

# Transistors

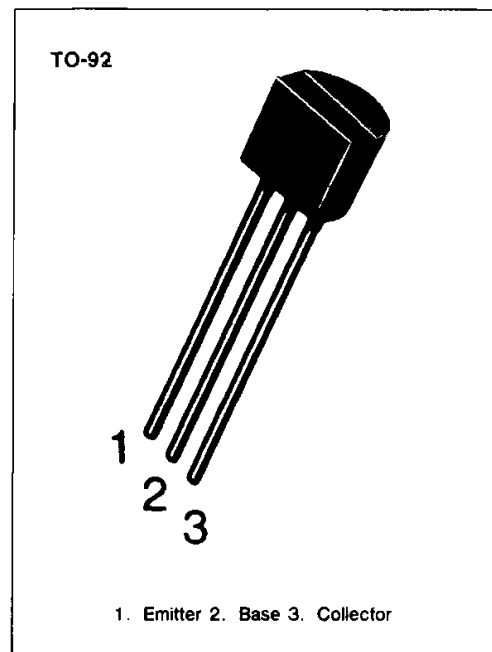
## 2SC9013

### 1W OUTPUT AMPLIFIER OF POTABLE RADIOS IN CLASS B PUSH-PULL OPERATION.

- High total power dissipation. ( $P_T = 625\text{mW}$ )
- High Collector Current. ( $I_C = 500\text{mA}$ )
- Complementary to SS9012
- Excellent  $h_{FE}$  linearity

### ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	500	mA
Collector Dissipation	$P_C$	625	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	$-55 \sim 150$	$^\circ\text{C}$



### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

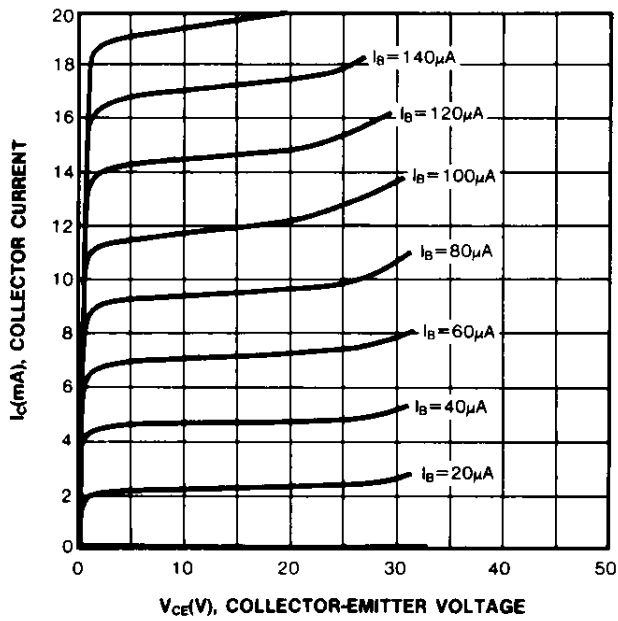
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = 100\mu\text{A}$ , $I_E = 0$	40			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = 1\text{mA}$ , $I_B = 0$	20			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = 100\mu\text{A}$ , $I_C = 0$	5			V
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 25\text{V}$ , $I_E = 0$			100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 3\text{V}$ , $I_C = 0$			100	nA
DC Current Gain	$h_{FE1}$	$V_{CE} = 1\text{V}$ , $I_C = 50\text{mA}$	64	120	202	
	$h_{FE2}$	$V_{CE} = 1\text{V}$ , $I_C = 500\text{mA}$	40	120		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}$ , $I_B = 50\text{mA}$		0.16	0.6	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 500\text{mA}$ , $I_B = 50\text{mA}$		0.91	1.2	V
Base-Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = 1\text{V}$ , $I_C = 10\text{mA}$	0.6	0.67	0.7	V

### $h_{FE}$ (1) CLASSIFICATION

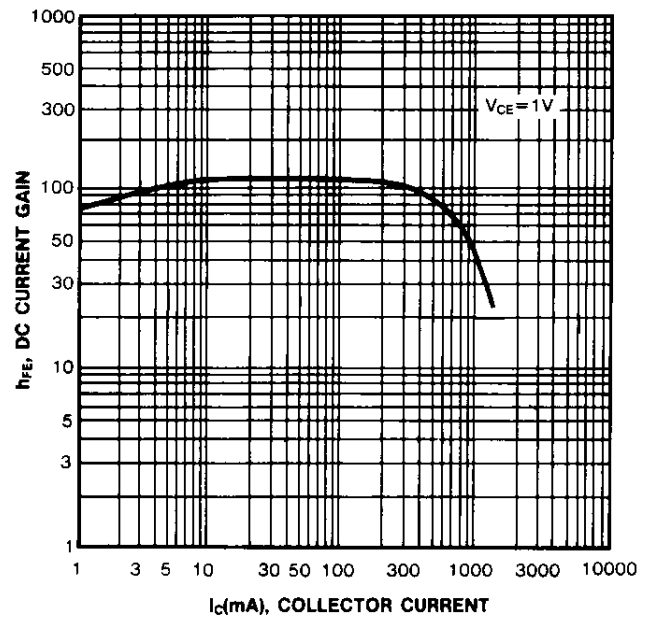
Classification	D	E	F	G	H
$h_{FE} (1)$	64-91	78-112	96-135	112-166	144-202



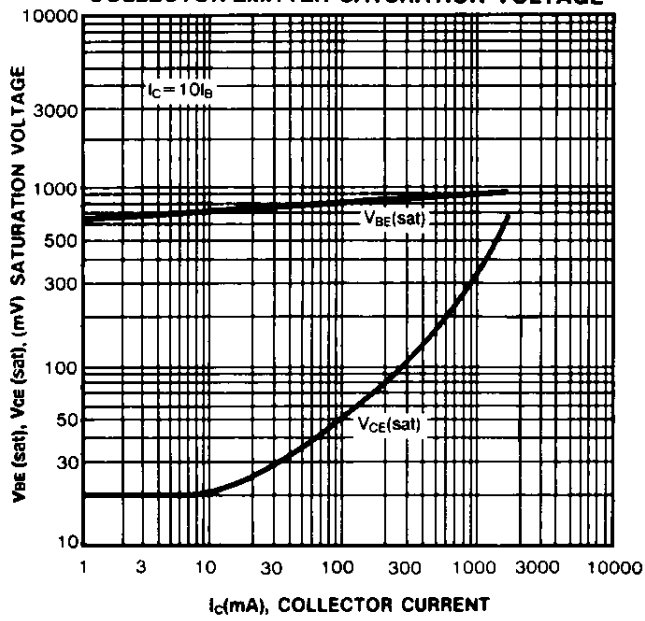
STATIC CHARACTERISTIC



DC CURRENT GAIN



BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



CURRENT GAIN-BANDWIDTH PRODUCT

