



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

1882

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

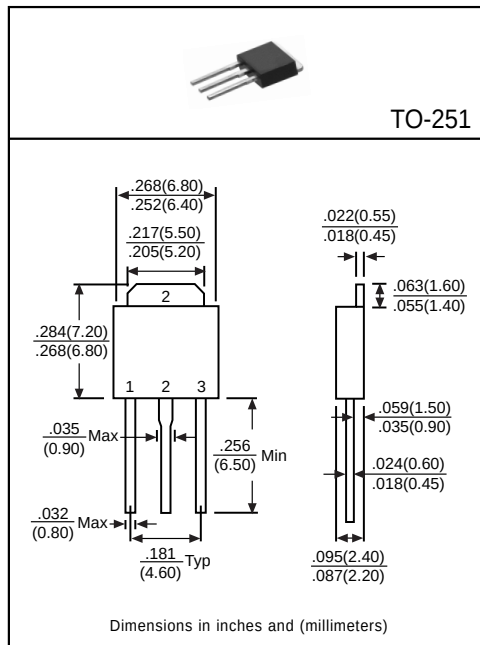
Designed for use in output stage of 10W audio amplifier, voltage regulator, DC-DC converter, and relay driver.

Pinning

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

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	40	V
Collector-Emitter Voltage	V_{CE0}	30	V
Emitter-Base Voltage	V_{EB0}	5	V
Collector Current (DC)	I_C	3	A
Collector Current (pulse)	I_C	7	A
Base Current (DC)	I_B	600	mA
Total Power Dissipation($T_C=25^{\circ}\text{C}$)	P_D	10	W
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}	40	-	-	V	$I_C=100\mu\text{A}$, $I_E=0$
Collector-Emitter Breakdown Voltage	BV_{CE0}	30	-	-	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_{CB0}	-	-	1	μA	$V_{CB}=30\text{V}$, $I_E=0$
Emitter Cutoff Current	I_{EB0}	-	-	1	μA	$V_{EB}=3\text{V}$, $I_C=0$
Collector-Emitter Saturation Voltage ⁽¹⁾	$V_{CE(sat)}$	-	0.3	0.5	V	$I_C=2\text{A}$, $I_B=0.2\text{A}$
Base-Emitter Saturation Voltage ⁽¹⁾	$V_{BE(sat)}$	-	1	2	V	$I_C=2\text{A}$, $I_B=0.2\text{A}$
DC Current Gain ⁽¹⁾	h_{FE1}	30	-	-	-	$I_C=20\text{mA}$, $V_{CE}=2\text{V}$
	h_{FE2}	100	-	500	-	$I_C=1\text{A}$, $V_{CE}=2\text{V}$
Transition Frequency	f_T	-	90	-	MHz	$I_C=0.1\text{A}$, $V_{CE}=5\text{V}$, $f=100\text{MHz}$
Output Capacitance	C_{ob}	-	45	-	pF	$V_{CB}=10\text{V}$, $f=1\text{MHz}$

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

Classification of h_{FE2}

Rank	Q	P	E
Range	100~200	160~320	250~500