

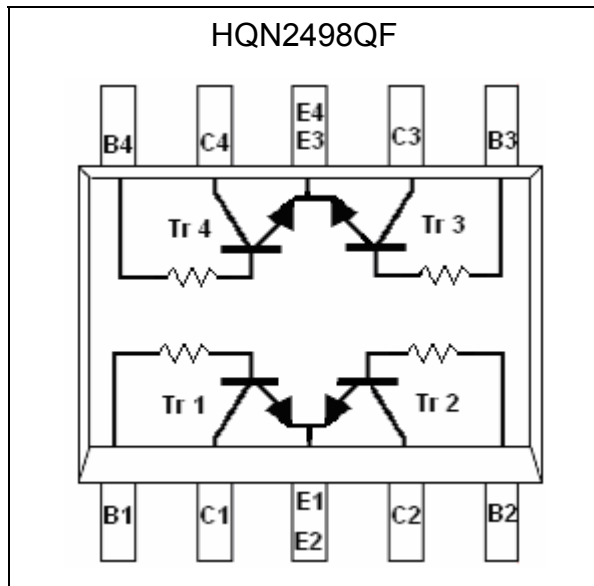
**Quadruple High Voltage NPN Epitaxial Planar Transistor
 Built-in Base Resistor**

HQN2498QF

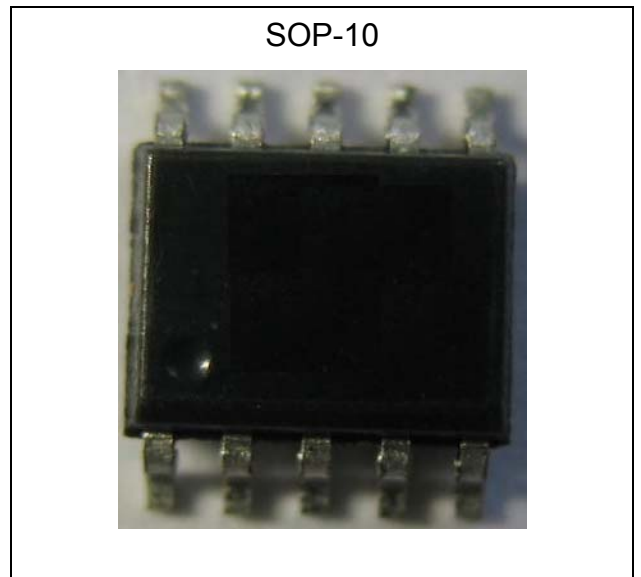
Description

- High breakdown voltage. ($V_{CE0}=400V$)
- Low saturation voltage, typical $V_{CE(sat)}=0.13V$ at $I_c/I_B=20mA/1mA$.
- Complementary to HQP1498QF
- Pb-free package

Equivalent Circuit



Outline



The following ratings and characteristics apply to each transistor in this device.

Absolute Maximum Ratings ($T_a=25^{\circ}C$)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	400	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current	I_c	300	mA
Total Power Dissipation	P_d	1.5	W
Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature	T_{stg}	-55~+150	$^{\circ}C$

