



TO-92 Plastic-Encapsulate Transistors

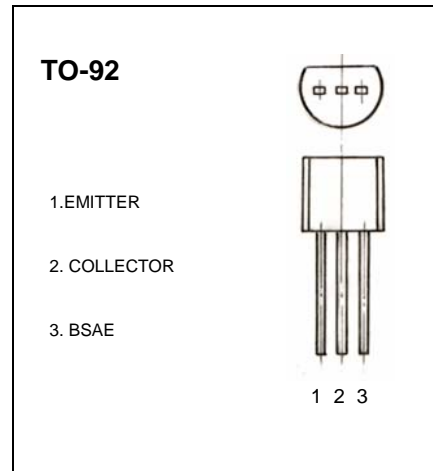
**2SC1959** TRANSISTOR (NPN)

**FEATURES**

- Excellent  $h_{FE}$  linearity

**MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	35	V
$V_{CEO}$	Collector-Emitter Voltage	30	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current –Continuous	0.5	A
$P_C$	Collector Power Dissipation	500	mW
$T_J$	Junction Temperature	150	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^{\circ}\text{C}$



**ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V(BR)_{CBO}$	$I_C=100\mu\text{A}, I_E=0$	35			V
Collector-emitter breakdown voltage	$V(BR)_{CEO}$	$I_C=1\text{mA}, I_B=0$	30			V
Emitter-base breakdown voltage	$V(BR)_{EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=35\text{V}, I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}=1\text{V}, I_C=100\text{mA}$	70		400	
	$h_{FE(2)}$	$V_{CE}=6\text{V}, I_C=400\text{mA}$	25			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$			0.25	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=1\text{V}, I_C=100\text{mA}$			1.0	V
Transition frequency	$f_T$	$V_{CE}=12\text{V}, I_C=2\text{mA}$		300		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=6\text{V}, I_E=0, f=1\text{MHz}$		7		pF

**CLASSIFICATION OF  $h_{FE}$**

Rank		O	Y	GR
Range	$h_{FE(1)}$	70-140	120-240	200-400
	$h_{FE(2)}$	25(min)	40(min)	