

ESD Protection Diode : TELSD5205030B



SOD523 package

■ Features

1. RoHS compliant and halogen-free
2. Working voltage: 5V
3. Capacitance: 3pF
4. Low clamping voltage
5. Low leakage current
6. IEC 61000-4-2 (ESD) ±15KV (air), ±8KV (contact)



■ Recommended Applications

1. High Speed Line: USB1.0/2.0, VGA, DVI, SDI,
2. Notebooks, Desktops, Servers
3. Cellular handsets and accessories
4. Serial and parallel ports

■ Mechanical Data

1. Case: SOD-523, molded plastic meets UL flammability rating 94V-0
2. High temperature soldering guaranteed: 260°C/10 seconds
3. Meets MSL level 1, per J-STD-020

■ Part Number Code

T	E	L	S	D	5	2	0	5	0	3	0	B
1	2	3	4	5	6	7	8	9	10	11	12	13

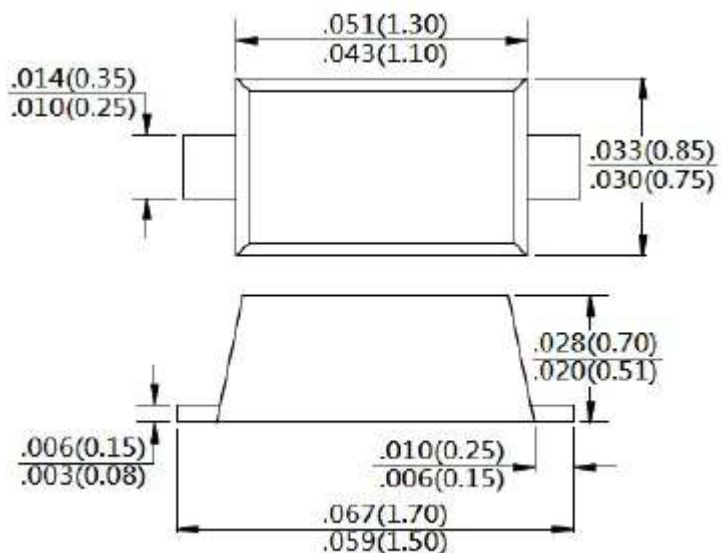
Product Series		Type code		Package		Reverse Stand off Voltage(V_{RWM})		Junction Capacitance(C_j)		Type Code	
TE	THINKING ESD Transient Voltage Suppression Diodes	D	Standard Capacitance >10pF	SD52	SOD-523, 2pins	05	5V	0R8	0.8pF	U	Uni-directional
		L	Low Capacitance >1pF, ≤10pF	D102	DFN1006, 2pins			030	3.0pF	B	Bi-directional,
		U	Ultra-low Capacitance ≤1pF	D062	DFN0603, 2pins			03D	3.3pF		
								250	25pF		

SOD523 package

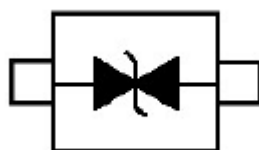
Structures and Dimensions

SOD-523

Unit: inch (mm)



Schematic & PIN Configuration



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SOD523 package



■ Maximum Rating (Rating at 25°C ambient temperature unless otherwise noted)

