VOLTAGE RANGE
40 Volts
CURRENT
1 A

FEATURES

Low Forward Voltage Drop

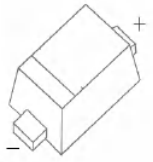
SOD523 Micro SMD package

RoHS compliant / Green EMC

Matte Tin (Sn) Lead finish

Cathode Band / Device marking

Surface Mount Package Ideally Suited for Automatic Insertion



SOD-523

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Value	Units
V_{RRM}	Repetitive Peak Reverse Voltage	40	V
$I_{F(AV)}$	Average Forward Rectified Current	1	A
I_{FSM}	Non-Repetitive Peak Forward Surge Current (@t=8..3ms)	6	A
T_J	Operating Junction Temperature	125	℃
T_{STG}	Storage Temperature Range	−50 to +125	℃

Characteristics at Ta = 25℃

Symbol	Parameter	Conditions	Min	Max	Units
V_F	Forward Voltage	I_F = 0.3A I_F = 1A		0.5 0.68	V V
I_R	Reverse current	V_R= 40V		100	uA
V_{BR}	Reverse breakdown voltage	I_R = 0.5mA	40		V
C_T	Capacitance	V_R = 0V, f = 1MHz		100	pF

RATING AND CHARACTERISTIC CURVES

Fig. 1 - Forward Current Derating Curve

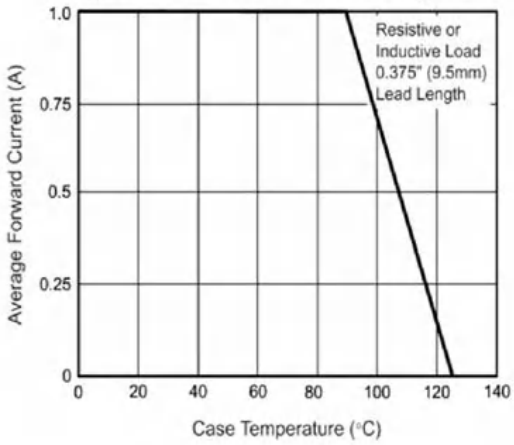


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

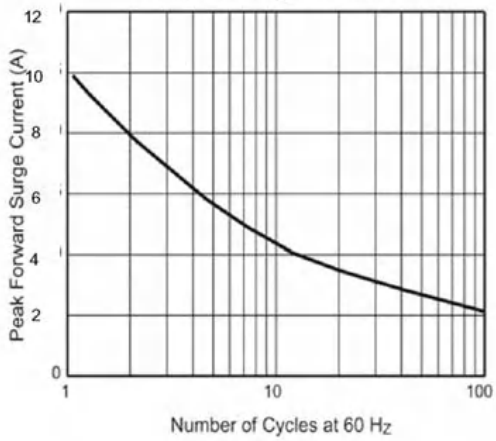


Fig. 3 - Typical Instantaneous Forward Characteristics

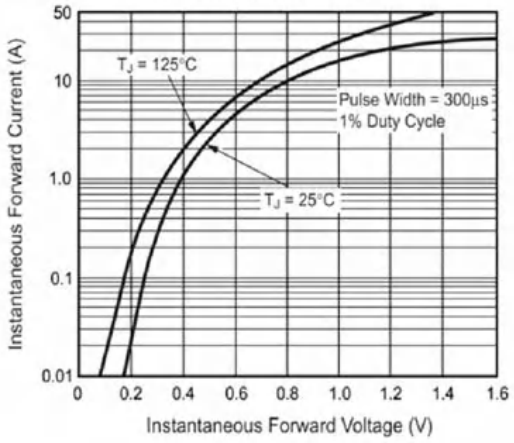


Fig. 4 - Typical Reverse Characteristics

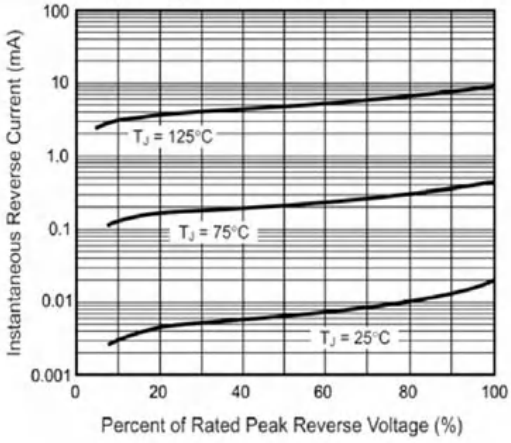


Fig. 5 - Typical Junction Capacitance

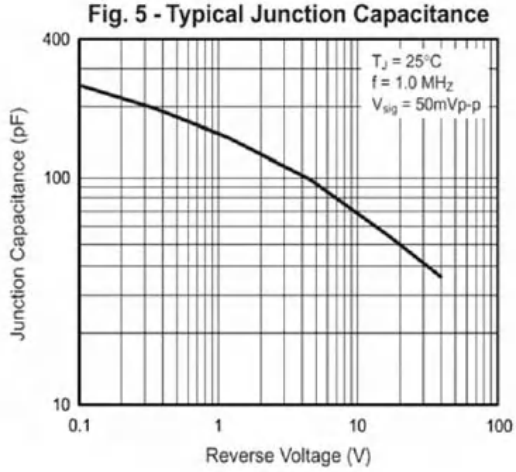
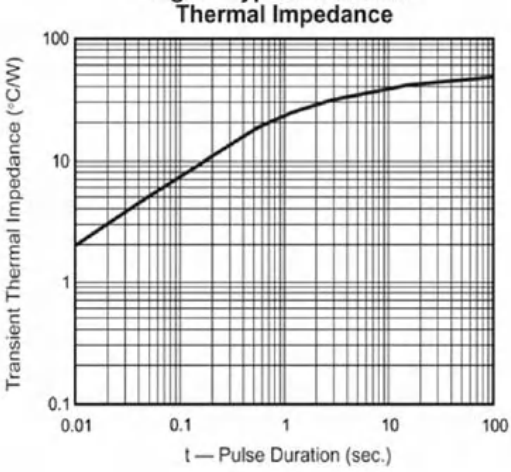


