

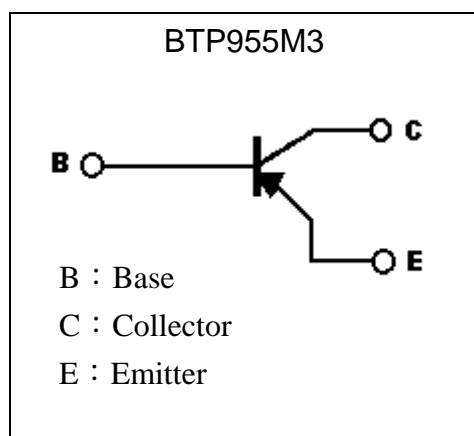
PNP Epitaxial Planar High Current (High Performance) Transistor

BTP955M3

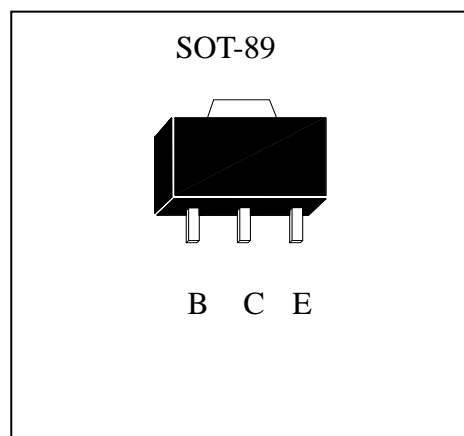
Features

- 3 Amps continuous current, up to 10 Amps peak current
- Very low saturation voltage
- Excellent gain characteristics specified up to 3 Amps
- Extremely low equivalent on resistance, $R_{CE(SAT)}=75m\Omega$ at 3A
- Pb-free lead plating and halogen-free package

Symbol

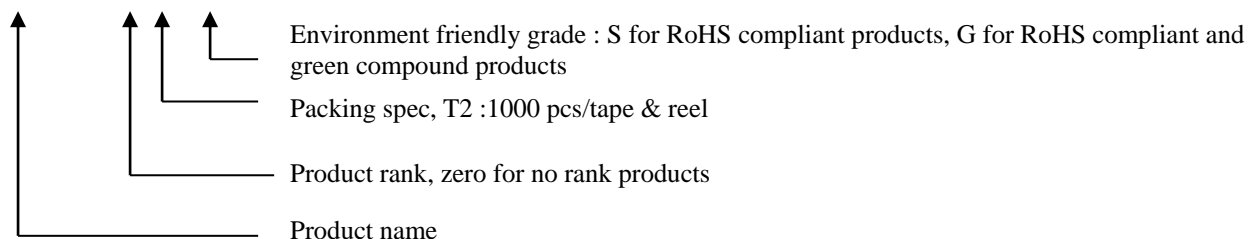


Outline



Ordering Information

Device	Package	Shipping
BTP955M3-0-T2-G	SOT-89 (Pb-free lead plating and halogen-free package)	1000 pcs / Tape & Reel





Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V _{CB0}	-180	V
Collector-Emitter Voltage	V _{CEO}	-140	V
Emitter-Base Voltage	V _{EBO}	-7	V
Continuous Collector Current	I _C	-3	A
Peak Collector Current	I _{CP}	-10	A
Base Current	I _B	-1	A
Power Dissipation	P _d	0.6	W
		1.5 (Note 1)	
		2.1 (Note 2)	
ESD susceptibility		4000 (Note 3)	V
Operating and Storage Temperature Range	T _j ; T _{stg}	-55 ~ +150	°C

Note : 1. When mounted on FR-4 PCB with area measuring 25×25×1.6 mm
 2. When mounted on ceramic with area measuring 50×50×1.6 mm
 3. Human body model, 1.5kΩ in series with 100pF

