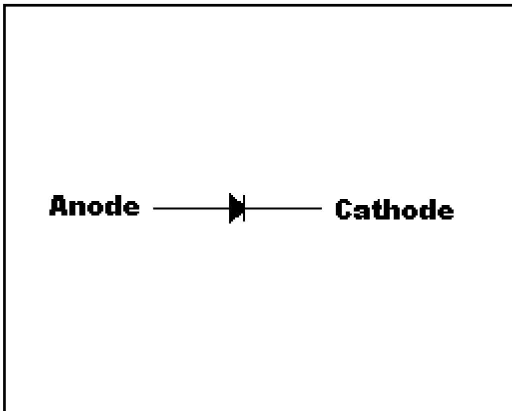
500mW Zener Diode

ZD5270BSH

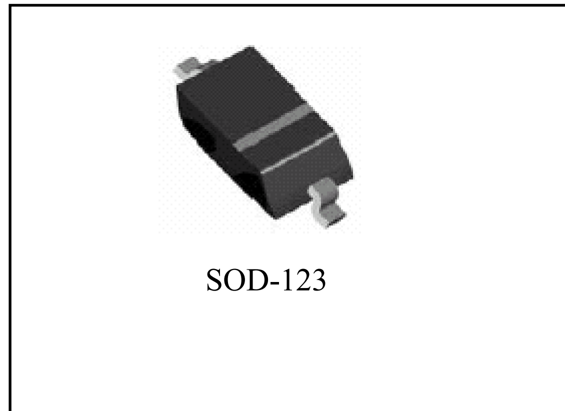
Features

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

Symbol

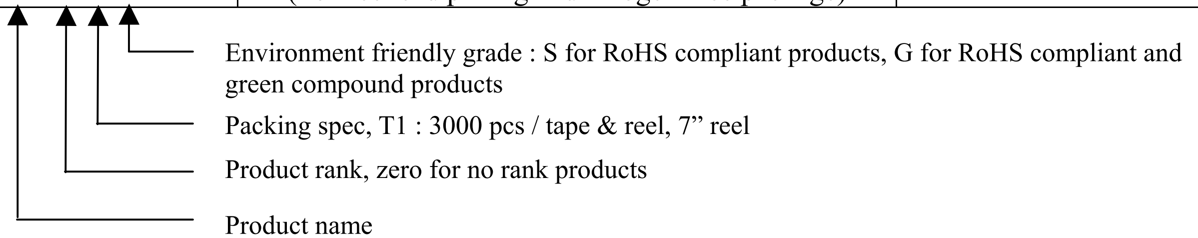


Outline


SOD-123

Ordering Information

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

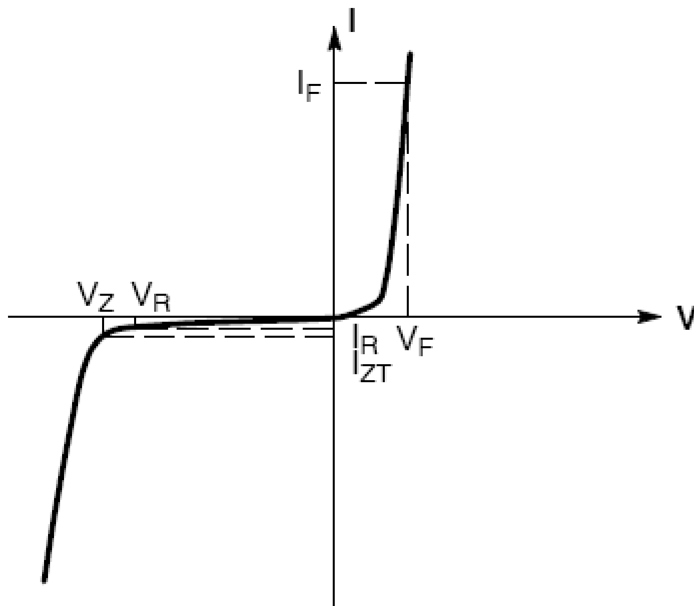


Absolute Maximum Ratings(Tj=25℃, unless otherwise specified)

Symbol	Parameter	Min	Typ	Max	Unit
I_Z	zener current	-	-	5	mA
Ptot	total power dissipation	-	-	500	mW
Tstg	storage temperature	-65	-	+150	℃
Tj	operating junction temperature	-55	-	+150	℃

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

Characteristics (Tj=25°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_Z	I_Z=1.4mA	86.45	95.55	V
Forward Voltage (Note 1)	V_F	I_F=20mA	-	1.2	V
Reverse Leakage Current (Note 1)	I_R	V_R=80V	-	100	nA
Zener Impedance	ZZ	I_Z=250μA	-	10	kΩ
	ZZT	I_Z=1.4mA	-	5	kΩ