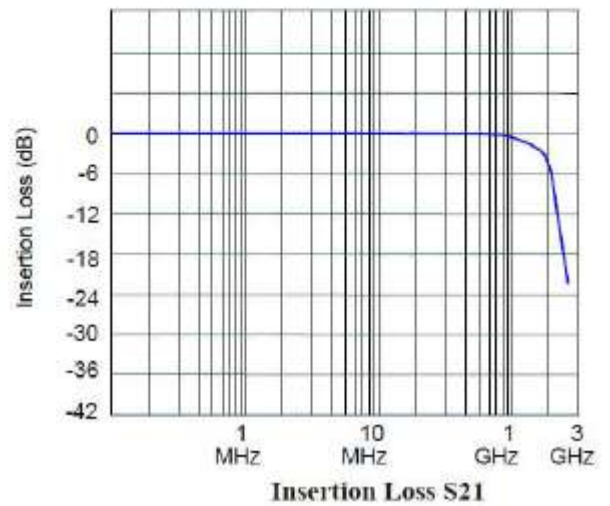
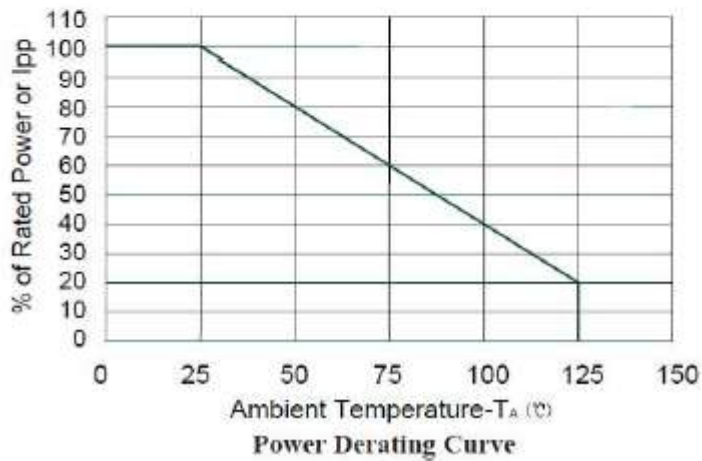
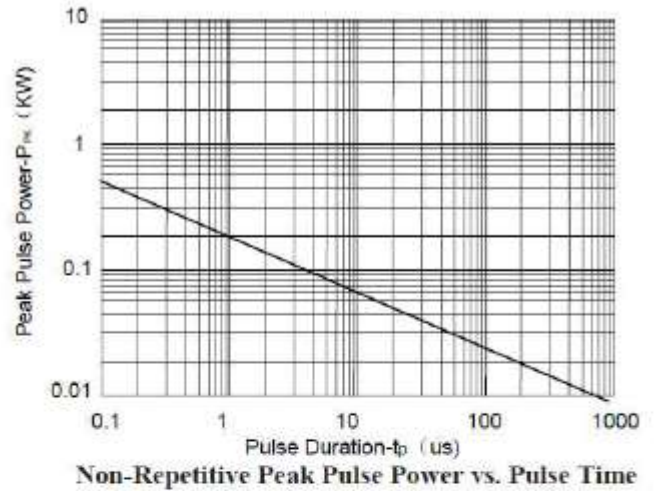
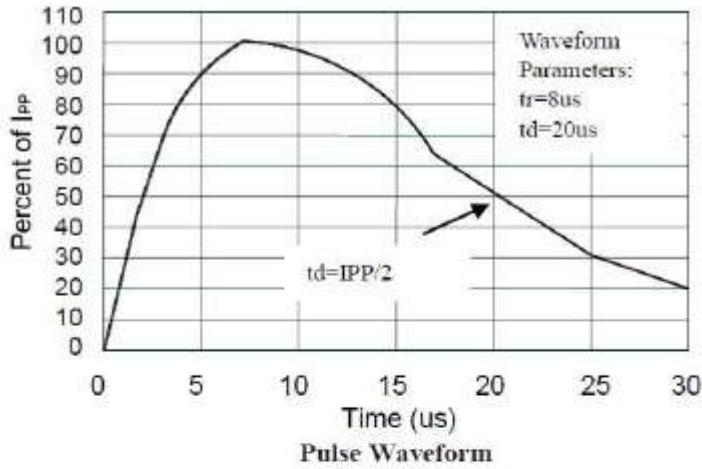
Parameter	Symbol	Value	Unit
Peak pulse power (tp= 8/20μs waveform)	P _{PPM}	60	W
ESD per IEC61000-4-2 (Air) ESD per IEC61000-4-2 (Contact)	V _{ESD}	±15 ±8	KV
Operating junction temperature	T _J	-55~+125	°C
Storage temperature range	T _{STG}	-55~+150	°C

■ Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse Stand-off Voltage	V _{RWM}	-			5	V
Breakdown Voltage	V _{BR}	I _T =1mA	5.2			V
Reverse Leakage Current	I _R	V _{RWM} =5V			1	μA
Clamping Voltage	V _C	I _{pp} =1A, tp= 8/20μs			9	V
Junction Capacitance	C _j	V _R = 0V, f = 1MHz Any I/O pin to Ground		3	6	pF

