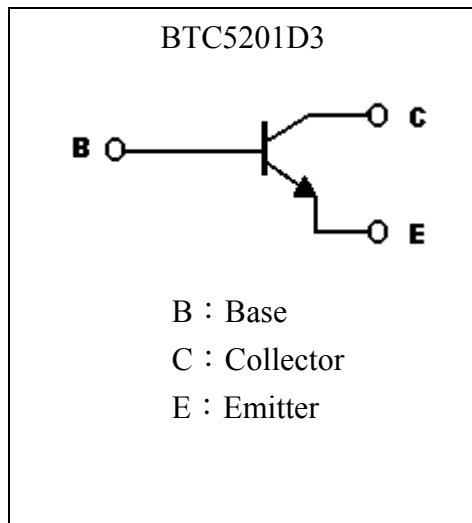
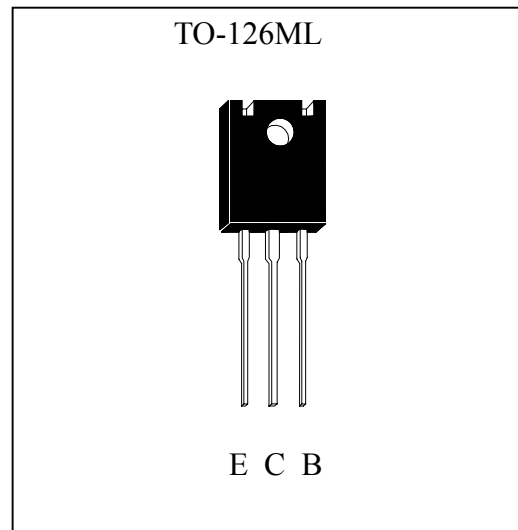


**Low Vcesat NPN Epitaxial Planar Transistor**

# BTC5201D3

**Features**

- Low  $V_{CE(sat)}$
- High  $BV_{CEO}$
- Excellent current gain characteristics

**Symbol**

**Outline**

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

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$	80	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current (DC)	$I_C$	8	A
Collector Current (Pulse)	$I_{CP}$	16 (Note 1)	
Base Current	$I_B$	1	A
Power Dissipation @ $T_A=25^\circ\text{C}$	$P_D$	1.5	W
Power Dissipation @ $T_C=25^\circ\text{C}$	$P_D$	20	
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	83.3	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	6.25	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~+150	$^\circ\text{C}$

 Note : 1. Single Pulse ,  $P_w \leq 380\mu\text{s}$ ,  $Duty \leq 2\%$ .



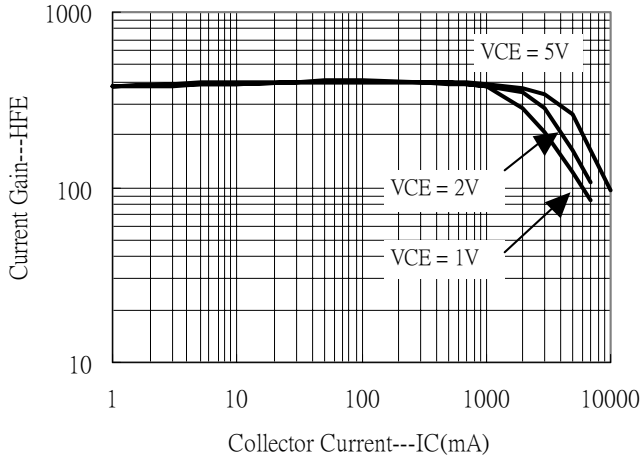
**Characteristics (Ta=25°C)**

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV <sub>CEO(SUS)</sub>	80	-	-	V	I <sub>C</sub> =30mA, I <sub>B</sub> =0
I <sub>CES</sub>	-	-	10	μA	V <sub>CE</sub> =80V, V <sub>BE</sub> =0
I <sub>EBO</sub>	-	-	50	μA	V <sub>EB</sub> =5V, I <sub>C</sub> =0
*V <sub>CE(sat)</sub> 1	-	0.1	0.3	V	I <sub>C</sub> =2A, I <sub>B</sub> =0.2A
*V <sub>CE(sat)</sub> 2	-	-	0.6	V	I <sub>C</sub> =8A, I <sub>B</sub> =0.4A
*V <sub>BE(sat)</sub> 1	-	-	1.2	V	I <sub>C</sub> =2A, I <sub>B</sub> =0.2A
*V <sub>BE(sat)</sub> 2	-	-	1.5	V	I <sub>C</sub> =8A, I <sub>B</sub> =0.8A
*h <sub>FE</sub> 1	60	-	-	-	V <sub>CE</sub> =1V, I <sub>C</sub> =0.1A
*h <sub>FE</sub> 2	40	-	-	-	V <sub>CE</sub> =1V, I <sub>C</sub> =4A
f <sub>T</sub>	-	50	-	MHz	V <sub>CE</sub> =6V, I <sub>C</sub> =500mA, f=20MHz
Cob	-	130	-	pF	V <sub>CB</sub> =10V, f=1MHz