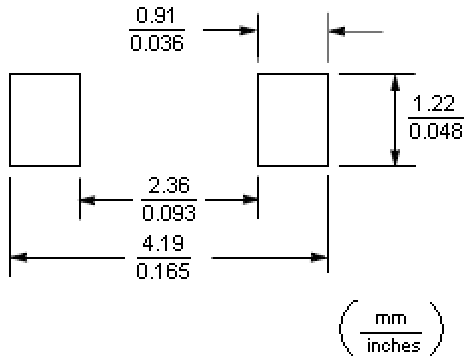
Notes: 1.pulse test, tp=300μs, duty cycle<2%.

Thermal Characteristics

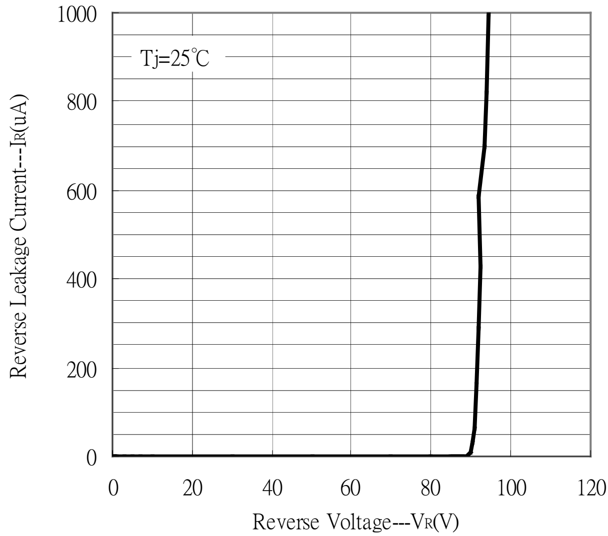
Symbol	Parameter	Conditions	Value	Unit
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note	250	°C/W

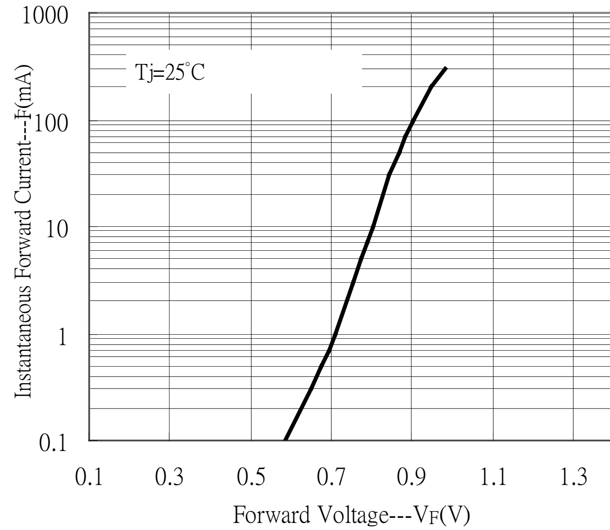
Note : Parts mounted on FR-4 board with area of 10mm × 10mm