**Characteristics (Ta=25°C)**

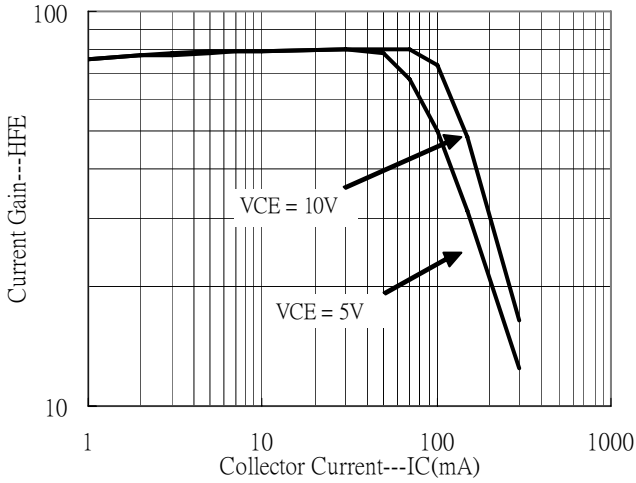
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	400	-	-	V	$I_C=50\mu A$
BV_{CEO}	400	-	-	V	$I_C=1mA$
BV_{EBO}	7	-	-	V	$I_E=50\mu A$
I_{CBO}	-	-	100	nA	$V_{CB}=400V$
I_{CER}	-	-	10	nA	$V_{CE}=300V, R_{EB}=4k\Omega$
I_{EBO}	-	-	100	nA	$V_{EB}=6V$
* $V_{CE(sat)}$	-	0.13	0.18	V	$I_C=20mA, I_B=1mA$
* $V_{CE(sat)}$	-	0.11	0.18	V	$I_C=50mA, I_B=5mA$
* $V_{CE(sat)}$	-	0.16	0.3	V	$I_C=100mA, I_B=10mA$
* $V_{BE(sat)}$	-	-	3.7	V	$I_C=20mA, I_B=2mA$
* h_{FE}	50	-	270	-	$V_{CE}=10V, I_C=10mA$
* h_{FE}	50	-	-	-	$V_{CE}=10V, I_C=100mA$
R	0.7	-	1.3	$k\Omega$	-
f_T	-	100	-	MHz	$V_{CE}=10V, I_C=10mA, f=5MHz$
Cob	-	13	-	pF	$V_{CB}=10V, I_E=0A, f=1MHz$

*Pulse Test: Pulse Width $\leq 380\mu s$, Duty Cycle $\leq 2\%$ **Ordering Information**

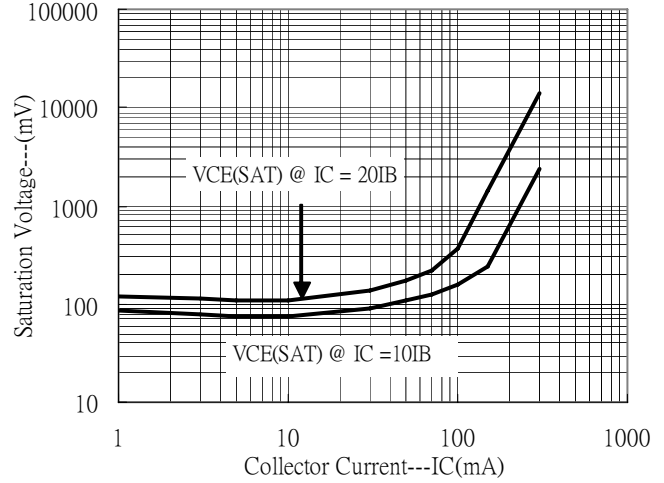
Device	Package	Shipping	Marking
HQN2498QF	SOP-10 (Pb-free)	3000 pcs / Tape & Reel	N2498

