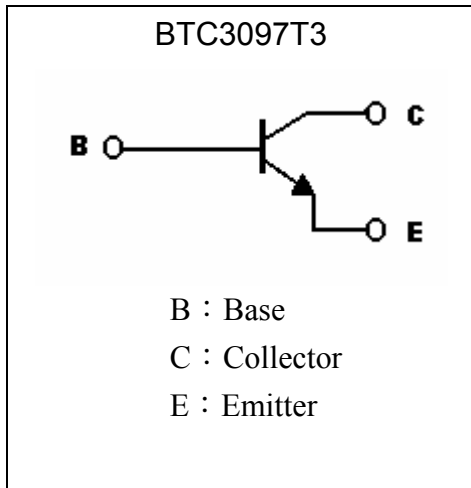
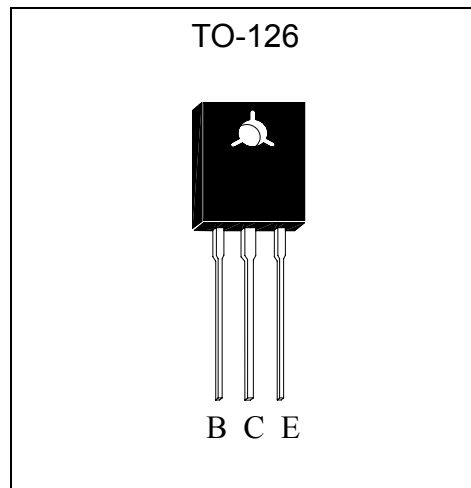


High Voltage NPN Triple Diffused Planar Transistor

BTC3097T3

Features

- High voltage, $BV_{CBO}=1600V$ min., $BV_{CEO}=800V$ min.
- Pb-free lead plating package

Symbol

Outline

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

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	1600	V
Collector-Emitter Voltage	V_{CEO}	800	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	$I_C(DC)$	1	A
	$I_C(Pulse)$	3 *1	A
Power Dissipation	$P_d(T_a=25^\circ C)$	1	W
	$P_d(T_c=25^\circ C)$	10	
Operating Junction and Storage Temperature Range	$T_j ; T_{stg}$	-55~+150	$^\circ C$

 Note : *1. Single Pulse $P_w \leq 300\mu s, Duty \leq 2\%$.