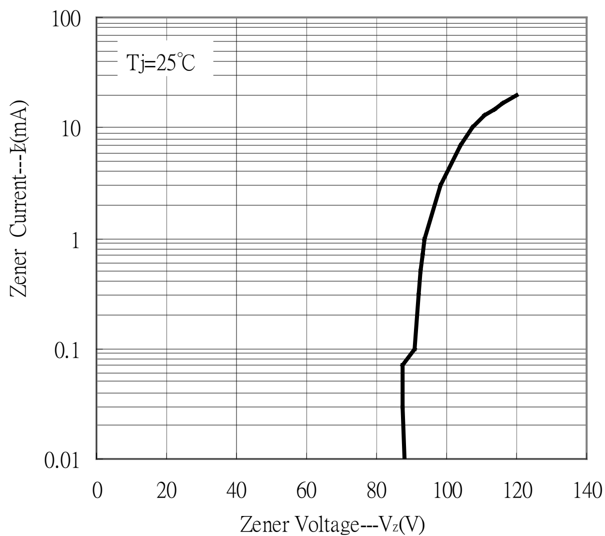
Recommended Soldering Footprint



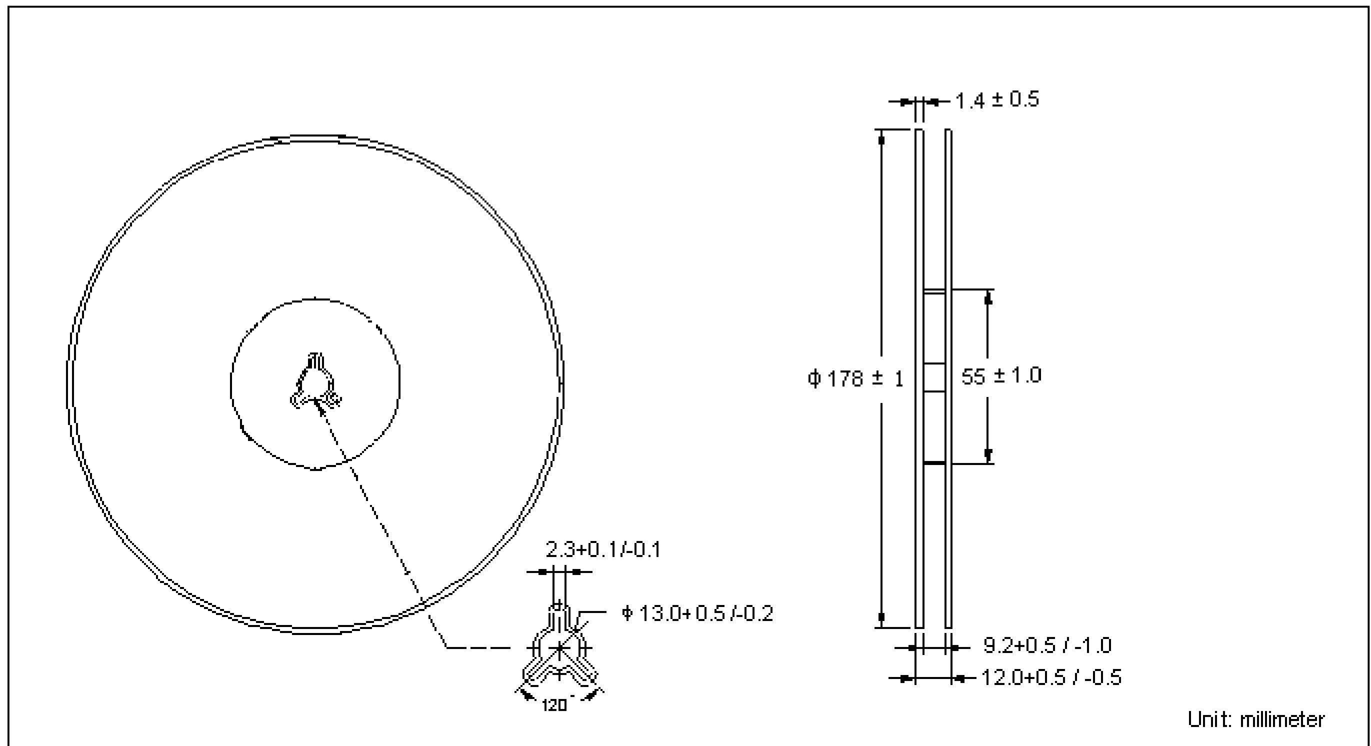
Typical Characteristics



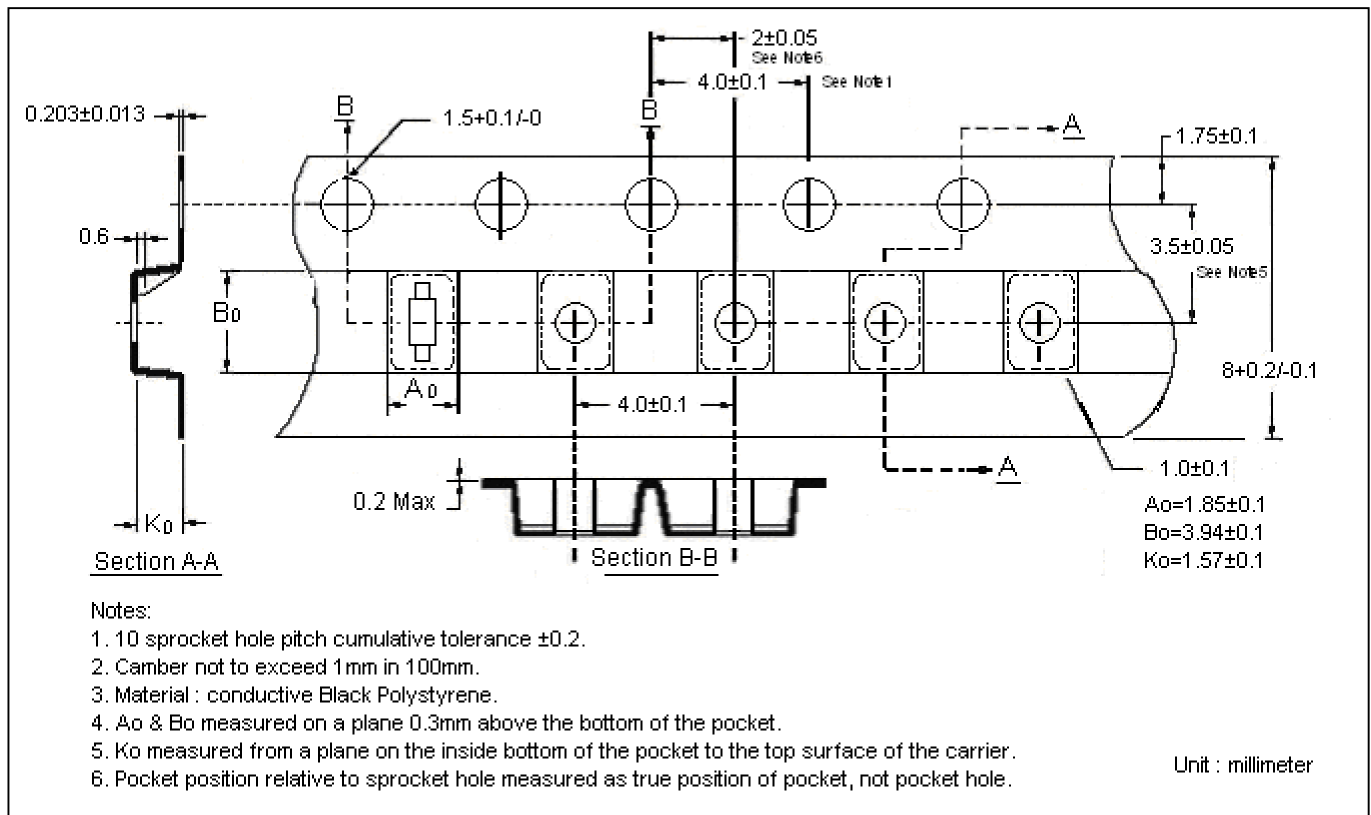




Reel Dimension



Carrier Tape Dimension



