



# DC COMPONENTS CO., LTD.

## DISCRETE SEMICONDUCTORS

### DMBT8050

### TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

#### Description

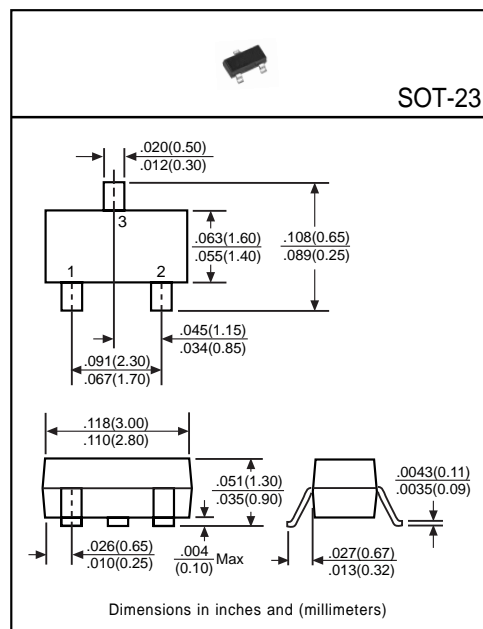
Designed for general purpose amplifier applications.

#### Pinning

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

#### Absolute Maximum Ratings( $T_A=25^{\circ}\text{C}$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	25	V
Collector-Emitter Voltage	$V_{CE0}$	20	V
Emitter-Base Voltage	$V_{EB0}$	5	V
Collector Current	$I_C$	500	mA
Total Power Dissipation	$P_D$	225	mW
Junction Temperature	$T_J$	+150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$



#### Electrical Characteristics

(Ratings at  $25^{\circ}\text{C}$  ambient temperature unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	$BV_{CB0}$	25	-	-	V	$I_C=10\mu\text{A}$ , $I_E=0$
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	20	-	-	V	$I_C=1\text{mA}$ , $I_B=0$
Emitter-Base Breakdown Voltage	$BV_{EB0}$	5	-	-	V	$I_E=10\mu\text{A}$ , $I_C=0$
Collector Cutoff Current	$I_{CBO}$	-	-	1	$\mu\text{A}$	$V_{CB}=20\text{V}$ , $I_E=0$
Collector-Emitter Saturation Voltage <sup>(1)</sup>	$V_{CE(sat)}$	-	-	0.6	V	$I_C=500\text{mA}$ , $I_B=50\text{mA}$
Base-Emitter Saturation Voltage <sup>(1)</sup>	$V_{BE(sat)}$	-	-	1.2	V	$I_C=500\text{mA}$ , $I_B=50\text{mA}$
DC Current Gain <sup>(1)</sup>	$h_{FE}$	120	-	500	-	$I_C=50\text{mA}$ , $V_{CE}=1\text{V}$
Transition Frequency	$f_T$	150	-	-	MHz	$I_C=20\text{mA}$ , $V_{CE}=10\text{V}$ , $f=100\text{MHz}$

(1) Pulse Test: Pulse Width  $\leq 380\mu\text{s}$ , Duty Cycle  $\leq 2\%$

#### Classification of $h_{FE}$

Rank	C	D	E
Range	120~200	150~350	250~500