



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

S9012

TECHNICAL SPECIFICATIONS OF PNP EPITAXIAL PLANAR TRANSISTOR

Description

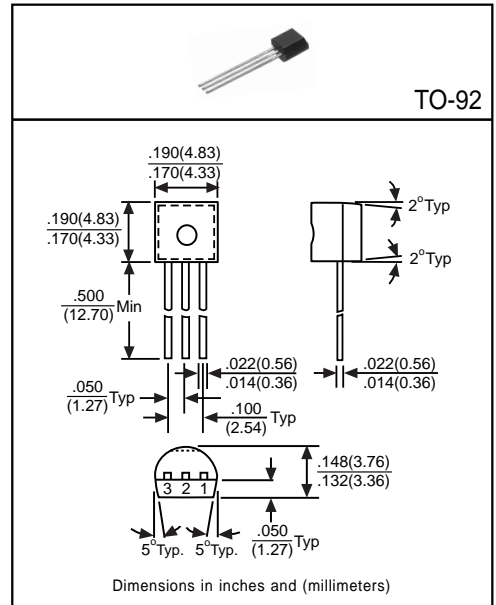
Designed for use in 1W output amplifier of portable radios in class B push-pull operation.

Pinning

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

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	-40	V
Collector-Emitter Voltage	V <sub>CE0</sub>	-20	V
Emitter-Base Voltage	V <sub>EB0</sub>	-5	V
Collector Current	I <sub>C</sub>	-500	mA
Base Current	I <sub>B</sub>	-100	mA
Total Power Dissipation	P <sub>D</sub>	625	mW
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>	-40	-	-	V	I <sub>C</sub> =-100μA, I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage	BV <sub>CE0</sub>	-20	-	-	V	I <sub>C</sub> =-1mA, I <sub>B</sub> =0
Emitter-Base Breakdown Voltage	BV <sub>EB0</sub>	-5	-	-	V	I <sub>E</sub> =-100μA, I <sub>C</sub> =0
Collector Cutoff Current	I <sub>CBO</sub>	-	-	-0.1	μA	V <sub>CB</sub> =-25V, I <sub>E</sub> =0
Emitter Cutoff Current	I <sub>EBO</sub>	-	-	-0.1	μA	V <sub>EB</sub> =-3V, I <sub>C</sub> =0
Collector-Emitter Saturation Voltage <sup>(1)</sup>	V <sub>CE(sat)</sub>	-	-	-0.6	V	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA
Base-Emitter Saturation Voltage <sup>(1)</sup>	V <sub>BE(sat)</sub>	-	-	-1.2	V	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA
Base-Emitter On Voltage <sup>(1)</sup>	V <sub>BE(on)</sub>	-	-	-0.9	V	I <sub>C</sub> =-10mA, V <sub>CE</sub> =-1V
DC Current Gain <sup>(1)</sup>	h <sub>FE1</sub>	64	-	300	-	I <sub>C</sub> =-50mA, V <sub>CE</sub> =-1V
	h <sub>FE2</sub>	40	-	-	-	I <sub>C</sub> =-500mA, V <sub>CE</sub> =-1V
Transition Frequency	f <sub>T</sub>	100	-	-	MHZ	I <sub>C</sub> =-10mA, V <sub>CE</sub> =-1V, f=100MHZ
Output Capacitance	C <sub>ob</sub>	-	-	8	pF	V <sub>CB</sub> =-10V, f=1MHZ

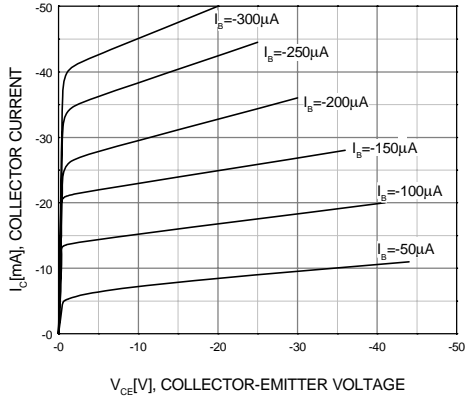
(1) Pulse Test: Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

Classification of h<sub>FE1</sub>

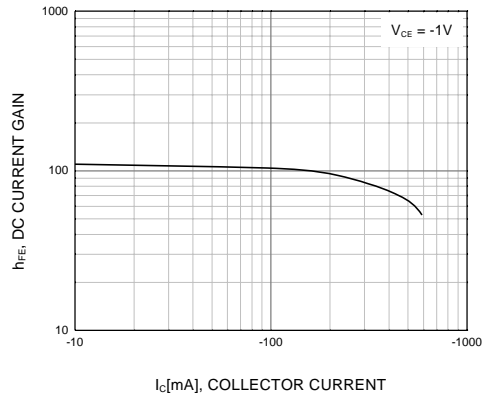
Rank	L	H
Range	120~200	200~300

Electrical Characteristic Curves

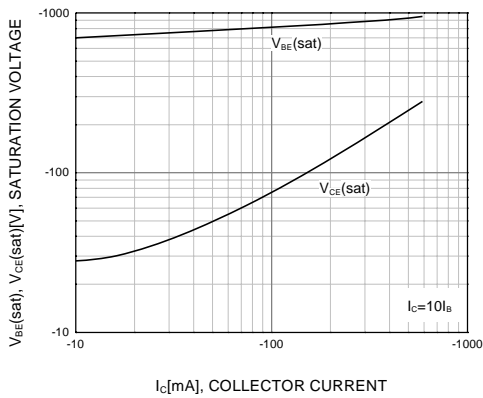
Typical Output Characteristics



DC Current Transfer Ratio vs. Collector Current



Collector-Emitter Saturation Voltage



Current Gain Bandwidth Product