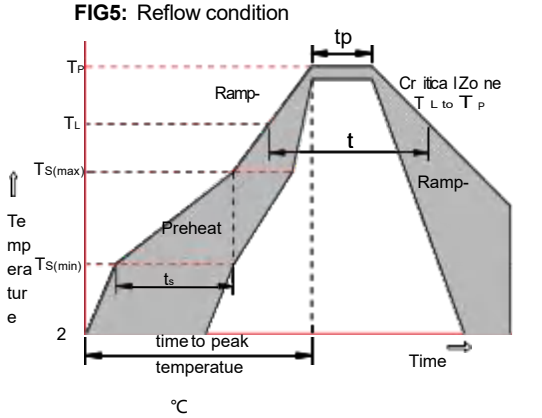
Fig. 6 - Typical Transient Thermal Impedance



Soldering parameters

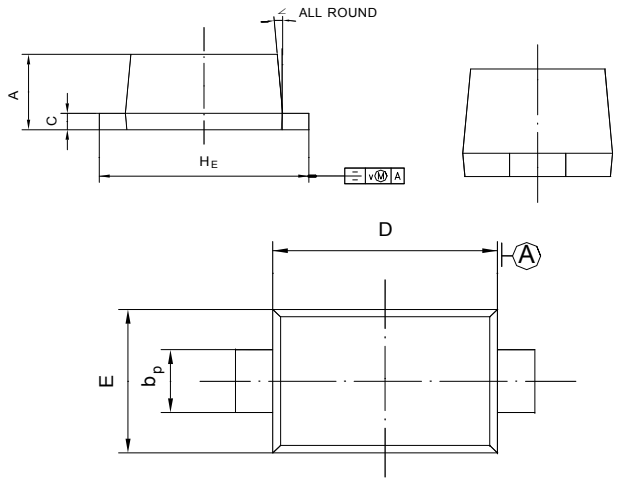
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid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

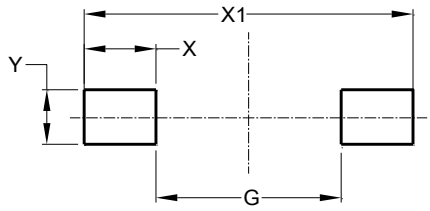
FIG5: Reflow condition



Package Dimensions & Suggested Pad Layout

SOD523



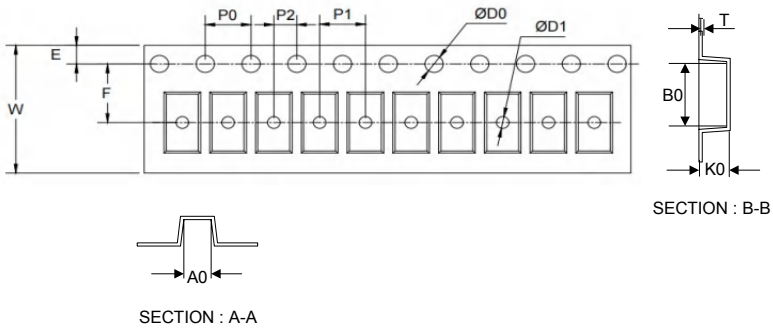


UNIT	A	b_p	C	D	E	H_E	V	∠
mm	0.70 0.50	0.40 0.20	0.14 0.05	1.30 1.10	0.90 0.75	1.70 1.50	0.1	5°

Dimensions	Value (in mm)
G	0.85
X	0.70
X1	2.25
Y	0.80

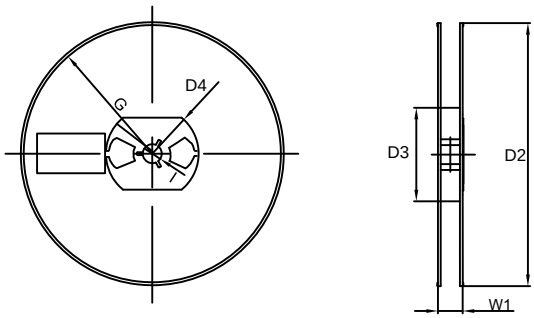
Tape & rell specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	2.00±0.20
P2	2.00±0.20
D0	1.55±0.20
D1	0.50±0.20
E	1.55±0.25
F	3.60±0.20
W	8.00±0.20
A0	1.30±0.20
B0	2.35±0.20
K0	0.95±0.20
T	0.20±0.20

7” Reel



D2	177.0±5.0
D3	55Min.
D4	R24.6±2.0
G	R82.0±2.0
I	13.0±2.0
W1	10.20±3.0

Quantity: 3000PCS