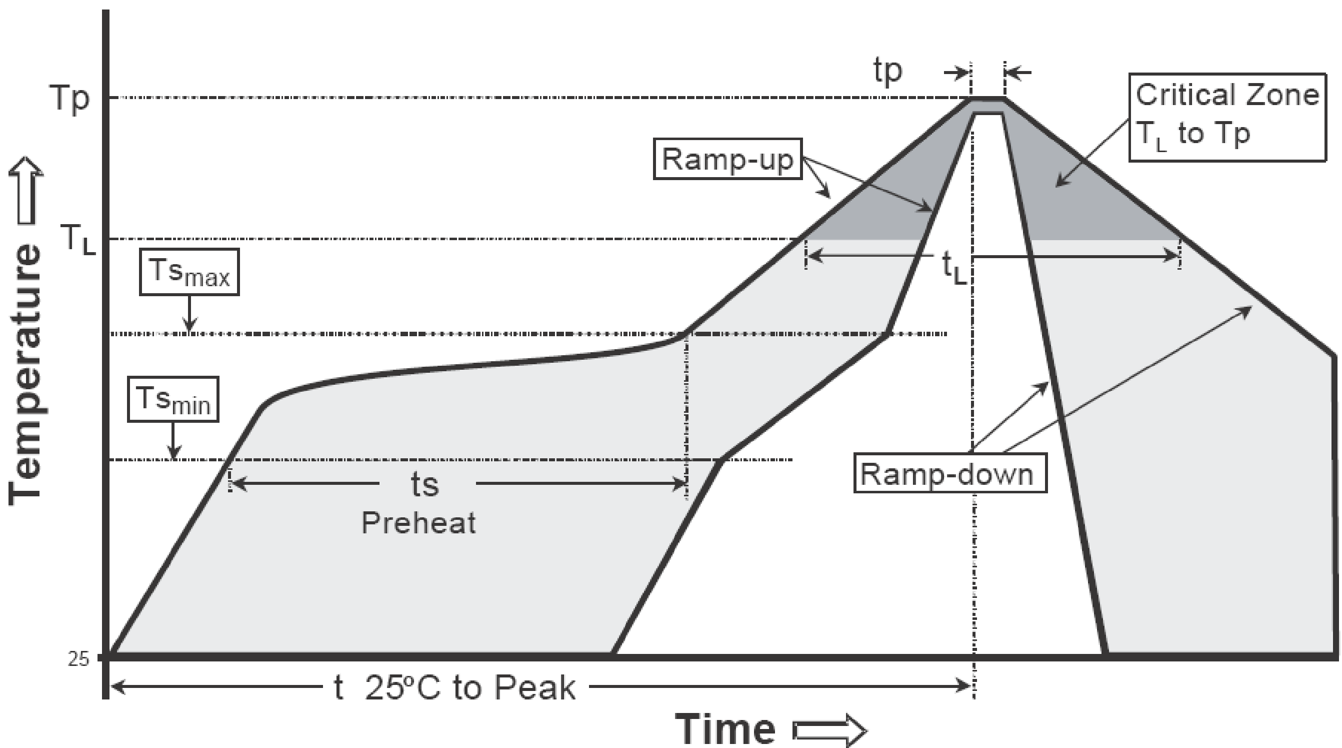
Notes:
1. 10 sprocket hole pitch cumulative tolerance ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material : conductive Black Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

