0.5A surface mount Schottky diode

RB0540S2

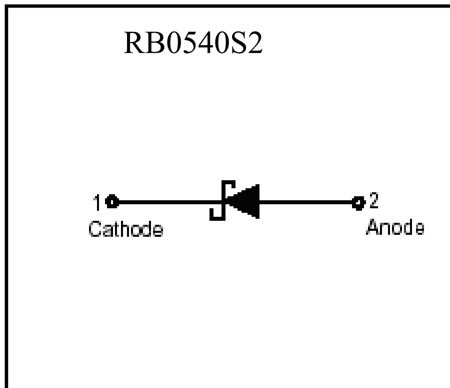
Features

- High current capability, low forward voltage drop
- High surge current capability
- Guardring for over voltage protection
- Low power loss, high efficiency
- Ultra high-speed switching
- Low profile surface mounted package in order to minimize board space

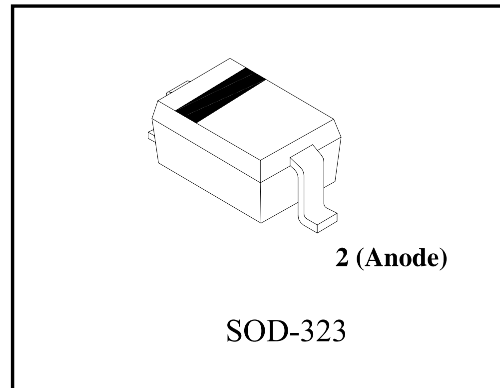
Mechanical data

- Case : Molded plastic, SC-76/SOD323
- Epoxy : UL94-V0 rated flame retardant
- Terminals : Plated terminals, solderable per MIL-STD-750 method 2026
- Polarity : Indicated by cathode band
- Mounting position : Any
- Weight : approx. 0.0045 gram

Symbol

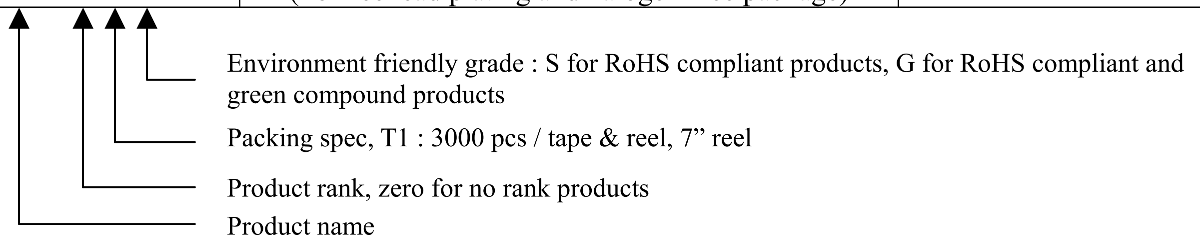


Outline



Ordering Information

Device	Package	Shipping
RB0540S2-0-T1-G	SOD-323 (Pb-free lead plating and halogen-free package)	3000 pcs / tape & reel



Absolute Maximum Ratings (T_A=25℃, unless otherwise noted)

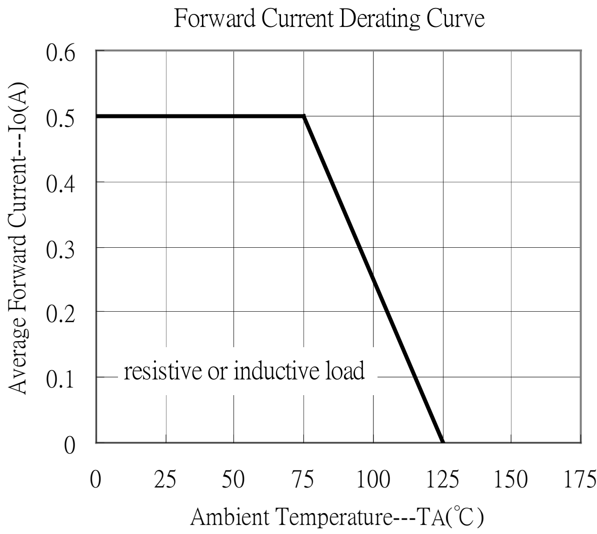
Parameters	Conditions	Symbol	Min	Typ	Max	Units
Repetitive peak reverse voltage		V_{RRM}			40	V
RMS voltage		V_{RMS}			28	V
Continuous reverse voltage		V_R			40	V
Forward rectified current		I_O			0.5	A
	Single phase half wave, 60Hz @T_J=25˚C	$I_{F(AV)}$			1	
Forward surge current	8.3ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}			15	A
Power Dissipation	T_A=25˚C	P_D			0.2	W
					0.83	
Thermal resistance	Junction to Ambient	$R_{\theta JA}$			500	°C/W
	Junction to Ambient (Note)			90	120	
Storage temperature range		Tstg	-65		175	°C
Operating junction temperature range		Tj	-55		125	°C

