



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

S8050

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

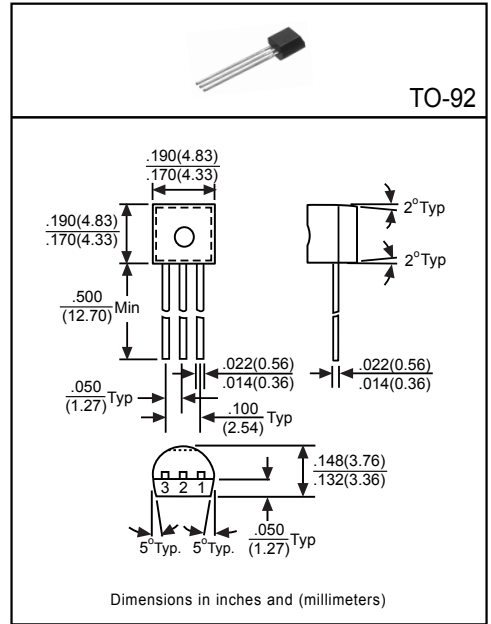
Designed for use in 2W output amplifier of portable radios in class B push-pull operation.

Pinning

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

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}	25	V
Emitter-Base Voltage	V_{EB0}	5	V
Collector Current	I_C	0.8	A
Base Current	I_B	500	mA
Total Power Dissipation	P_D	1	W
Total Power Dissipation($T_C=25^{\circ}\text{C}$)	P_D	2	W
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	V_{CB0}	40	-	-	V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	V_{CE0}	25	-	-	V	$I_C=2\text{mA}$
Emitter-Base Breakdown Voltage	V_{EB0}	5	-	-	V	$I_E=100\mu\text{A}$
Collector Cutoff Current	I_{CBO}	-	-	0.1	μA	$V_{CB}=35\text{V}$
Emitter Cutoff Current	I_{EBO}	-	-	0.1	μA	$V_{EB}=6\text{V}$
Collector-Emitter Saturation Voltage ⁽¹⁾	$V_{CE(sat)}$	-	-	0.5	V	$I_C=0.8\text{A}$, $I_B=80\text{mA}$
Base-Emitter Saturation Voltage ⁽¹⁾	$V_{BE(sat)}$	-	-	1.2	V	$I_C=0.8\text{A}$, $I_B=80\text{mA}$
Base-Emitter On Voltage ⁽¹⁾	$V_{BE(on)}$	-	-	1	V	$I_C=10\text{mA}$, $V_{CE}=1\text{V}$
DC Current Gain ⁽¹⁾	h_{FE1}	45	-	-	-	$I_C=5\text{mA}$, $V_{CE}=1\text{V}$
	h_{FE2}	85	-	400	-	$I_C=100\text{mA}$, $V_{CE}=1\text{V}$
	h_{FE3}	40	-	-	-	$I_C=500\text{mA}$, $V_{CE}=1\text{V}$
Transition Frequency	f_T	100	-	-	MHz	$I_C=50\text{mA}$, $V_{CE}=10\text{V}$

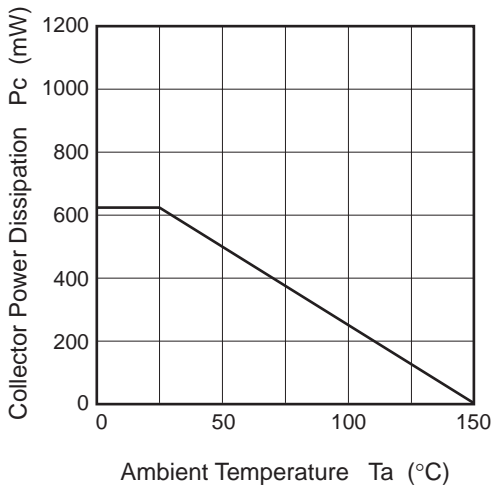
(1) Pulse Test: Pulse Width $\leq 380\mu\text{s}$, Duty Cycle $\leq 2\%$

Classification of h_{FE2}

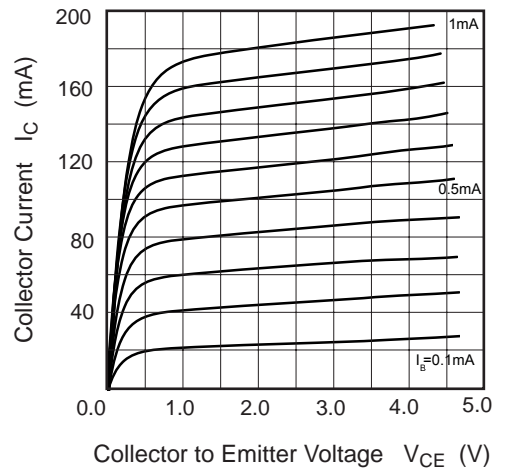
Rank	B	C	D	E
Range	85~160	120~200	160~300	300~400

Electrical Characteristic Curves

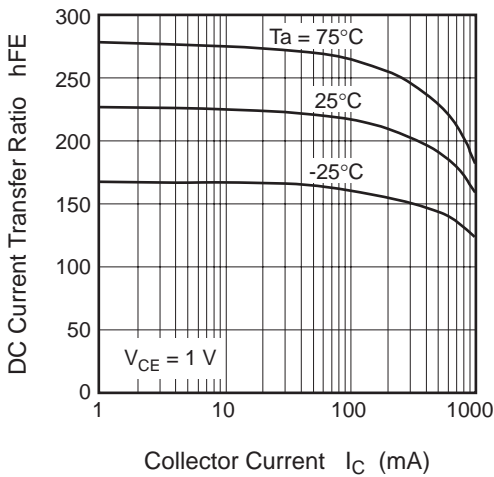
Maximum Collector Dissipation Curve



Typical Output Characteristics



DC Current Transfer Ratio vs. Collector Current



Collector Output Capacitance vs. Collector to Base Voltage

