



# DC COMPONENTS CO., LTD.

## DISCRETE SEMICONDUCTORS

2SC945

### TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

#### Description

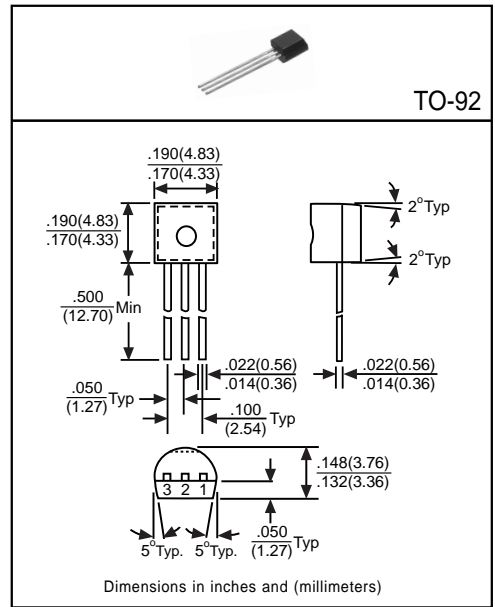
Designed for use in driver stage of AF amplifier applications.

#### Pinning

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

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	60	V
Collector-Emitter Voltage	$V_{CE0}$	50	V
Emitter-Base Voltage	$V_{EB0}$	5	V
Collector Current	$I_C$	100	mA
Base Current	$I_B$	50	mA
Total Power Dissipation	$P_D$	250	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	$BV_{CB0}$	60	-	-	V	$I_C=100\mu\text{A}$ , $I_E=0$
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	50	-	-	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	$I_{CB0}$	-	-	0.1	$\mu\text{A}$	$V_{CB}=60\text{V}$ , $I_E=0$
Emitter Cutoff Current	$I_{EB0}$	-	-	0.1	$\mu\text{A}$	$V_{EB}=5\text{V}$ , $I_B=0$
Collector-Emitter Saturation Voltage <sup>(1)</sup>	$V_{CE(sat)}$	-	0.1	0.3	V	$I_C=100\text{mA}$ , $I_B=10\text{mA}$
DC Current Gain <sup>(1)</sup>	$h_{FE1}$	50	-	-	-	$I_C=0.1\text{mA}$ , $V_{CE}=6\text{V}$
	$h_{FE2}$	135	-	600	-	$I_C=1\text{mA}$ , $V_{CE}=6\text{V}$
Transition Frequency	$f_T$	150	-	600	MHz	$I_C=10\text{mA}$ , $V_{CE}=6\text{V}$ , $f=100\text{MHz}$
Output Capacitance	$C_{ob}$	-	-	4	pF	$V_{CB}=10\text{V}$ , $f=1\text{MHz}$ , $I_E=0$

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

#### Classification of $h_{FE2}$

Rank	Q	P	K
Range	135~270	200~400	300~600