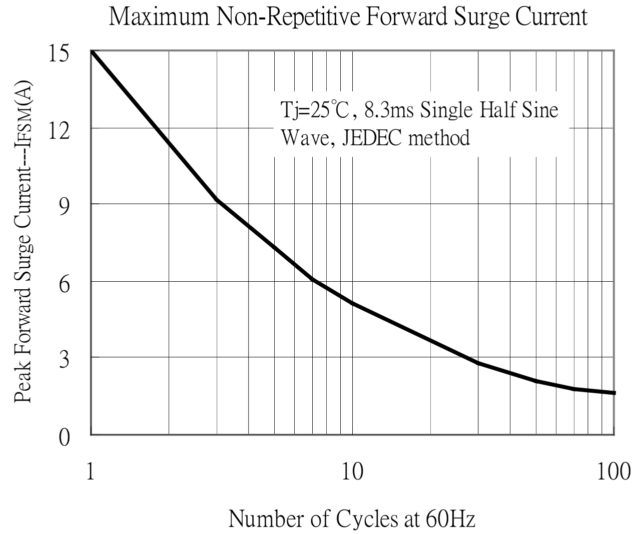
Note : When device is mounted on ceramic board with area of 40x40mm², t≤5s.

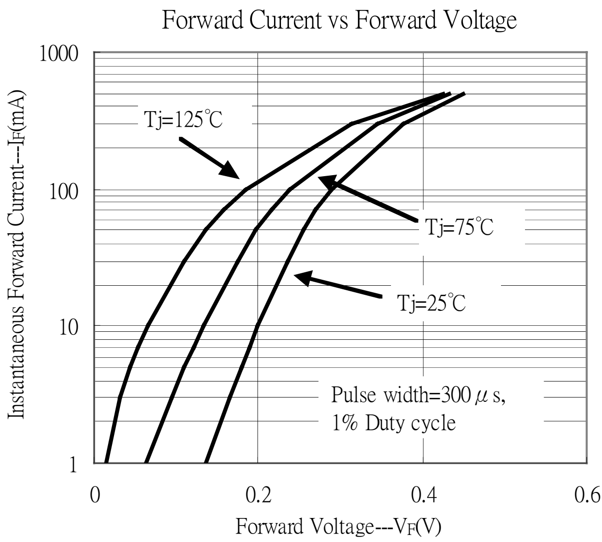
Characteristics (T_A=25°C)

