



# DC COMPONENTS CO., LTD.

## DISCRETE SEMICONDUCTORS

LB123T

### TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

#### Description

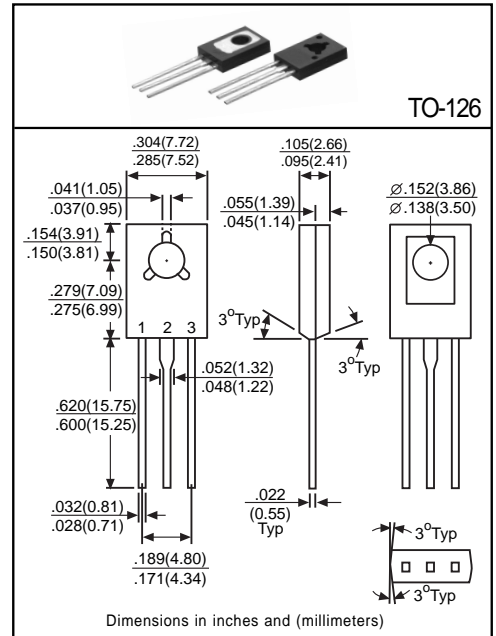
Designed for high voltage, high speed switching circuits, and amplifier applications.

#### Pinning

- 1 = Emitter
- 2 = Collector
- 3 = Base

#### Absolute Maximum Ratings(T<sub>A</sub>=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	600	V
Collector-Emitter Voltage	V <sub>CEO</sub>	400	V
Emitter-Base Voltage	V <sub>EBO</sub>	8	V
Collector Current(DC)	I <sub>C</sub>	1	A
Collector Current(Pulse)	I <sub>C</sub>	2	A
Total Power Dissipation	P <sub>D</sub>	3.5	W
Total Power Dissipation(T <sub>C</sub> =25°C)	P <sub>D</sub>	30	W
Junction Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C



#### Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	600	-	-	V	I <sub>C</sub> =1mA, I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	400	-	-	V	I <sub>C</sub> =10mA, I <sub>B</sub> =0
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	8	-	-	V	I <sub>E</sub> =1mA, I <sub>C</sub> =0
Collector Cutoff Current	I <sub>CB0</sub>	-	-	10	μA	V <sub>CB</sub> =600V, I <sub>E</sub> =0
Emitter Cutoff Current	I <sub>EBO</sub>	-	-	10	μA	V <sub>BE</sub> =9V, I <sub>C</sub> =0
Collector-Emitter Saturation Voltage <sup>(1)</sup>	V <sub>CE(sat)1</sub>	-	-	0.8	V	I <sub>C</sub> =0.1A, I <sub>B</sub> =10mA
	V <sub>CE(sat)2</sub>	-	-	0.9	V	I <sub>C</sub> =0.3A, I <sub>B</sub> =30mA
Base-Emitter Saturation Voltage <sup>(1)</sup>	V <sub>BE(sat)1</sub>	-	-	1.2	V	I <sub>C</sub> =0.1A, I <sub>B</sub> =10mA
	V <sub>BE(sat)2</sub>	-	-	1.8	V	I <sub>C</sub> =0.3A, I <sub>B</sub> =30mA
DC Current Gain <sup>(1)</sup>	h <sub>FE1</sub>	10	-	50	-	I <sub>C</sub> =0.3A, V <sub>CE</sub> =5V
	h <sub>FE2</sub>	10	-	-	-	I <sub>C</sub> =0.5A, V <sub>CE</sub> =5V
	h <sub>FE3</sub>	6	-	-	-	I <sub>C</sub> =1A, V <sub>CE</sub> =5V

(1)Pulse Test: Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

#### Classification of h<sub>FE1</sub>

Rank	B1	B2	B3	B4	B5	B6	B7	B8
Range	10~17	13~22	18~27	23~32	28~37	33~42	38~47	43~50