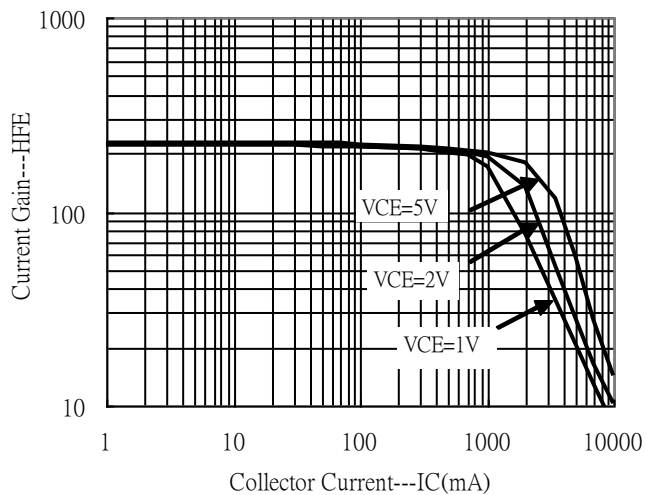
Characteristics (Ta=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CB0}	-180	-220	-	V	I _C =-100μA
BV _{CER}	-180	-220	-	V	I _C =-1μA, R _{BE} ≤1kΩ
*BV _{CEO}	-140	-170	-	V	I _C =-10mA
BV _{EBO}	-7	-8.3	-	V	I _E =-100μA
IC _{B0}	-	-	-50	nA	V _{CB} =-150V
IC _{ER}	-	-	-50	nA	V _{CE} =-150V, R _{BE} ≤1kΩ
IE _{B0}	-	-	-10	nA	V _{EB} =-6V
*V _{CE(sat)1}	-	-30	-60	mV	I _C =-100mA, I _B =-5mA
*V _{CE(sat)2}	-	-50	-75	mV	I _C =-500mA, I _B =-50mA
*V _{CE(sat)3}	-	-110	-165	mV	I _C =-1A, I _B =-100mA
*V _{CE(sat)4}	-	-220	-330	mV	I _C =-3A, I _B =-300mA
*V _{BE(sat)}	-	-910	-1010	mV	I _C =-3A, I _B =-300mA
*V _{BE(on)}	-	-800	-900	mV	V _{CE} =-5V, I _C =-3A
h _{FE1}	100	-	-	-	V _{CE} =-5V, I _C =-10mA
h _{FE2}	100	-	300	-	V _{CE} =-5V, I _C =-1A
*h _{FE3}	75	-	-	-	V _{CE} =-5V, I _C =-3A
*h _{FE4}	-	10	-	-	V _{CE} =-5V, I _C =-10A
f _T	-	120	-	MHz	V _{CE} =-10V, I _C =-100mA, f=50MHz
C _{ob}	-	35	-	pF	V _{CB} =-10V, f=1MHz
ton		50		ns	I _C =-1A, I _{B1} =-100mA, I _{B2} =100mA,
toff		700		ns	V _{CC} =-50V

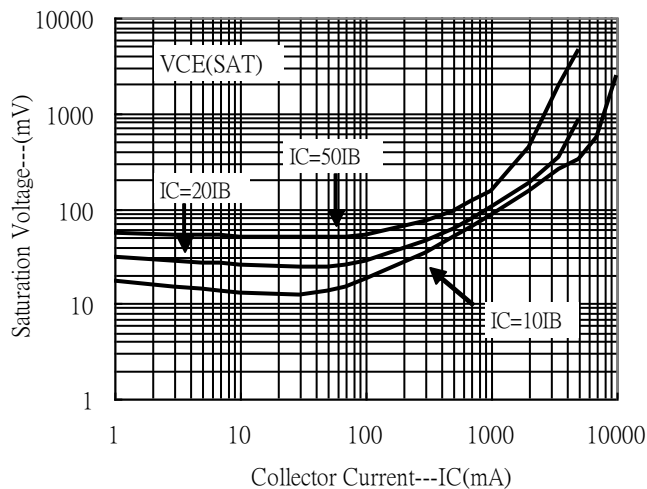
*Pulse Test: Pulse Width ≤300μs, Duty Cycle≤2%