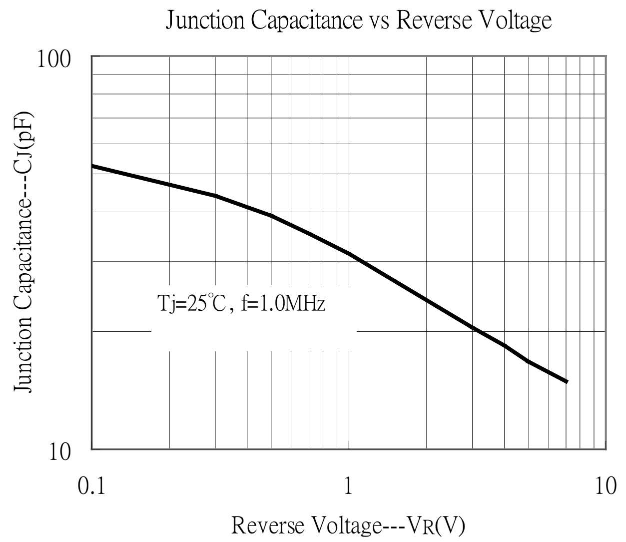
Characteristic	Symbol	Condition	Min.	Typ	Max.	Unit
	V_R	I_R=600μA	40	-	-	V
Forward Voltage	V_F 1	I_F=100mA	-	-	370	mV
	V_F 2	I_F=500mA	-	-	500	
Reverse Leakage Current	I_R 1	V_R=20V	-	-	100	μA
	I_R 2	V_R=40V	-	-	500	μA
	I_R 3	V_R=40V, T_A=75°C	-	-	10	mA
Capacitance Between Terminals	C_T	V_R=4V, f=1MHz	-	18.3	-	pF