**Characteristics (Ta=25°C)**

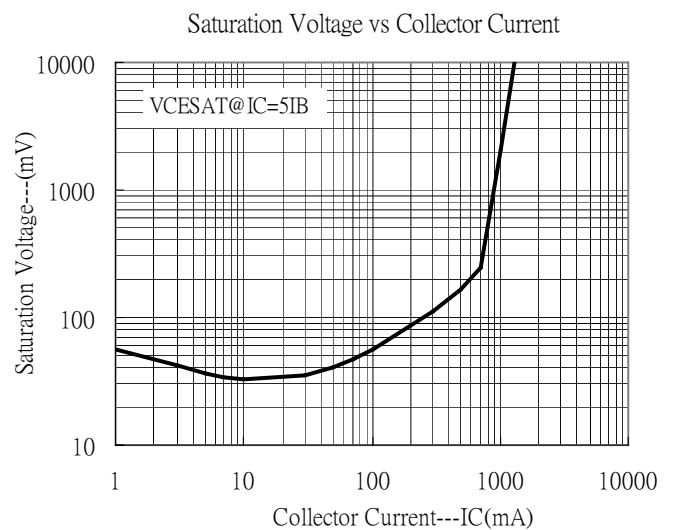
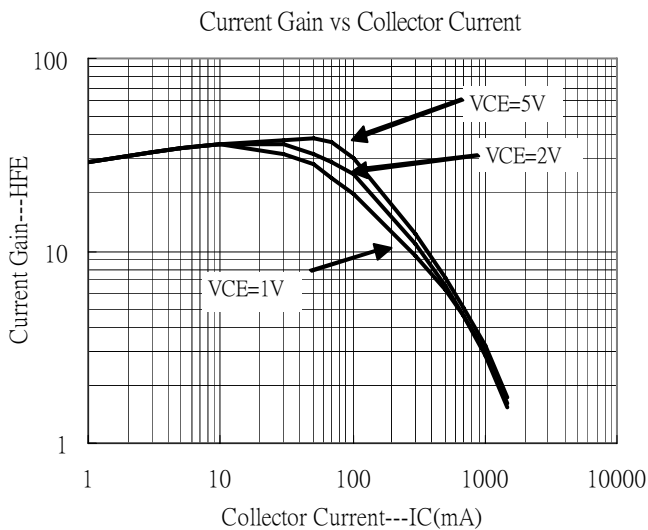
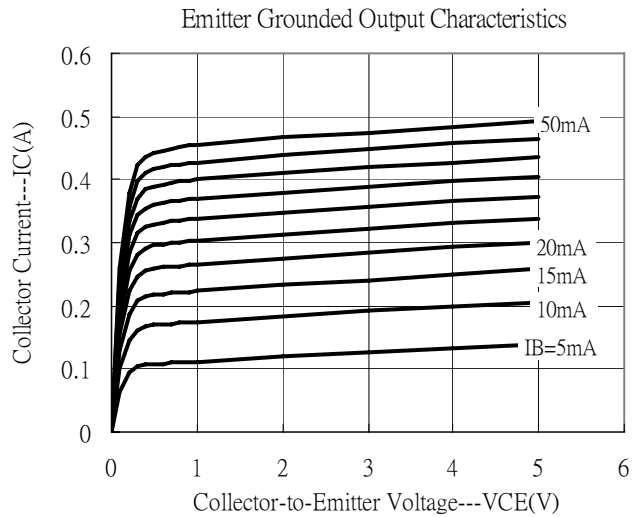
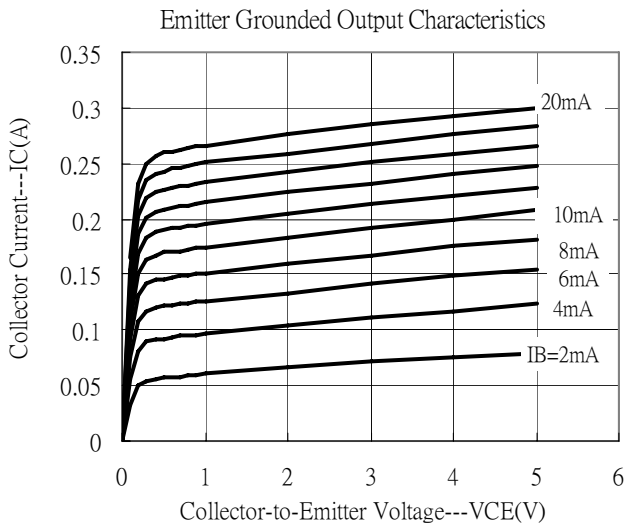
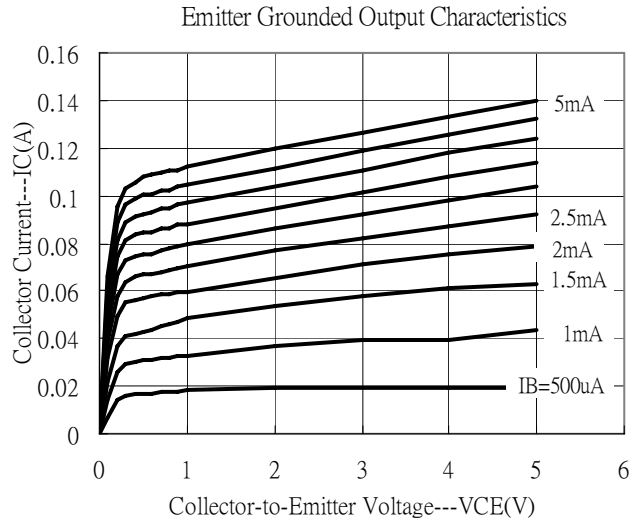
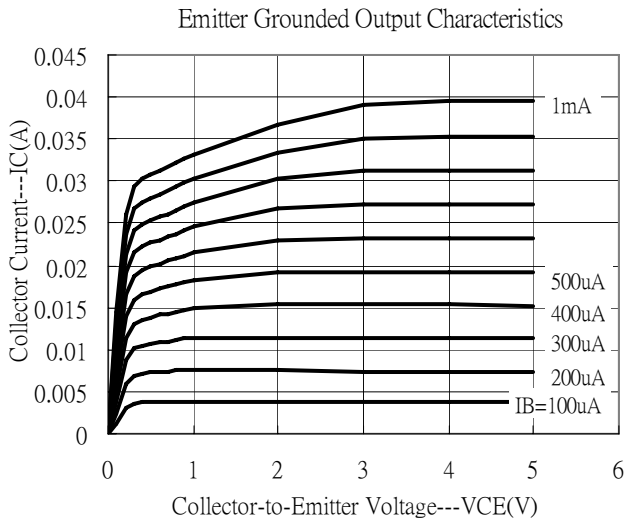
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CB0}	1600	-	-	V	I _C =100μA, I _E =0
BV _{CEO}	800	-	-	V	I _C =1mA, I _B =0
BV _{EBO}	6	-	-	V	I _E =100μA, I _C =0
I _{CB0}	-	-	10	μA	V _{CB} =1600V, I _E =0
I _{CEO}	-	-	10	μA	V _{CB} =800V, I _B =0
I _{EBO}	-	-	100	nA	V _{EB} =6V, I _C =0
*V _{CE(sat)}	-	-	0.2	V	I _C =200mA, I _B =40mA
*V _{CE(sat)}	-	-	0.35	V	I _C =500mA, I _B =100mA
*V _{BE(sat)}	-	-	1.2	V	I _C =500mA, I _B =100mA
*h _{FE1}	20	-	-	-	V _{CE} =5V, I _C =10mA
*h _{FE2}	24	-	35	-	V _{CE} =5V, I _C =100mA
*h _{FE3}	5	-	-	-	V _{CE} =5V, I _C =500mA
Cob	-	10	-	pF	V _{CB} =10V, f=1MHz
tr	-	-	0.8	μs	V _{CC} =400V, I _C =0.5A, I _{B1} =0.1A I _{B2} =-0.2A
tstg	-	-	3		
tf	-	-	0.4		