Recommended wave soldering condition

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

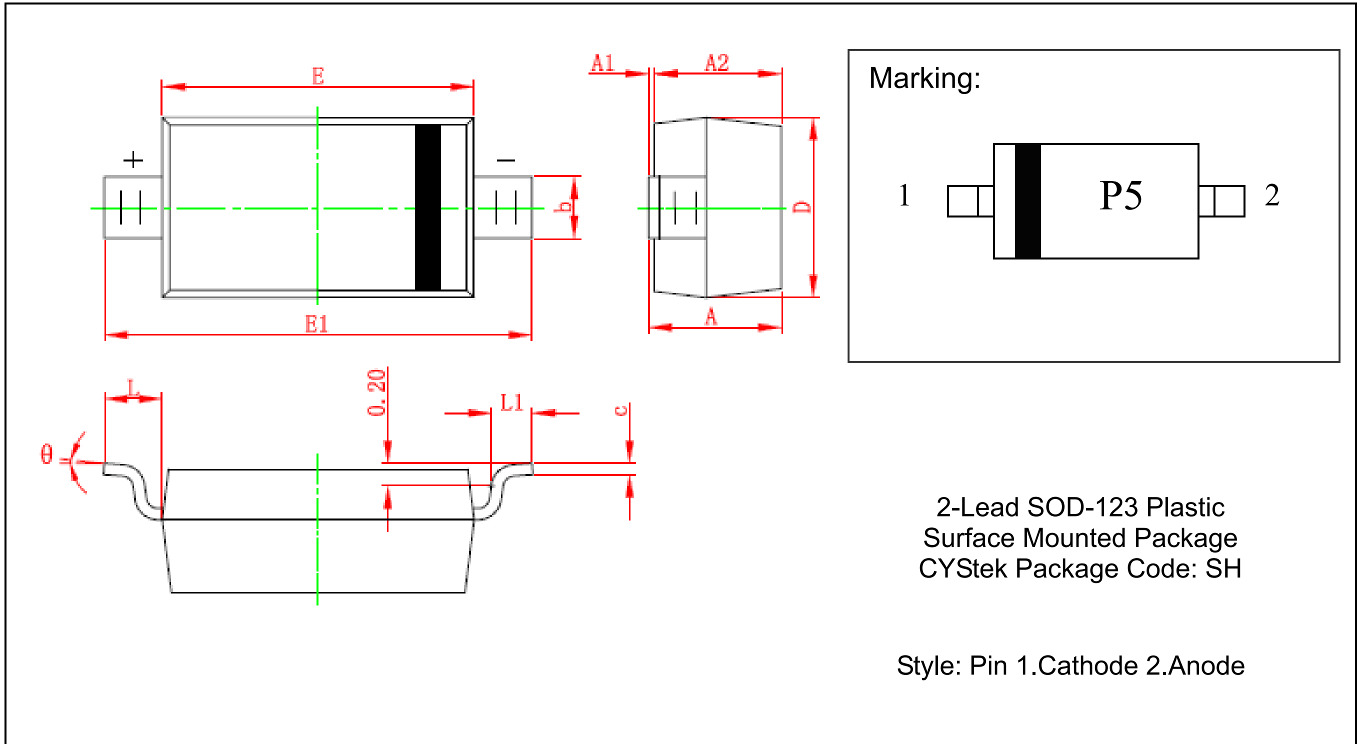
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(T_S min) −Temperature Max(T_S max) −Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: −Temperature (T_L) − Time (t_L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T_P)	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



2-Lead SOD-123 Plastic
Surface Mounted Package
CYStek Package Code: SH

Style: Pin 1.Cathode 2.Anode

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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