

## TO-92 Plastic-Encapsulate Transistors

### 2SC1959 TRANSISTOR (NPN)

#### FEATURES

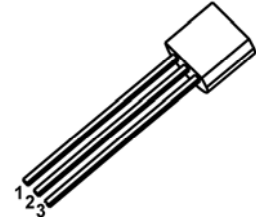
- Excellent  $h_{FE}$  Linearity

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

Symbol	Parameter	Value	Unit
$V_{CB0}$	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	$^{\circ}\text{C}$

#### TO-92

1. EMITTER
2. COLLECTOR
3. BASE



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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CB0}$	$I_C = 100\mu\text{A}, I_E = 0$	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	$I_{CB0}$	$V_{CB} = 35\text{V}, I_E = 0$			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	$f_T$	$V_{CE} = 6\text{V}, I_C = 20\text{mA}$		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)	

# Typical Characteristics

# 2SC1959