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

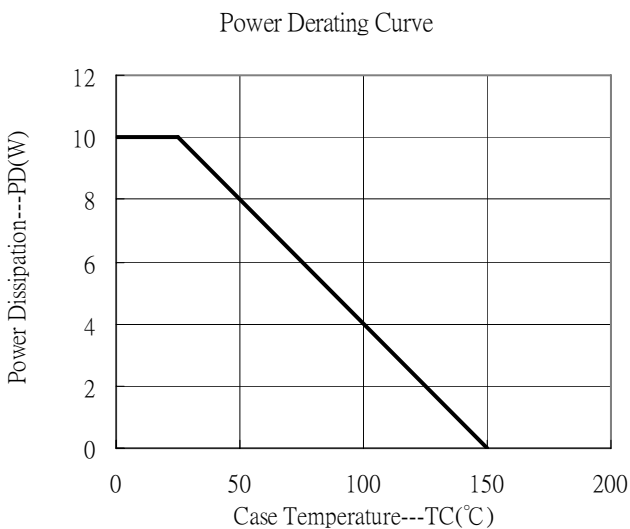
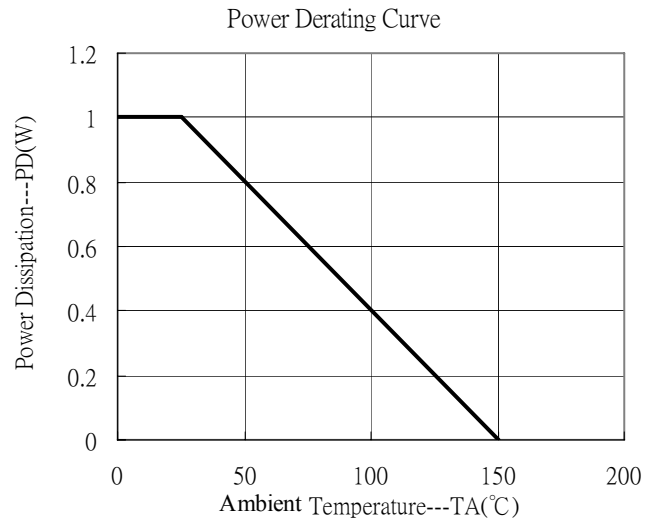
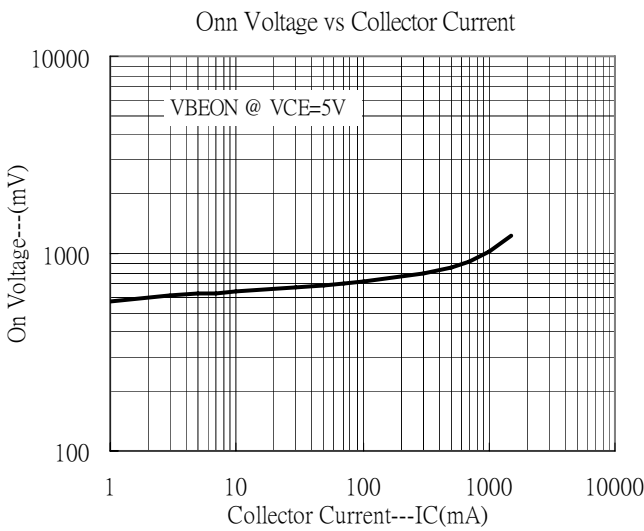
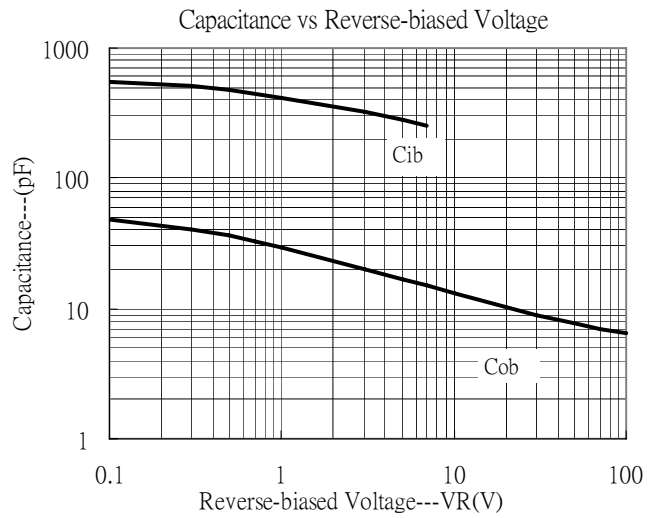
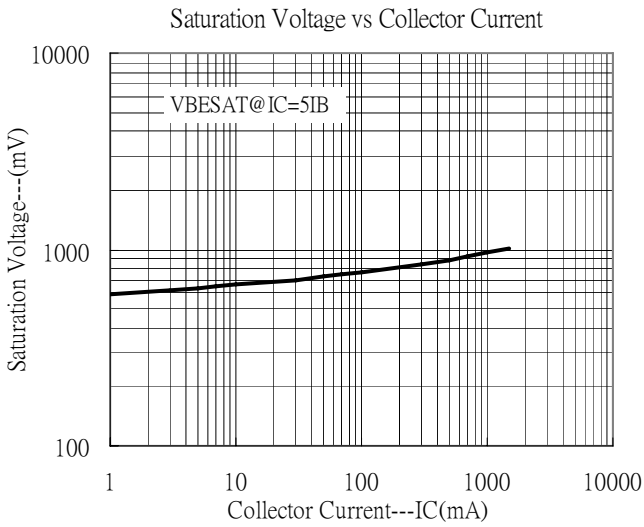
Ordering Information

Device	Package	Shipping
BTC3097T3	TO-126 (Pb-free lead plating package)	200 pcs / bag, 10 bags/box, 10 boxes/carton