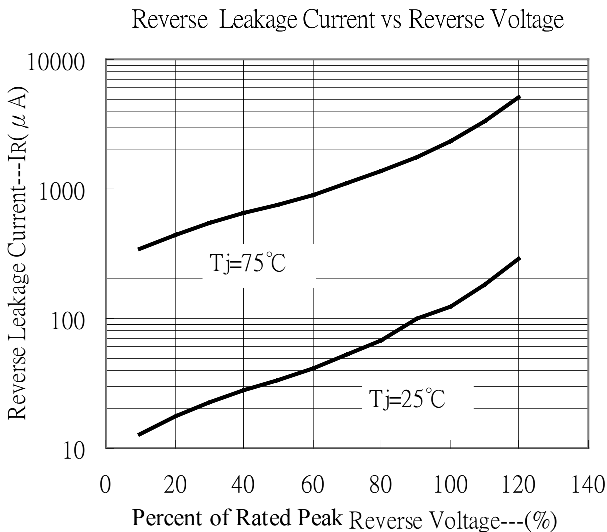
Typical Characteristics



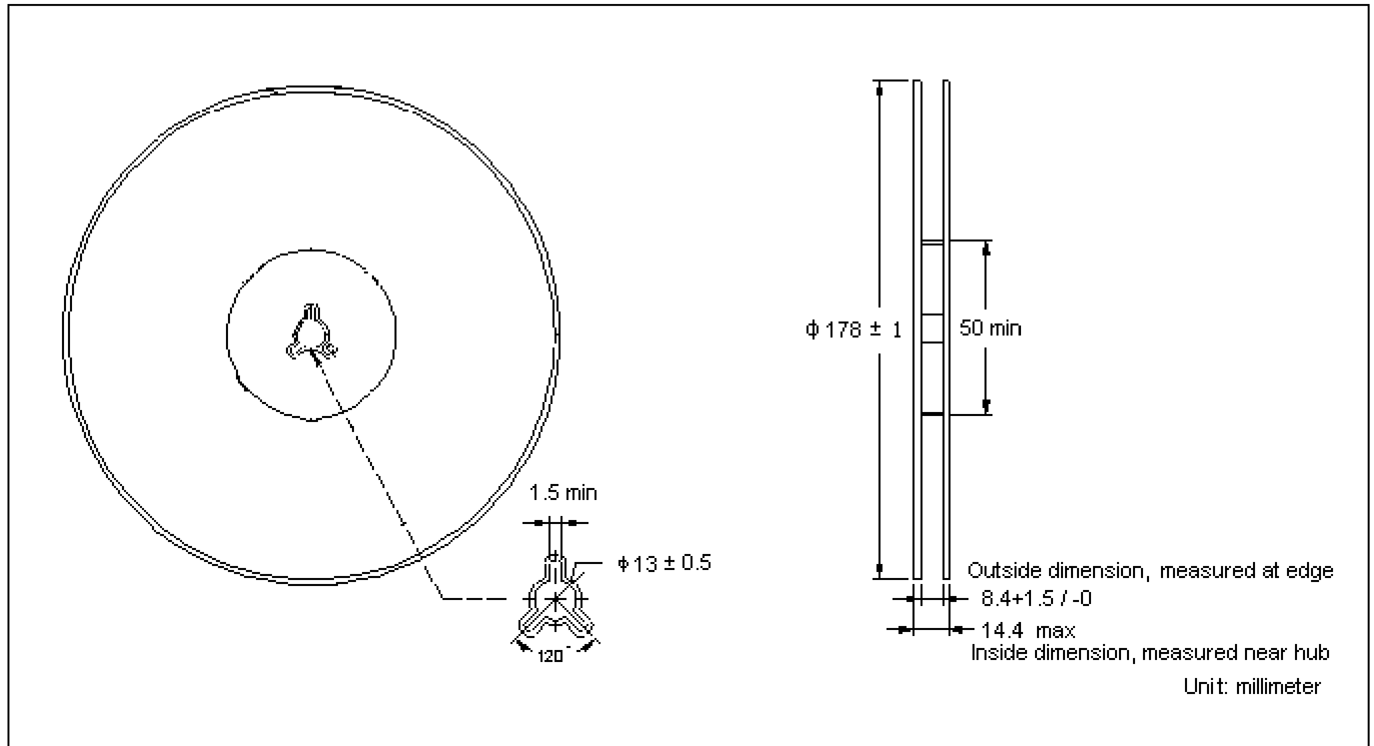




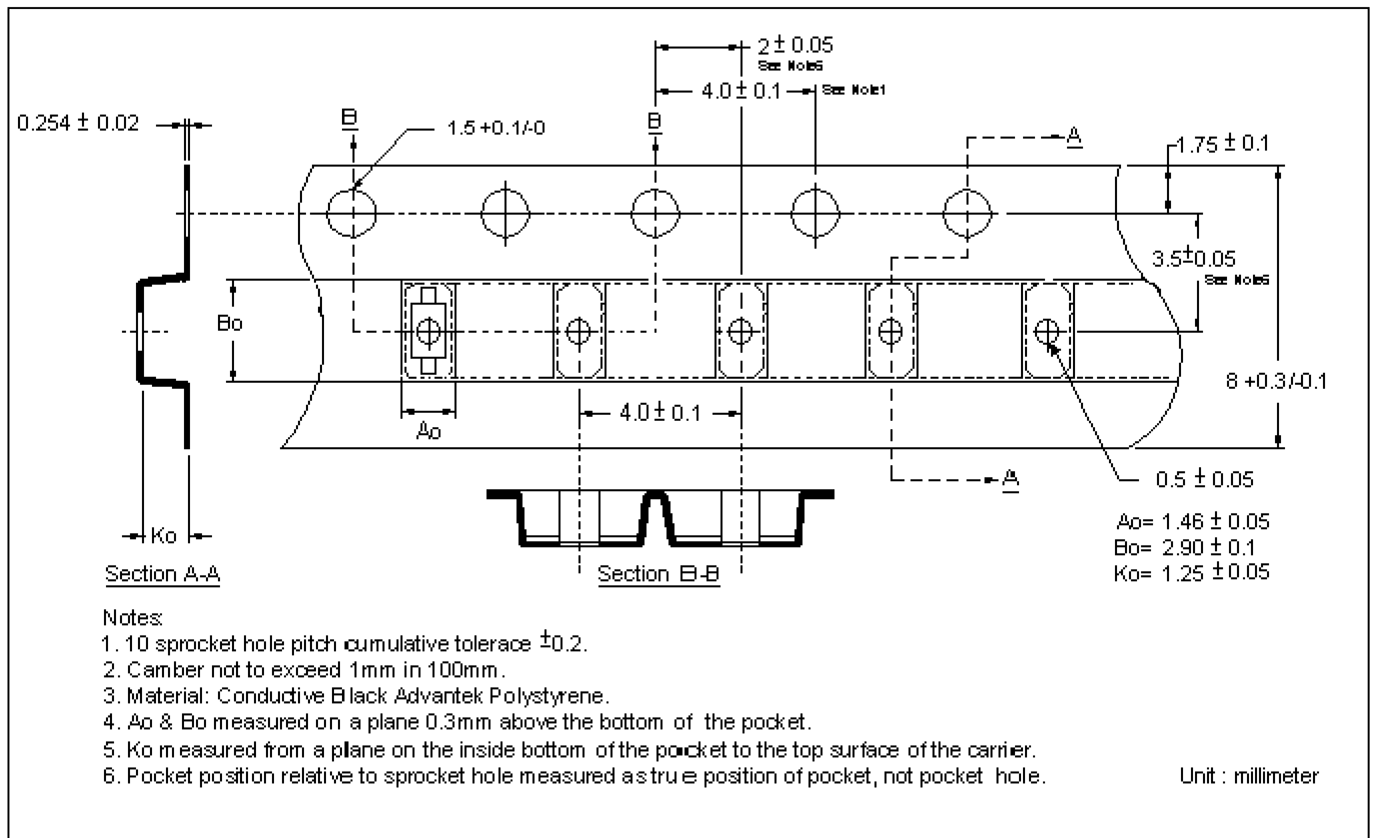




Reel Dimension



Carrier Tape Dimension



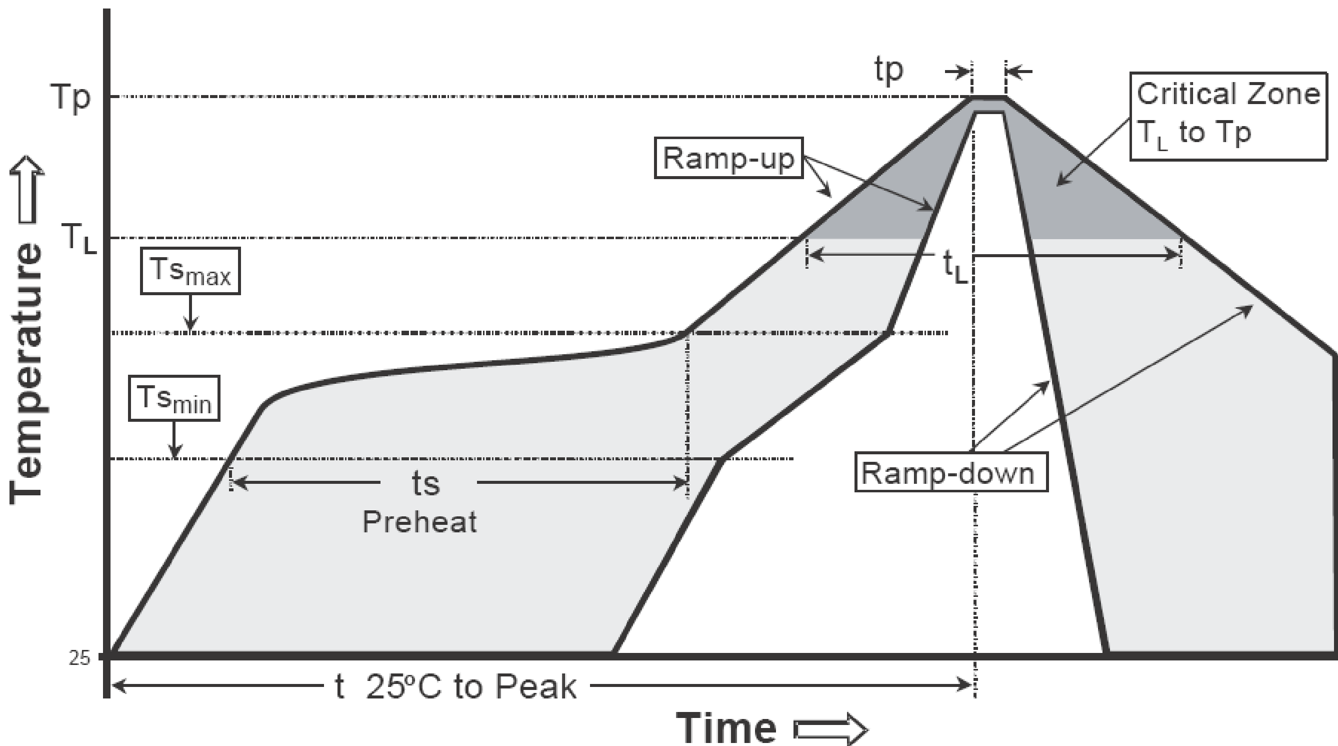
Notes:
1. 10 sprocket hole pitch cumulative tolerace ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material: Conductive Black Advantek Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of 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

