



**DC COMPONENTS CO., LTD.**  
DISCRETE SEMICONDUCTORS

DMBT4124

**TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR**

**Description**

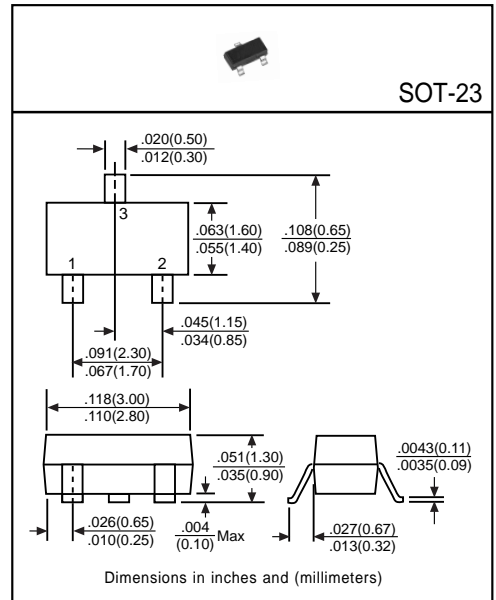
Designed for general purpose switching and amplifier applications.

**Pinning**

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

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	30	V
Collector-Emitter Voltage	$V_{CE0}$	25	V
Emitter-Base Voltage	$V_{EB0}$	5	V
Collector Current	$I_C$	200	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	$BV_{CB0}$	30	-	-	V	$I_C=10\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	25	-	-	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	$I_{CBO}$	-	-	50	nA	$V_{CB}=20\text{V}$
Emitter Cutoff Current	$I_{EBO}$	-	-	50	nA	$V_{EB}=3\text{V}$
Collector-Emitter Saturation Voltage <sup>(1)</sup>	$V_{CE(sat)}$	-	-	0.3	V	$I_C=50\text{mA}, I_B=5\text{mA}$
Base-Emitter Saturation Voltage <sup>(1)</sup>	$V_{BE(sat)}$	-	-	0.95	V	$I_C=50\text{mA}, I_B=5\text{mA}$
DC Current Gain <sup>(1)</sup>	$h_{FE1}$	120	-	360	-	$I_C=2\text{mA}, V_{CE}=1\text{V}$
	$h_{FE2}$	60	-	-	-	$I_C=50\text{mA}, V_{CE}=1\text{V}$
Transition Frequency	$f_T$	300	-	-	MHz	$I_C=10\text{mA}, V_{CE}=20\text{V}, f=1\text{MHz}$
Output Capacitance	$C_{ob}$	-	-	4	pF	$V_{CB}=5\text{V}, f=1\text{MHz}, I_E=0$

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