

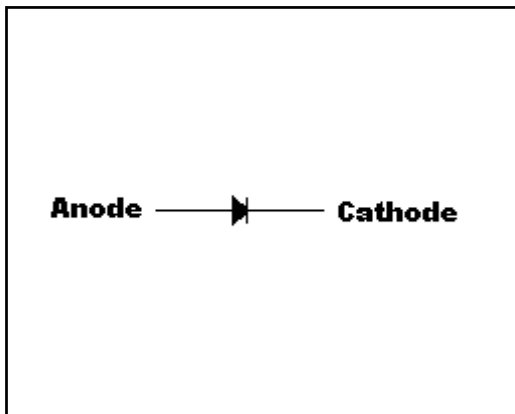
**500mW Zener Diode**

# ZD5270BSH

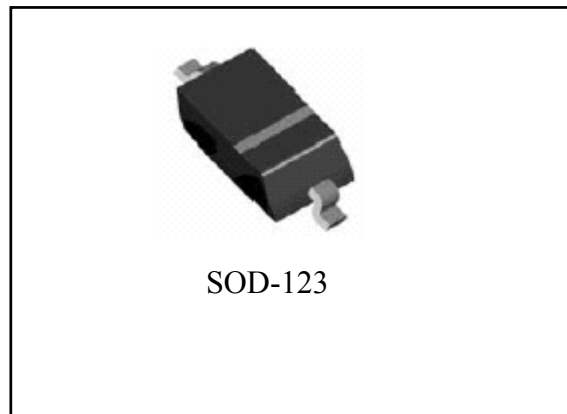
**Features**

- Ultra small surface mount package
- General purpose, medium current
- Planar die construction
- Pb-free lead plating and halogen-free package

**Symbol**

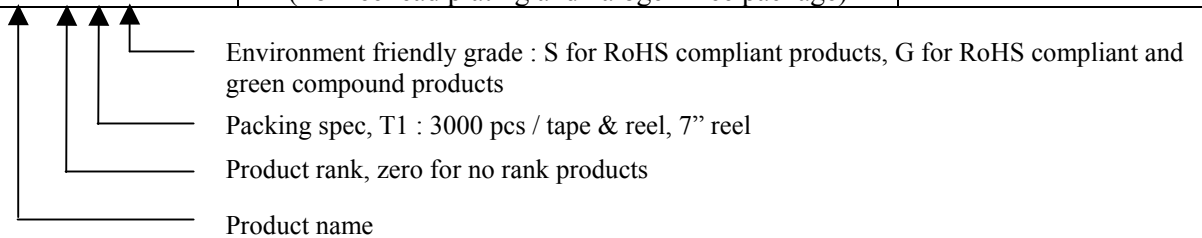


**Outline**



**Ordering Information**

Device	Package	Shipping
ZD5270BSH-0-T1-G	SOD-123 (Pb-free lead plating and halogen-free package)	3000 pcs / tape & reel

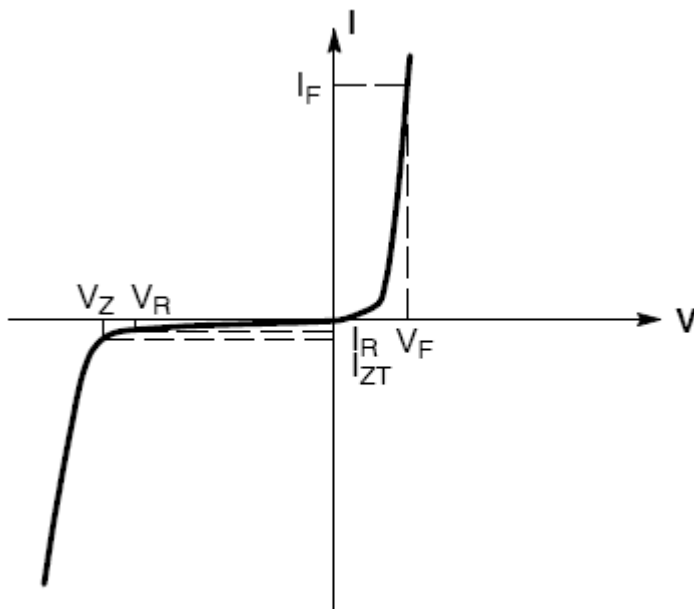


**Absolute Maximum Ratings**( $T_j=25^{\circ}\text{C}$ , unless otherwise specified)

Symbol	Parameter	Min	Typ	Max	Unit
$I_z$	zener current	-	-	5	mA
$P_{tot}$	total power dissipation	-	-	500	mW
$T_{stg}$	storage temperature	-65	-	+150	$^{\circ}\text{C}$
$T_j$	operating junction temperature	-55	-	+150	$^{\circ}\text{C}$