Characteristic Curves

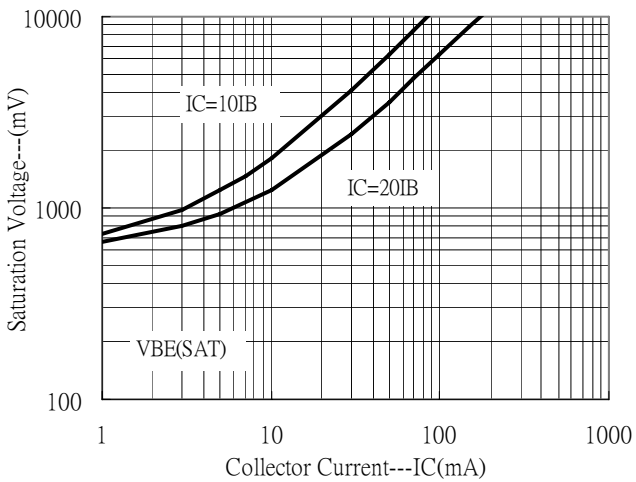
Current Gain vs Collector Current



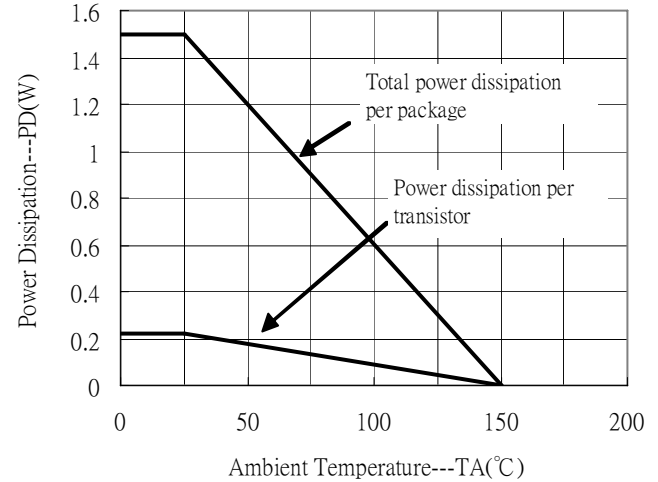
Saturation Voltage vs Collector Current



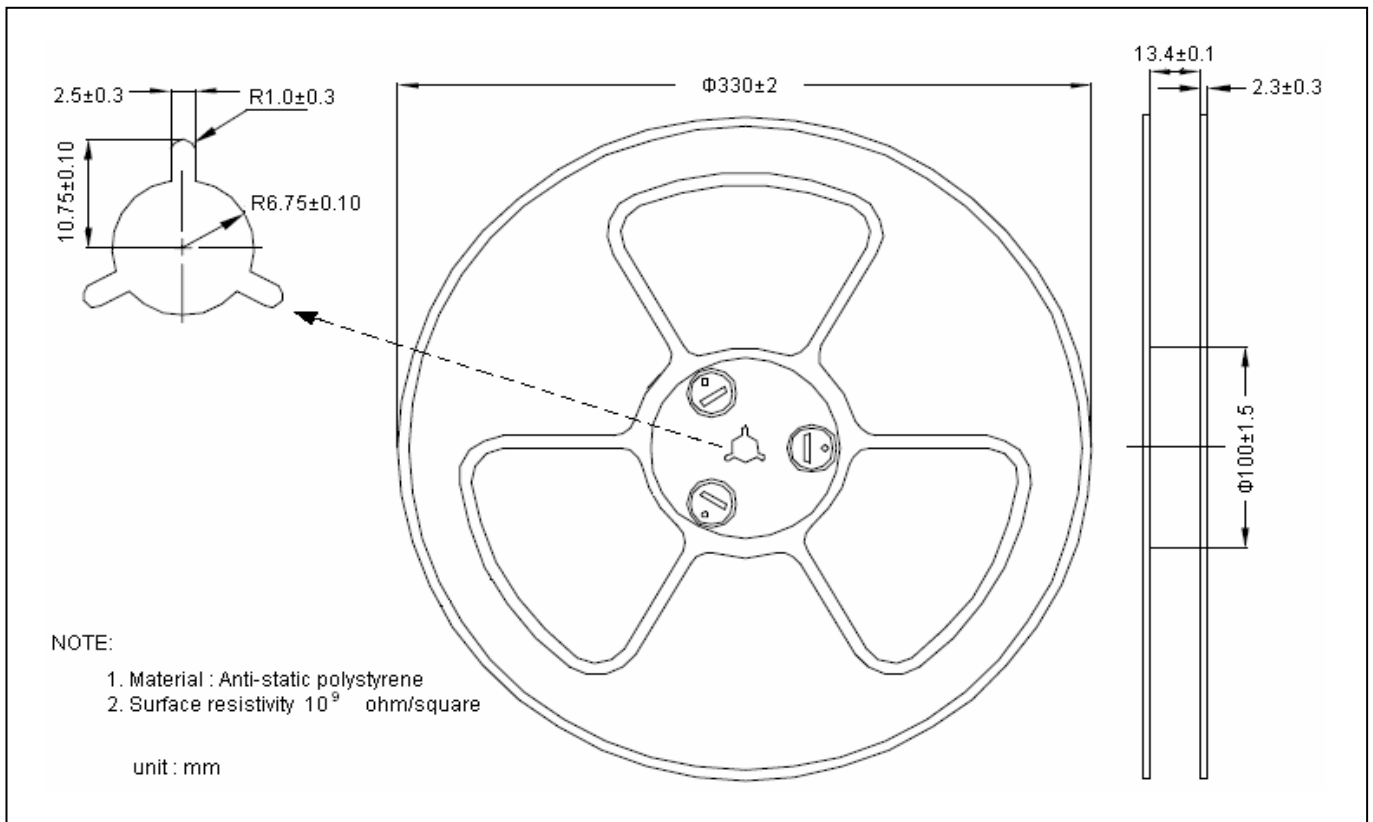
Saturation Voltage vs Collector Current



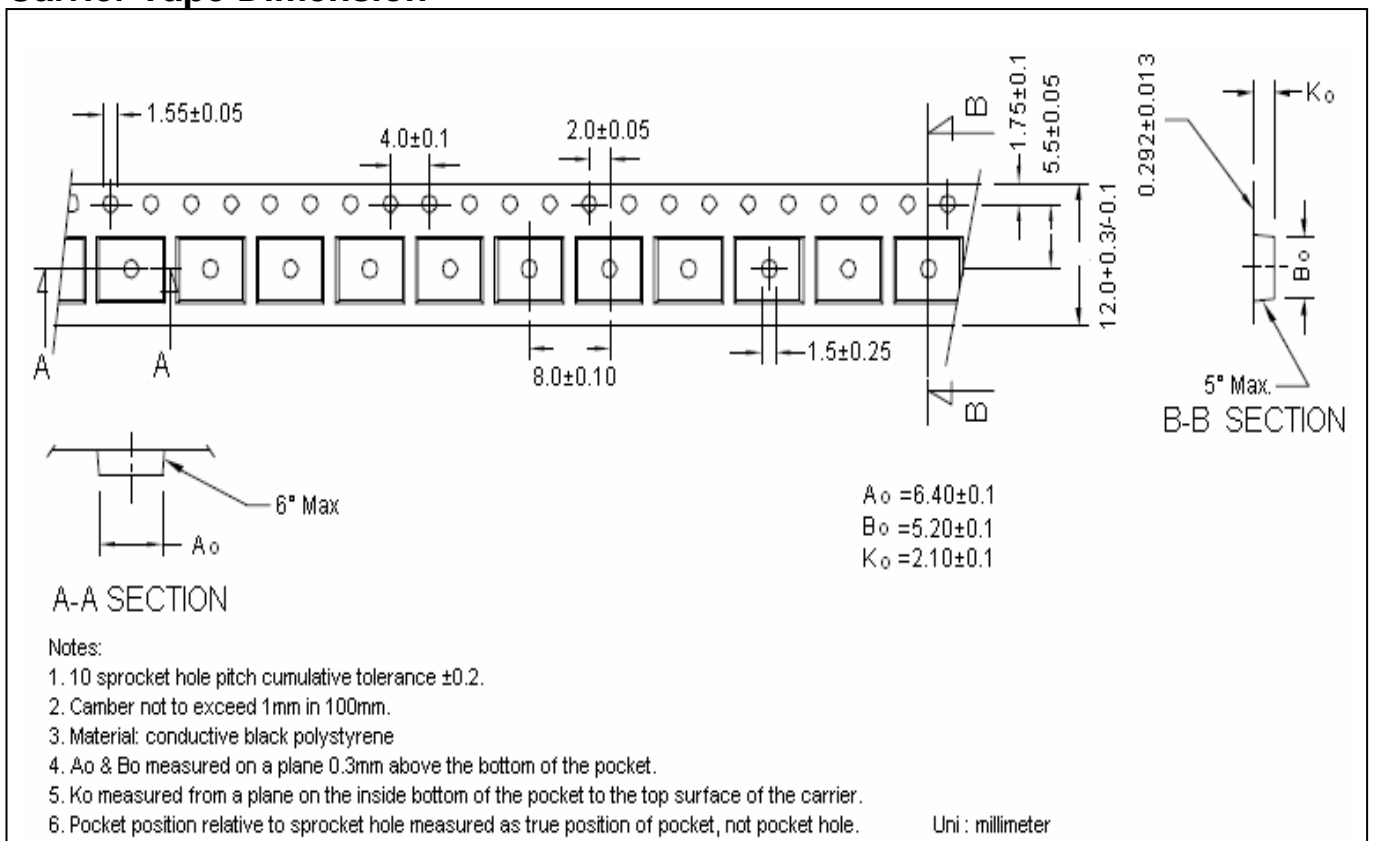
Power Derating Curve



Reel Dimension



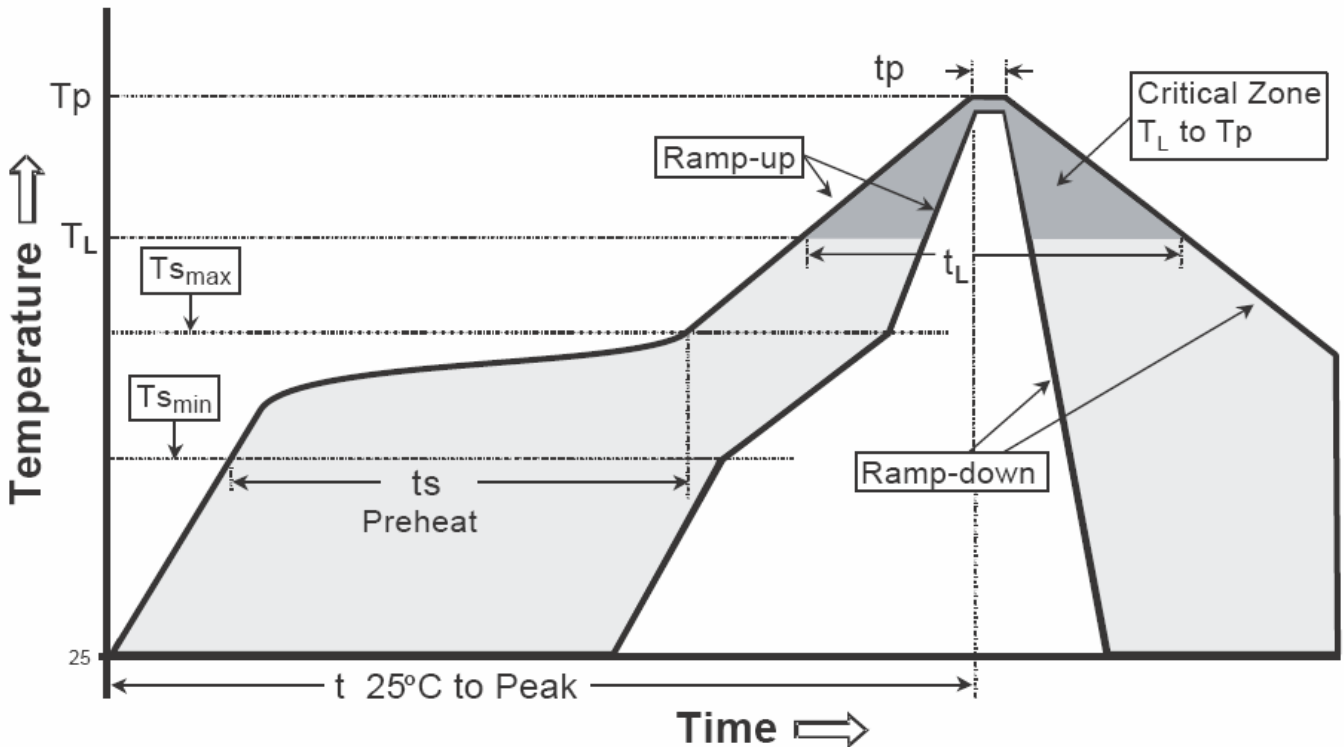
