



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

DMBT9014

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

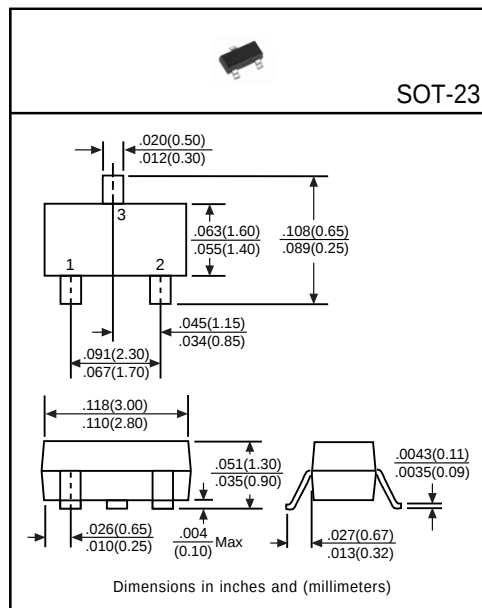
Designed for use in pre-amplifier of low level and low noise.

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}	50	V
Collector-Emitter Voltage	V_{CE0}	45	V
Emitter-Base Voltage	V_{EB0}	5	V
Collector Current	I_C	100	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°C ambient temperature unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	BV_{CB0}	50	-	-	V	$I_C=100\mu\text{A}$, $I_E=0$
Collector-Emitter Breakdown Voltage	BV_{CE0}	45	-	-	V	$I_C=1\text{mA}$, $I_B=0$
Emitter-Base Breakdown Voltage	BV_{EB0}	5	-	-	V	$I_E=100\mu\text{A}$, $I_C=0$
Collector Cutoff Current	I_{CB0}	-	-	0.1	μA	$V_{CB}=50\text{V}$, $I_E=0$
Emitter Cutoff Current	I_{EB0}	-	-	0.1	μA	$V_{EB}=3\text{V}$, $I_C=0$
Collector-Emitter Saturation Voltage ⁽¹⁾	$V_{CE(sat)}$	-	-	0.3	V	$I_C=100\text{mA}$, $I_B=5\text{mA}$
Base-Emitter Saturation Voltage ⁽¹⁾	$V_{BE(sat)}$	-	-	1	V	$I_C=100\text{mA}$, $I_B=5\text{mA}$
DC Current Gain ⁽¹⁾	h_{FE}	200	-	1000	-	$I_C=1\text{mA}$, $V_{CE}=5\text{V}$
Transition Frequency	f_T	150	-	-	MHz	$I_C=10\text{mA}$, $V_{CE}=5\text{V}$

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

Classification of h_{FE}

Rank	L	H
Range	200~450	450~1000