Note : Parts mounted on FR-4 board with area of 10mm x 10mm

**Characteristics** ( $T_j=25^{\circ}\text{C}$ , unless otherwise specified)



**Zener Voltage Regulator**

Symbol	Parameter
$V_Z$	Reverse zener voltage @ $I_{ZT}$
$I_{ZT}$	Reverse current
$I_R$	Reverse leakage current @ $V_R$
$V_R$	Reverse voltage
$I_F$	Forward current
$V_F$	Forward voltage @ $I_F$

Parameter	Symbol	Condition	Min.	Max.	Unit
Zener Voltage	V <sub>Z</sub>	I <sub>Z</sub> =1.4mA	86.45	95.55	V
Forward Voltage (Note 1)	V <sub>F</sub>	I <sub>F</sub> =20mA	-	1.2	V
Reverse Leakage Current (Note 1)	I <sub>R</sub>	V <sub>R</sub> =80V	-	100	nA
Zener Impedance	Z <sub>Z</sub>	I <sub>Z</sub> =250μA	-	10	kΩ
	Z <sub>ZT</sub>	I <sub>Z</sub> =1.4mA	-	5	kΩ

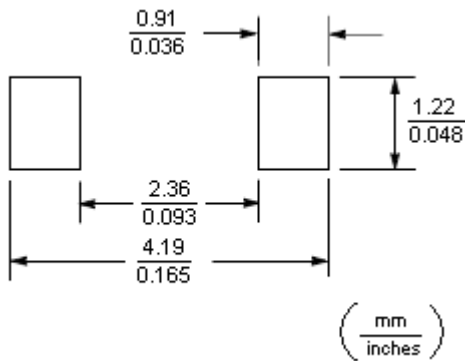
Notes: 1.pulse test, tp=300μs, duty cycle<2%.

### Thermal Characteristics

Symbol	Parameter	Conditions	Value	Unit
R <sub>th j-a</sub>	thermal resistance from junction to ambient	note	250	°C/W