Typical Characteristics



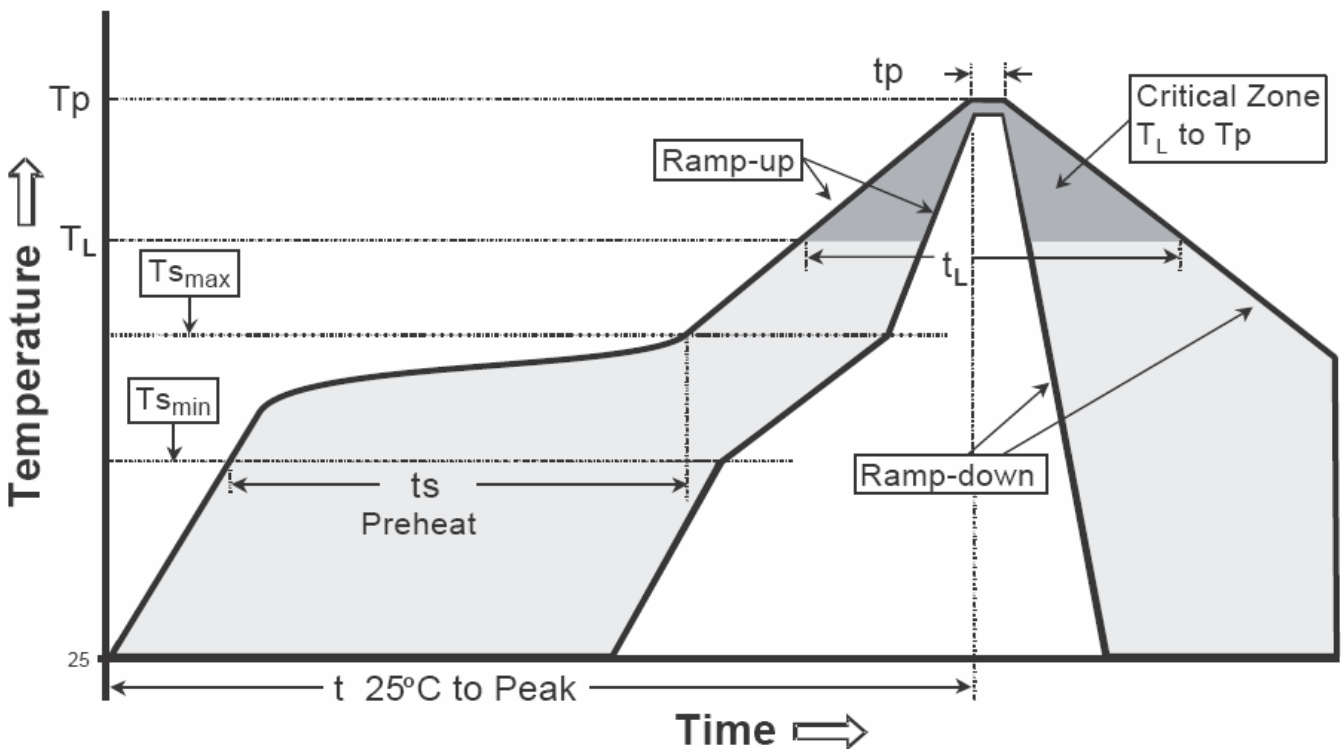
Typical Characteristics(Cont.)