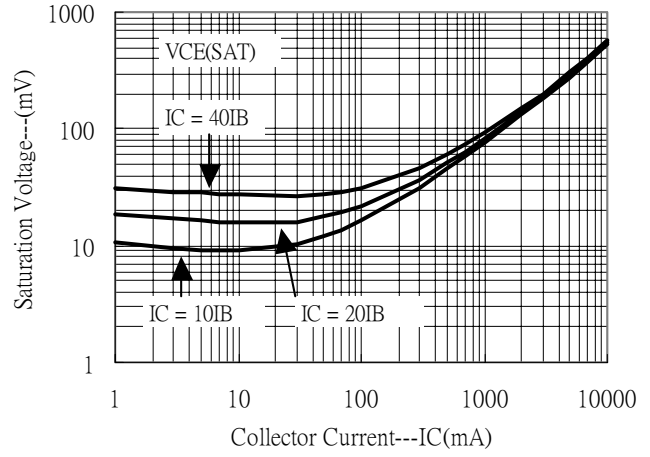
\*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

**Characteristic Curves**

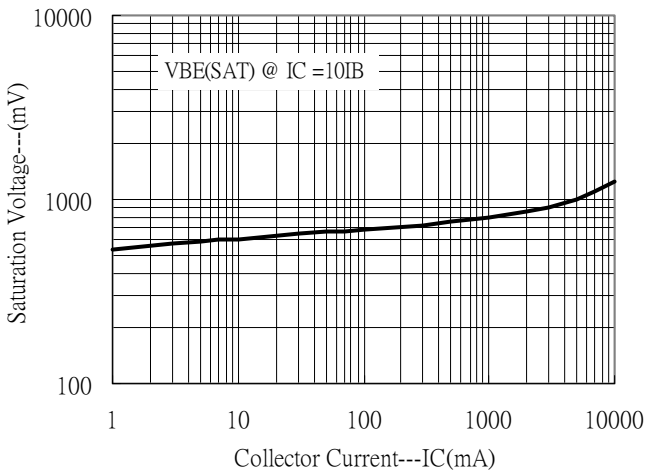
Current Gain vs Collector Current



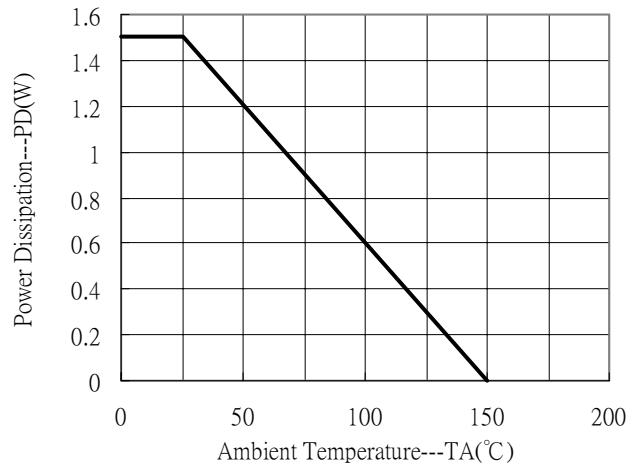
Saturation Voltage vs Collector Current



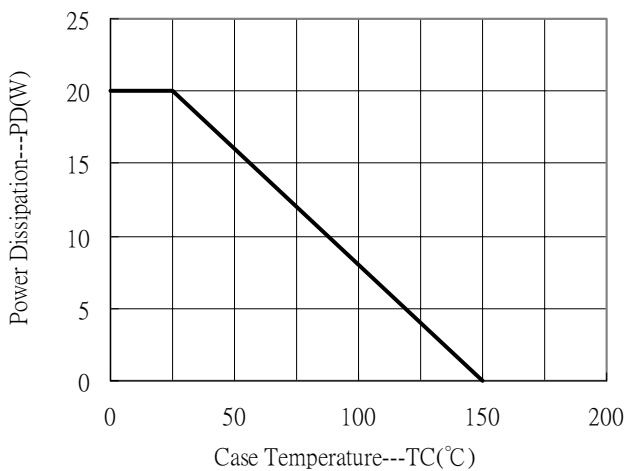
Saturation Voltage vs Collector Current



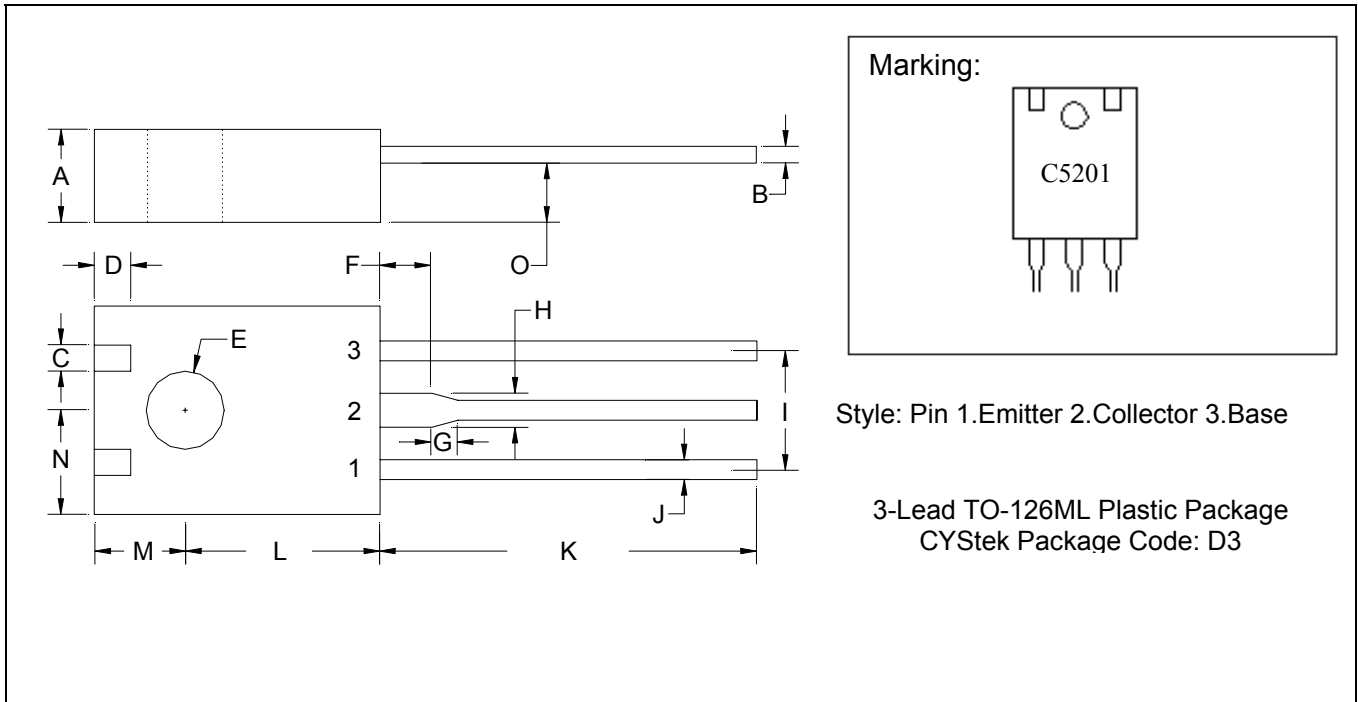
Power Derating Curve



Power Derating Curve



**TO-126ML Dimension**



\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1356	0.1457	3.44	3.70	I	-	*0.1795	-	*4.56
B	0.0170	0.0272	0.43	0.69	J	0.0268	0.0331	0.68	0.84
C	0.0344	0.0444	0.87	1.12	K	0.5512	0.5906	14.00	15.00
D	0.0501	0.0601	1.27	1.52	L	0.2903	0.3003	7.37	7.62
E	0.1131	0.1231	2.87	3.12	M	0.1378	0.1478	3.50	3.75
F	0.0737	0.0837	1.87	2.12	N	0.1525	0.1625	3.87	4.12
G	0.0294	0.0494	0.74	1.25	O	0.0740	0.0842	1.88	2.14
H	0.0462	0.0562	1.17	1.42					

- 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: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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