Note : Parts mounted on FR-4 board with area of 10mm × 10mm

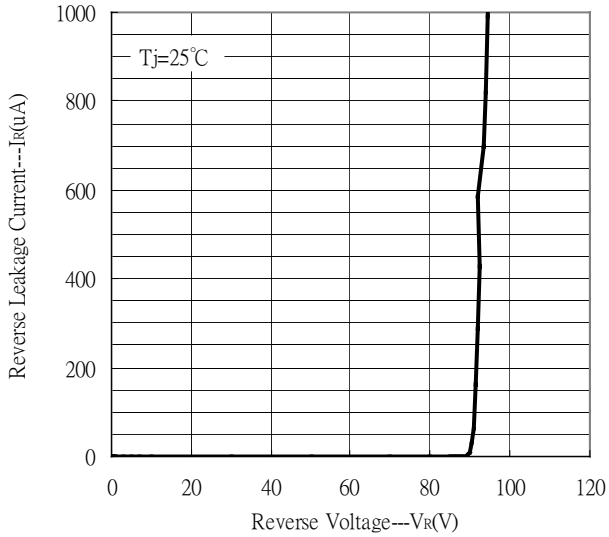
### Recommended Soldering Footprint



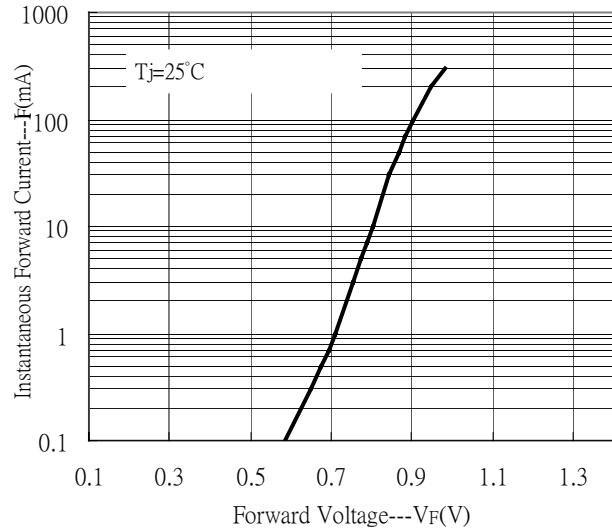


### Typical Characteristics

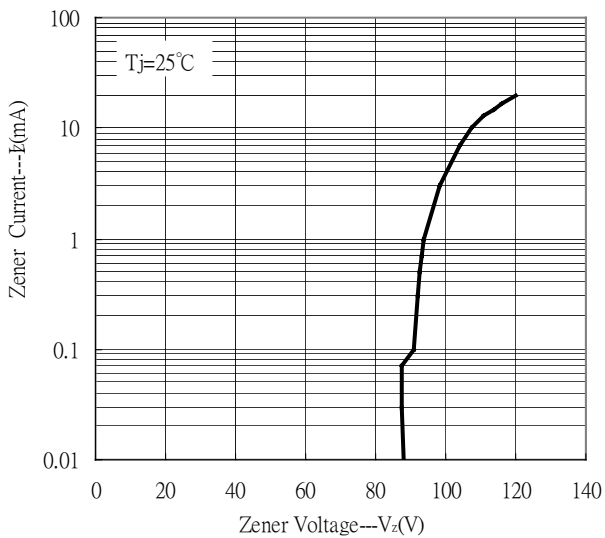
Reverse Leakage Current vs Reverse Voltage



