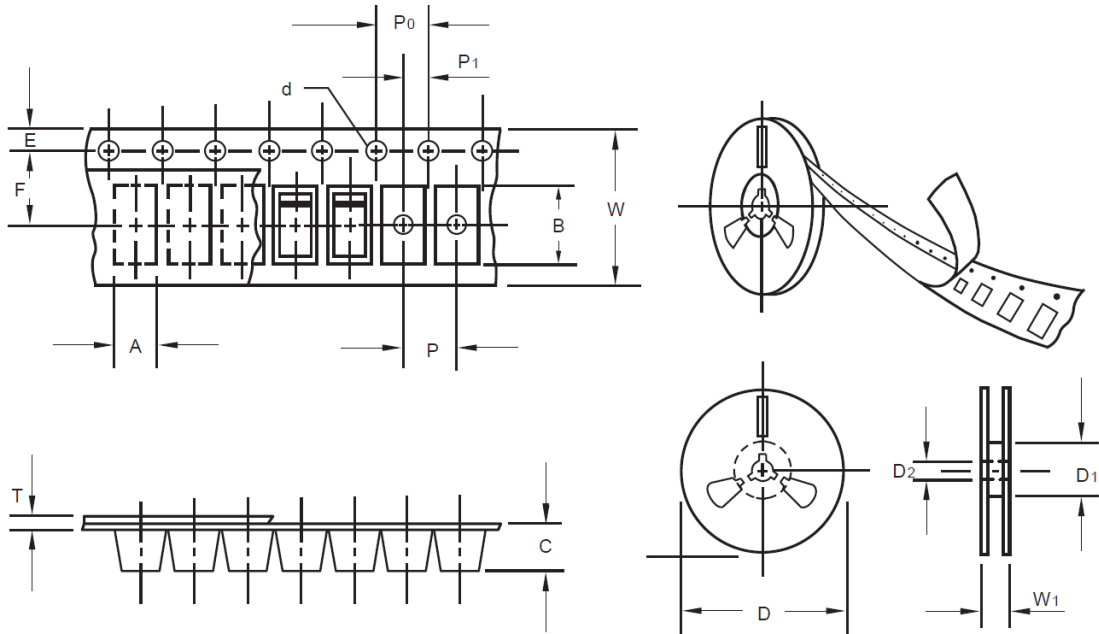
Pulse Waveform



Power Derating Curve

SMD ESD PROTECTION DIODES SOD-523 SERIES
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

SMD ESD PROTECTION DIODES SOD-523 SERIES

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

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