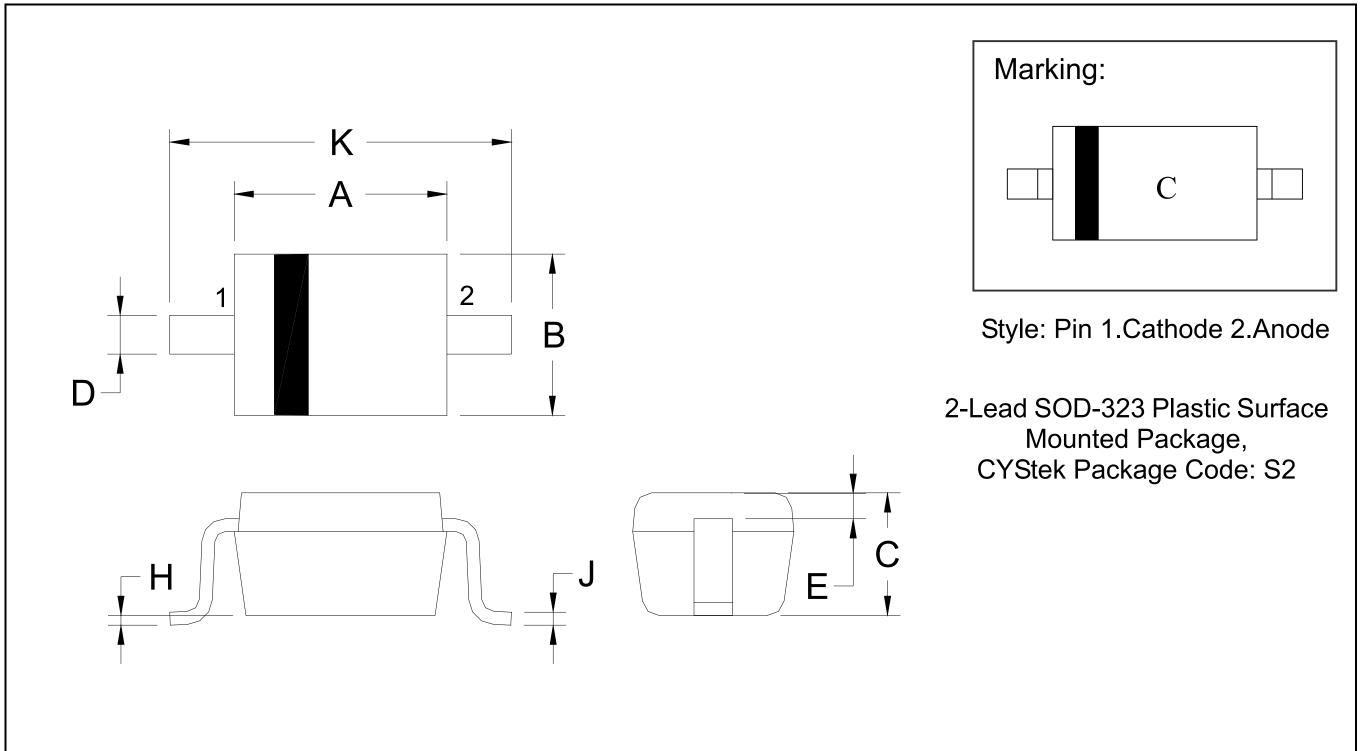
Recommended temperature profile for IR reflow



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-323 Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0630	0.0709	1.60	1.80	E	0.0060 REF		0.15 REF	
B	0.0453	0.0531	1.15	1.35	H	0.0000	0.0040	0.00	0.10
C	0.0315	0.0394	0.80	1.00	J	0.0035	0.0070	0.089	0.177
D	0.0098	0.0157	0.25	0.40	K	0.0906	0.1063	2.30	2.70

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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