Typical Characteristics

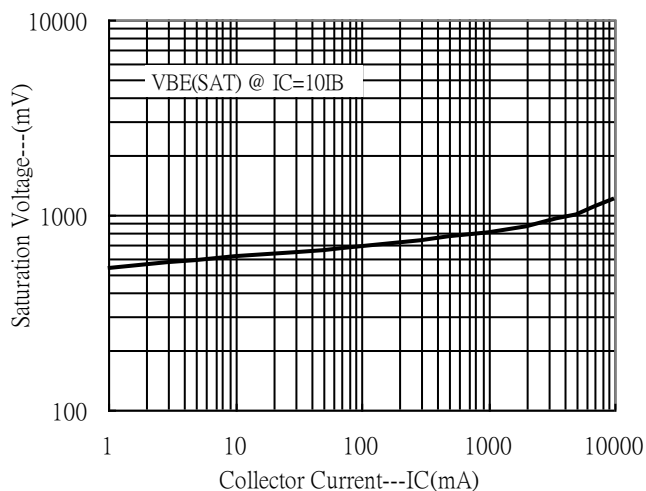
Current Gain vs Collector Current



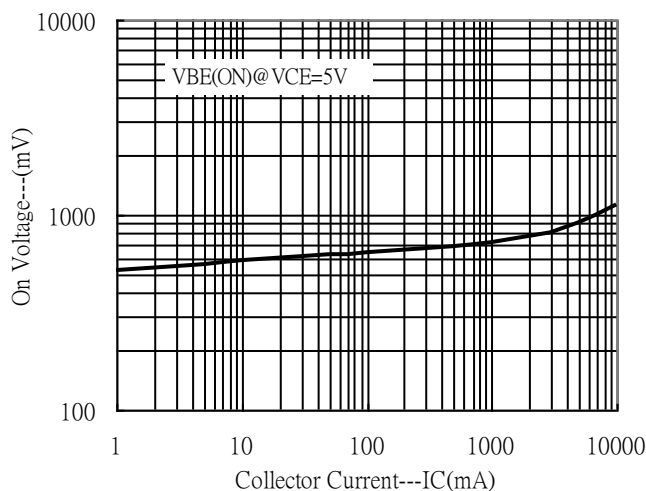
Saturation Voltage vs Collector Current



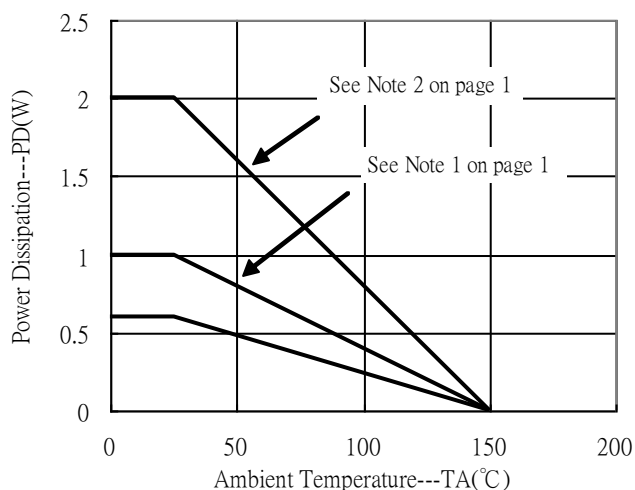
Saturation Voltage vs Collector Current



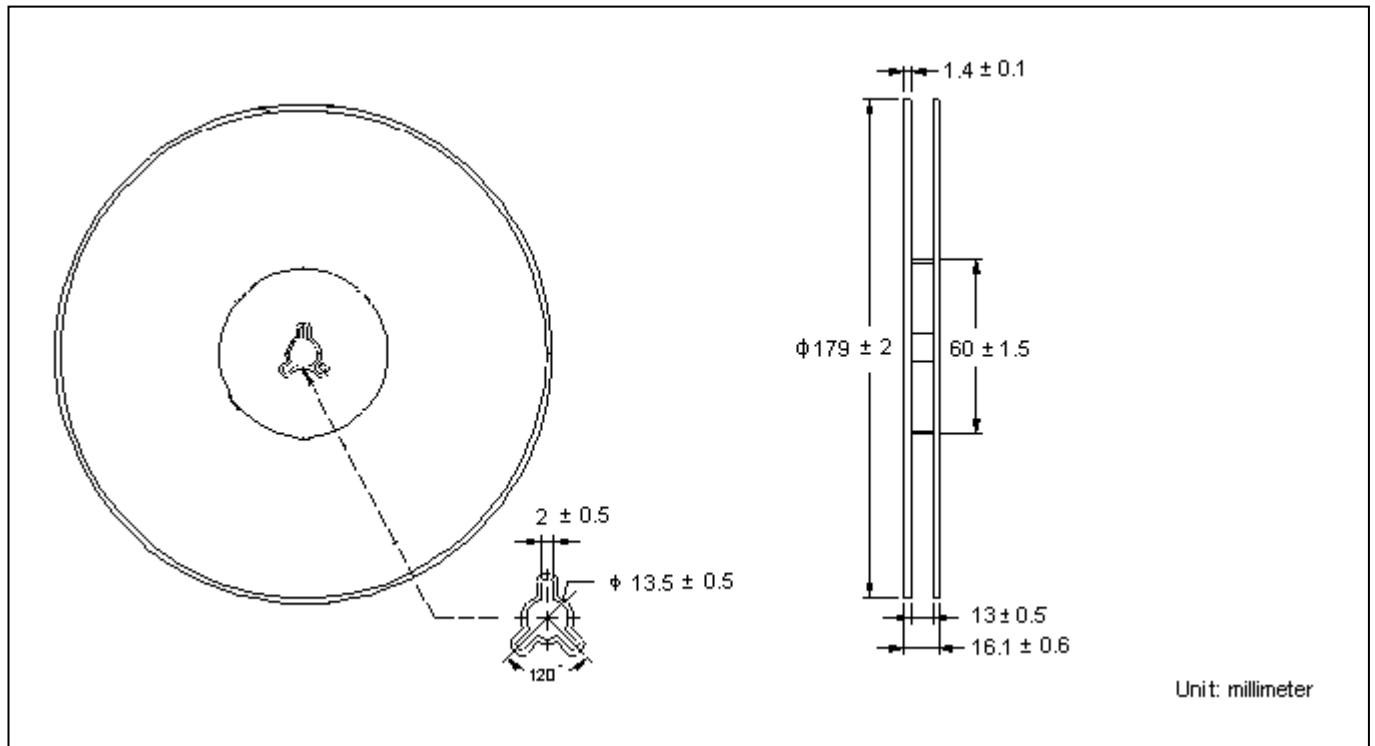
On Voltage vs Collector Current



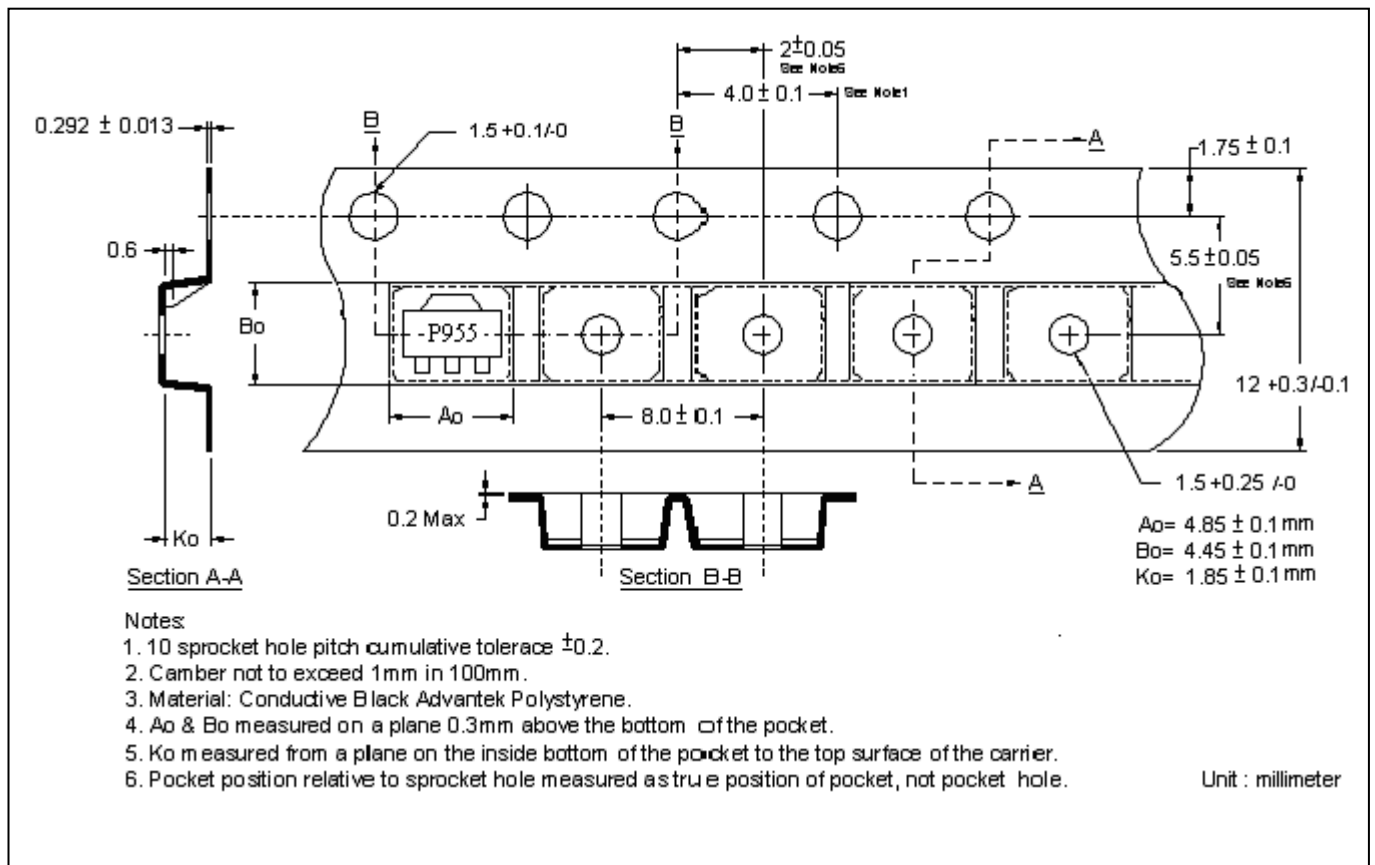
Power Derating Curve



Reel Dimension



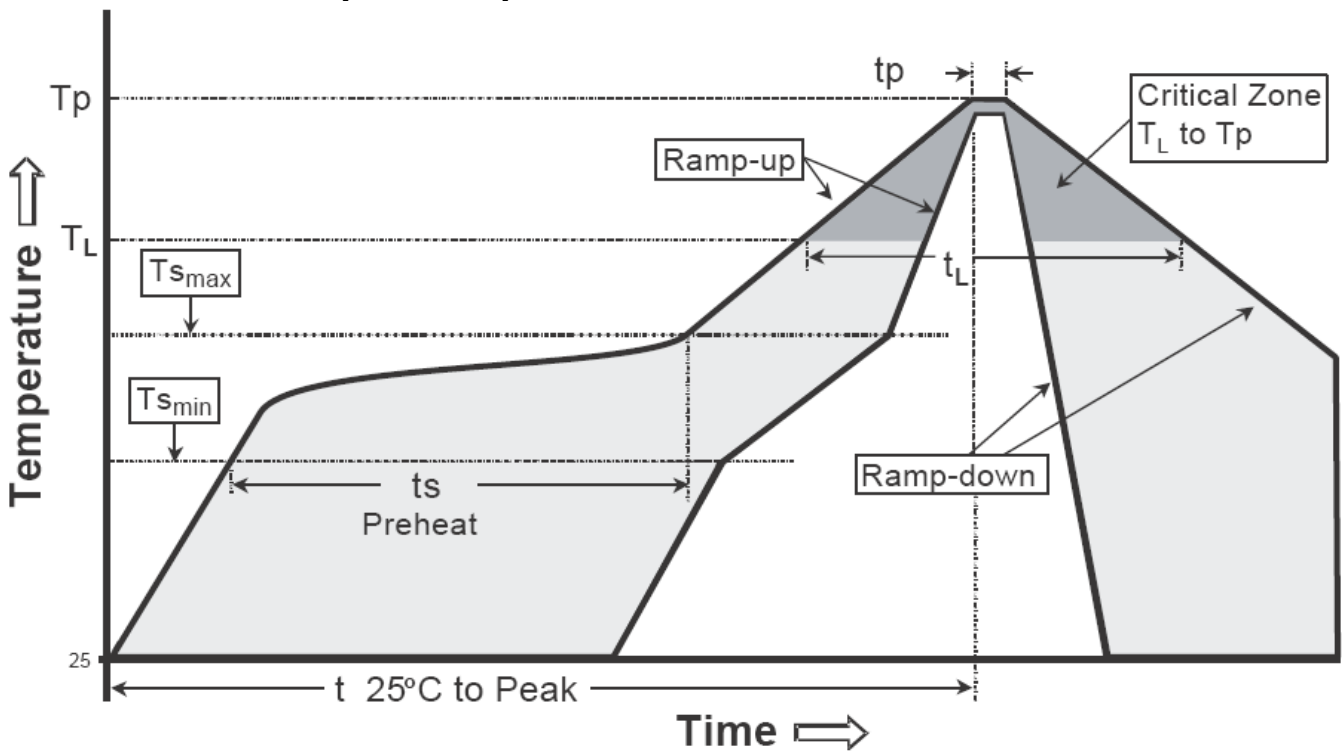
Carrier Tape Dimension