Recommended wave soldering condition

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

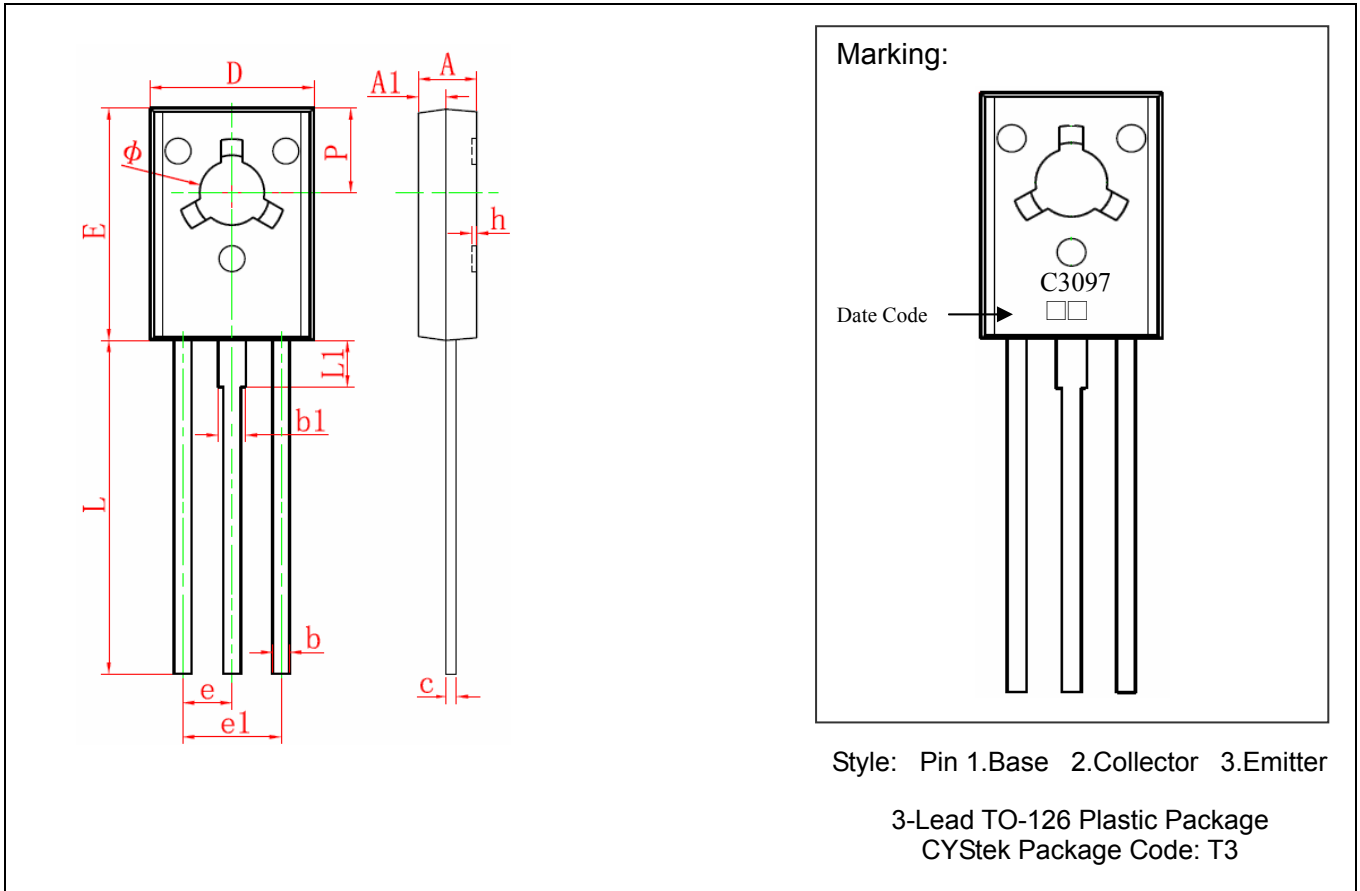
Recommended temperature profile for IR reflow



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.

TO-126 Dimension



*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	2.500	2.900	0.098	0.114	e	*2.290		*0.090	
A1	1.100	1.500	0.043	0.059	e1	4.480	4.680	0.176	0.184
b	0.660	0.860	0.026	0.034	h	0.000	0.300	0.000	0.012
b1	1.170	1.370	0.046	0.054	L	15.300	15.700	0.602	0.618
c	0.450	0.600	0.018	0.024	L1	2.100	2.300	0.083	0.091
D	7.400	7.800	0.291	0.307	P	3.900	4.100	0.154	0.161
E	10.600	11.000	0.417	0.433	Φ	3.000	3.200	0.118	0.126

- 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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