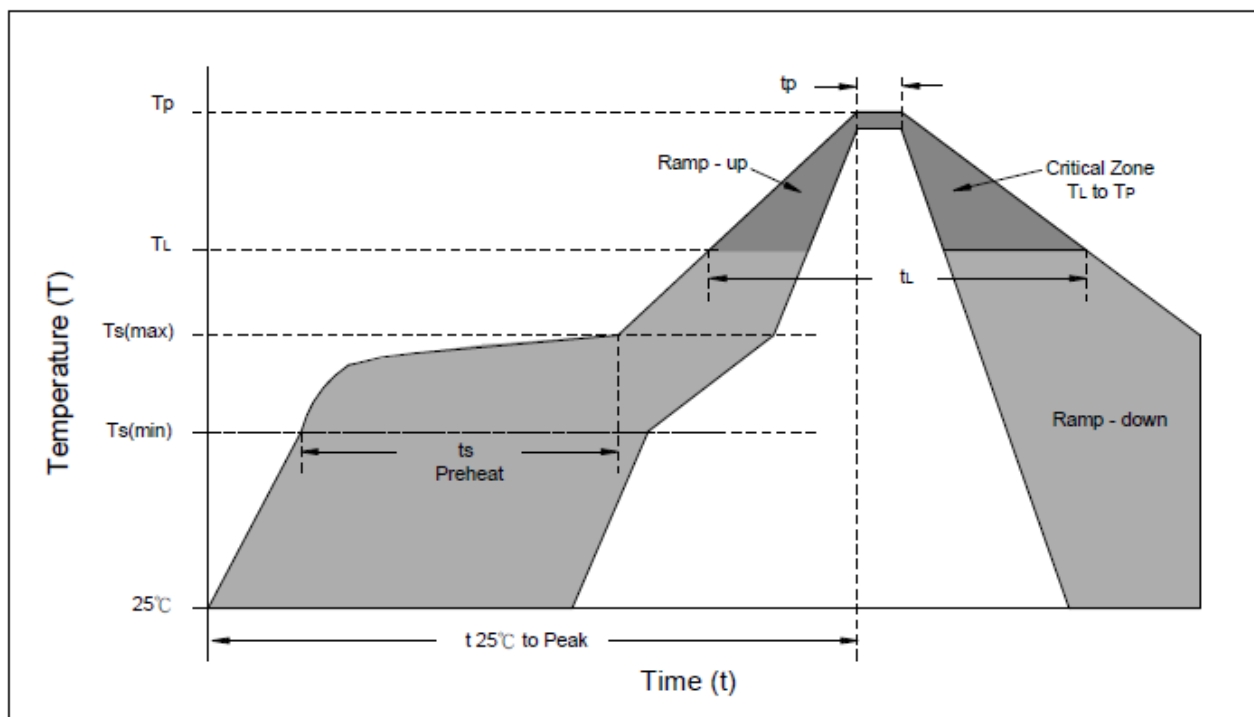
SOD523 package

■ Rate and Characteristic Curve ($T_A=25^\circ\text{C}$ unless otherwise noted)



SOD523 package

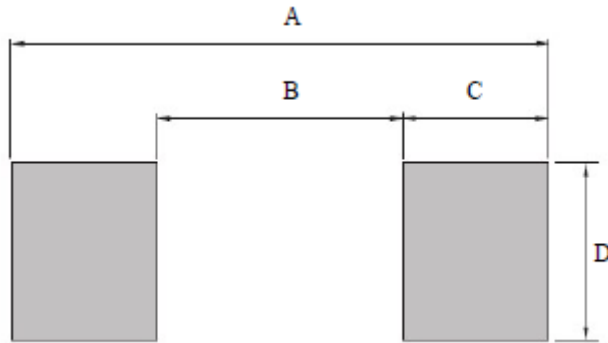
■ Soldering Recommendation



Reflow Condition	Lead-free assembly
Preheat -Temperature Min(Ts min) -Temperature Min(Ts max) -Time (min to max) (ts)	150°C 200°C 60 – 180 seconds
Average ramp up rate -Temperature Liquidus (TL) to peak	3°C/second max
Ts(max) to TL -Ramp-up Rate	3°C/second max.
Reflow -Temperature Liquidus (TL) -Time (tL)	217°C 60 – 150 seconds
Peak 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(TP)	8 minutes max.
Do not exceed	260°C