Recommended wave soldering condition

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

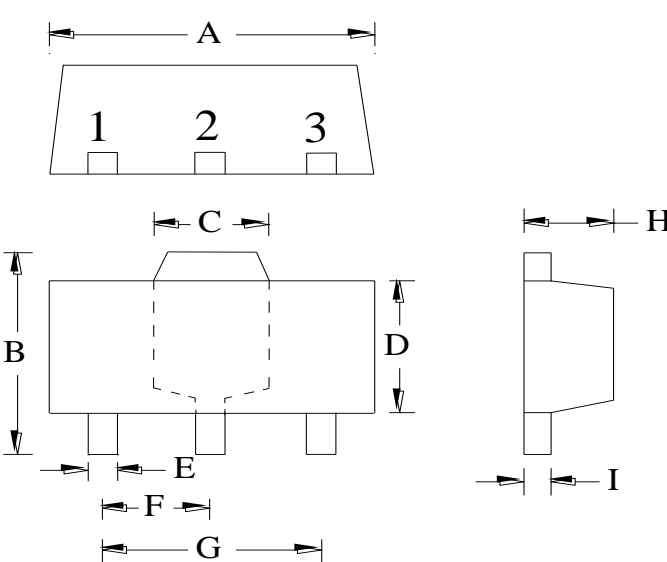
Recommended temperature profile for IR reflow



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.

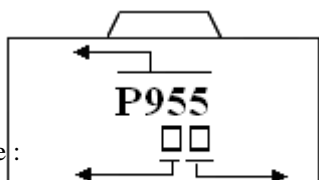
Note :1. All temperatures refer to topside of the package, measured on the package body surface.
 2. For devices mounted on FR-4 PCB of 1.6mm or equivalent grade PCB. If other grade PCB is used, care should be taken to match the coefficients of thermal expansion between components and PCB. If they are not matched well, the solder joints may crack or the bodies of the parts may crack or shatter as the assembly cools.

SOT-89 Dimension



The diagram shows three views of the SOT-89 package: a top view with dimensions A, C, E, F, and G; a front view with dimensions B, D, and I; and a side view with dimension H. The top view also labels the three pins as 1, 2, and 3.

Marking:



Product Name: P955

Year code: 6→2016, 7→2017,...

Month code: 1~9, A,B,C

Style: Pin 1. Base 2. Collector 3. Emitter

3-Lead SOT-89 Plastic
 Surface Mounted Package
 CYStek Package Code: M3

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1732	0.1811	4.40	4.60	F	0.0583	0.0598	1.48	1.527
B	0.1594	0.1673	4.05	4.25	G	0.1165	0.1197	2.96	3.04
C	0.0591	0.0663	1.50	1.70	H	0.0551	0.0630	1.40	1.60
D	0.0945	0.1024	2.40	2.60	I	0.0138	0.0161	0.35	0.41
E	0.01417	0.0201	0.36	0.51					

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