Carrier Tape Dimension



Recommended wave soldering condition

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

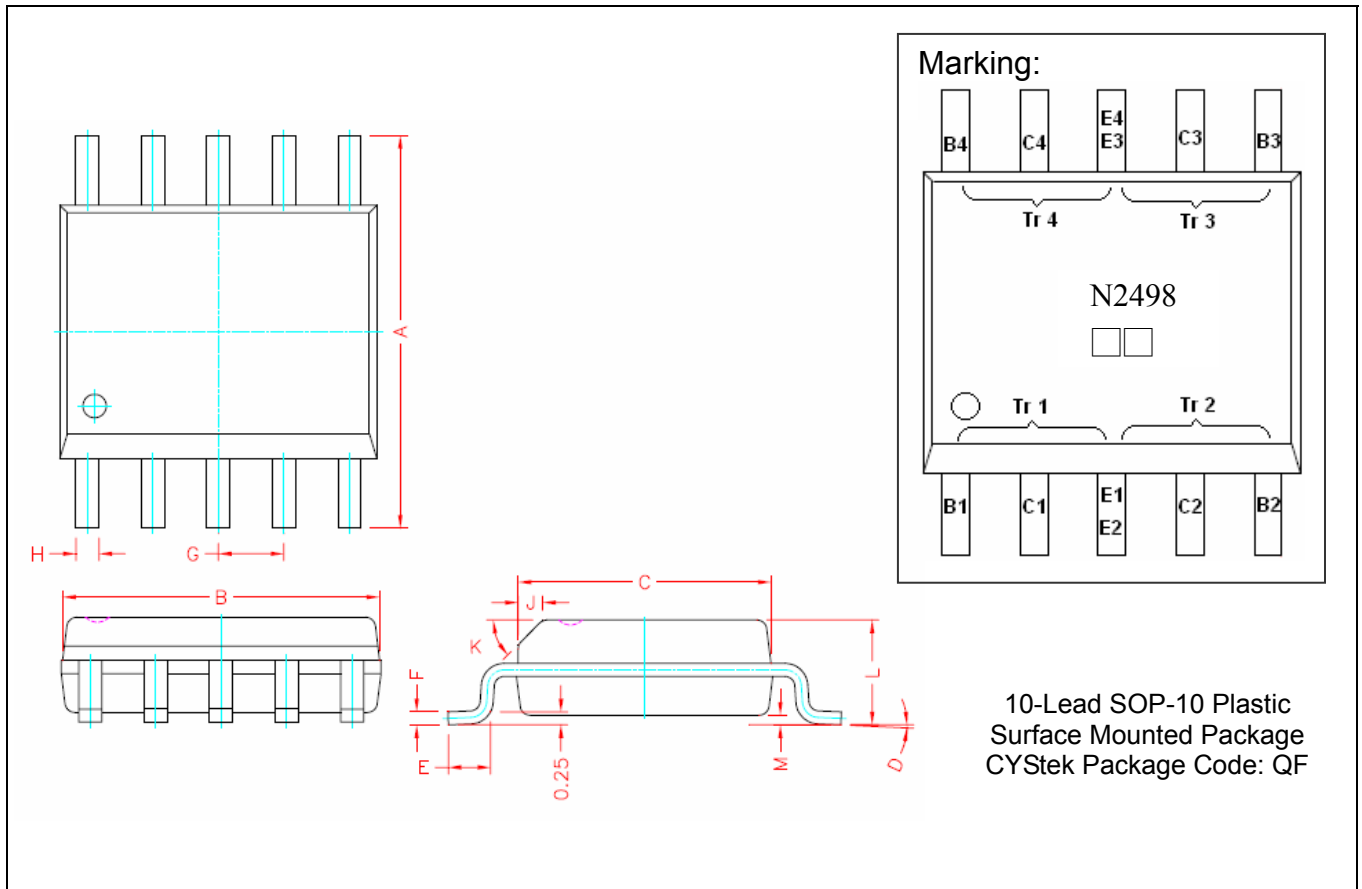
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(T _{s min})	100°C	150°C
-Temperature Max(T _{s max})	150°C	200°C
-Time(t _{s min} to t _{s max})	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (T _L)	183°C	217°C
- Time (t _L)	60-150 seconds	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.

SOP-10 Dimension



10-Lead SOP-10 Plastic Surface Mounted Package
 CYStek Package Code: QF

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.2283	0.2441	5.80	6.20	M	0.0039	0.0098	0.10	0.25
B	0.1990	0.1969	4.80	5.00	H	0.0118	0.0173	0.30	0.44
C	0.1496	0.1575	3.80	4.00	L	0.0531	0.0689	1.35	1.75
D	0°	8°	0°	8°	J	0.0148 REF.		0.375 REF.	
E	0.0157	0.0354	0.40	0.90	K	45° TYP.		45° TYP.	
F	0.0075	0.0098	0.19	0.25	G	0.0394		1.00 TYP.	

Notes: 1.Controlling dimension: millimeters.
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
 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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