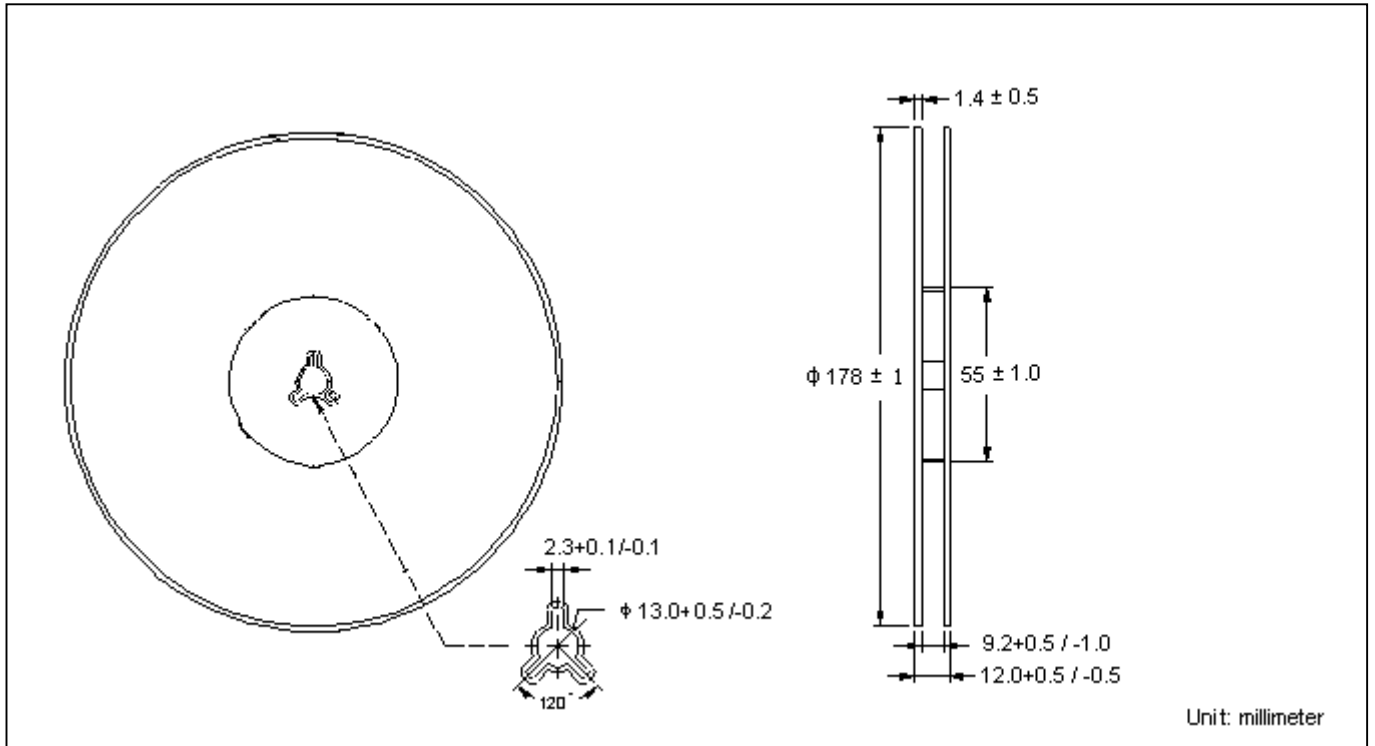
Forward Current vs Forward Voltage



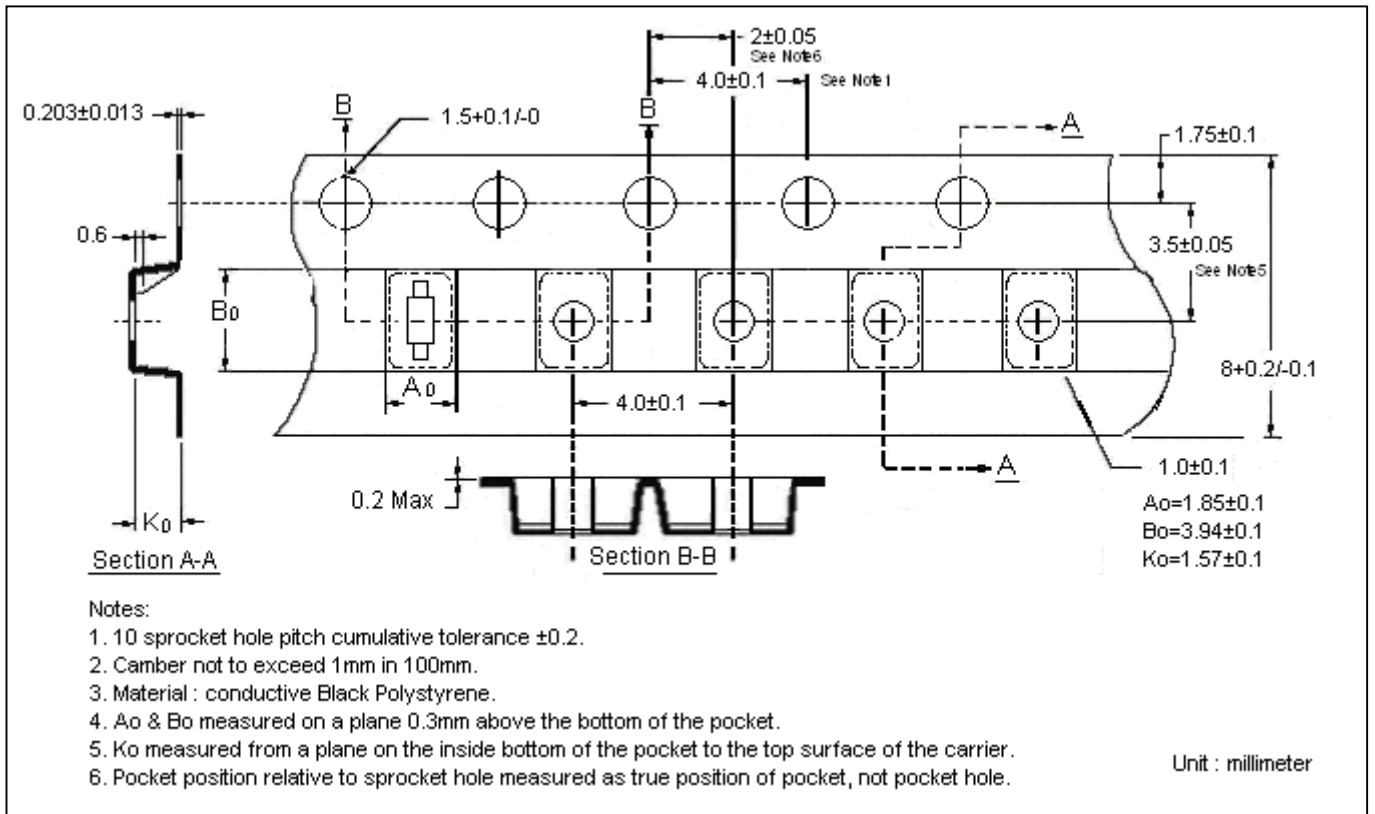
Zener Current vs Zener Voltage



### Reel Dimension



### Carrier Tape Dimension



**Recommended wave soldering condition**

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

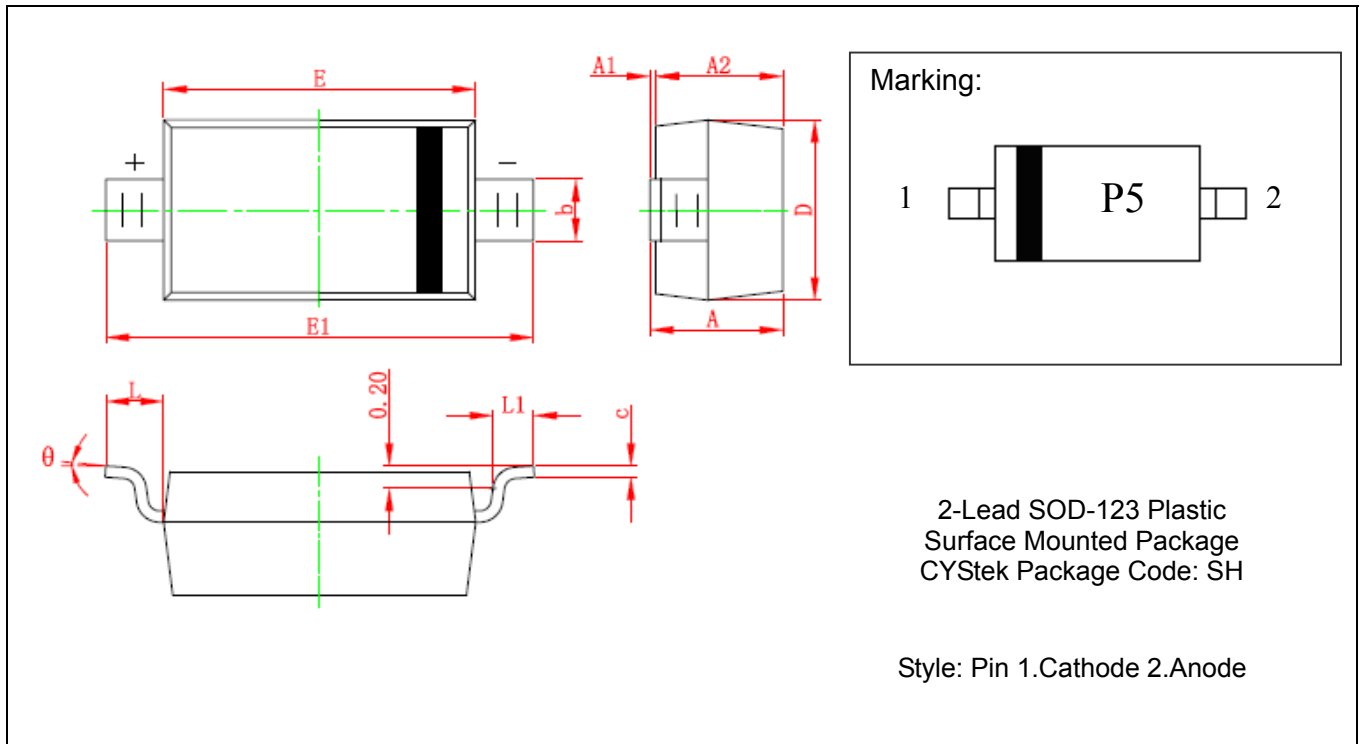
**Recommended temperature profile for IR reflow**



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(T <sub>s min</sub> )	100°C	150°C
-Temperature Max(T <sub>s max</sub> )	150°C	200°C
-Time(t <sub>s min</sub> to t <sub>s max</sub> )	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (T <sub>L</sub> )	183°C	217°C
- Time (t <sub>L</sub> )	60-150 seconds	60-150 seconds
Peak Temperature(T <sub>p</sub> )	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

**SOD-123 Dimension**



DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049	E	2.600	2.800	0.102	0.110
A1	0.000	0.100	0.000	0.004	E1	3.550	3.850	0.140	0.152
A2	1.050	1.115	0.041	0.045	L	0.500 REF		0.020 REF	
b	0.450	0.650	0.018	0.026	L1	0.250	0.450	0.010	0.018
c	0.080	0.150	0.003	0.006	θ	0°	8°	0°	8°
D	1.500	1.700	0.059	0.067					

Notes: 1.Controlling dimension : millimeters.  
 2.Lead thickness specified per L/F drawing with solder plating.  
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

**Material:**

- Lead: Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.

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