SOD523 package

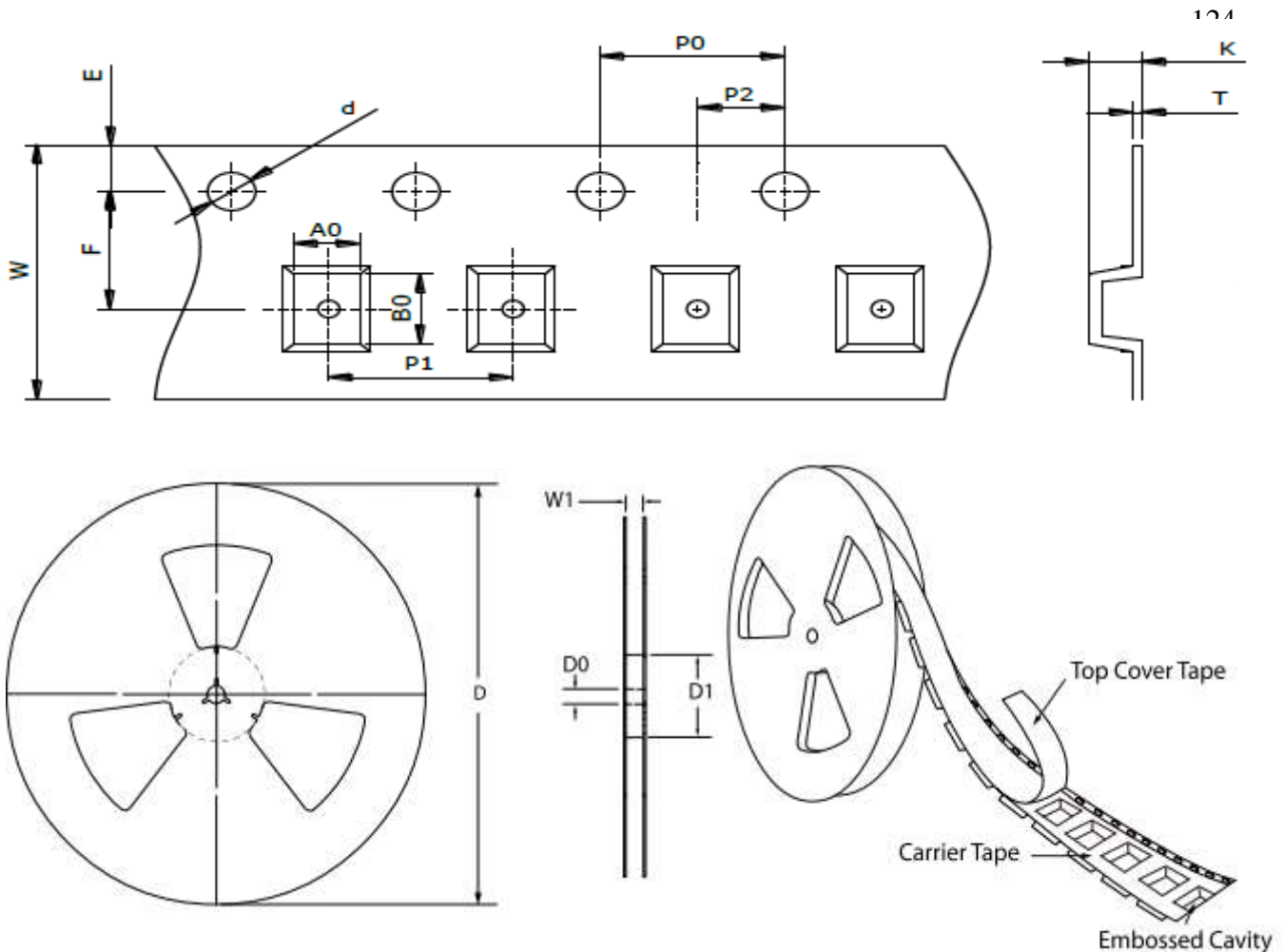
Recommended Soldering Pad Dimensions



Unit: mm

Package Type	A	B	C	D
SOD-523	2.02	0.82	0.60	0.70

Packaging





Item	Symbol	SOD-523 (Unit: mm)
Carrier width	A0	0.80 ± 0.10
Carrier length	B0	1.95 ± 0.10
Carrier length	K	0.50 ± 0.10
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178.00 ± 2.00
Feed hole width	D0	13.00 ± 0.20
Reel inner diameter	D1	MIN. 54.00
Sprocket hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.10
Sprocket hole pitch	P0	4.00 ± 0.10
Punch hole pitch	P1	4.00 ± 0.10
Embossment center	P2	2.00 ± 0.10
Overall tape thickness	T	0.20 ± 0.05
Tape width	W	8.00 ± 0.20
Reel width	W1	MAX. 13.50

■ Quantity

Package Type	Reel Size (inch)	Reel (Kpcs)
SOD-523	7	3

■ Warehouse Storage Conditions of product

- Storage condition:
 - 1.Storage Temperature: -10°C~+40°C
 - 2.Relative Humidity: ≤75%RH
 - 3.Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.