

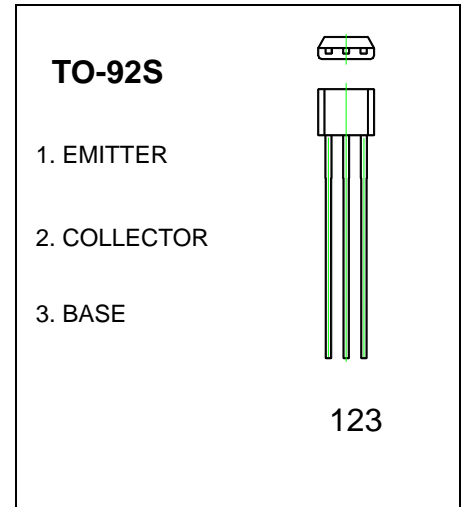
## 2SA1048 TRANSISTOR (PNP)

### FEATURES

- High voltage:  $V_{CEO} = -50V$  (Min.)
- High  $h_{FE}$ :  $h_{FE} = 70 \sim 400$
- Low noise:  $NF = 1dB$  (Typ.),  $10dB$  (Max.)
- Complementary to 2SC2458

### MAXIMUM RATINGS ( $T_A = 25^\circ C$ unless otherwise noted)

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector- Base Voltage	-50	V
$V_{CEO}$	Collector-Emitter Voltage	-50	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current -Continuous	-0.15	A
$P_C$	Collector Power Dissipation	0.2	W
$T_J$	Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature	-55-150	$^\circ C$



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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100 \mu A, I_E = 0$	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1mA, I_B = 0$	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100 \mu A, I_C = 0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -50 V, I_E = 0$			-0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5 V, I_C = 0$			-0.1	$\mu A$
DC current gain	$h_{FE}$	$V_{CE} = -6 V, I_C = -2mA$	70		400	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100mA, I_B = -10mA$			-0.3	V
Transition frequency	$f_T$	$V_{CE} = -10 V, I_C = -1mA$	80			MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10 V, I_E = 0, f = 1 MHz$			7	pF
Noise figure	NF	$V_{CE} = -6 V, I_C = -0.1 mA, f = 1 KHz, R_g = 10 K\Omega$			10	dB

### CLASSIFICATION OF $h_{FE}$

Rank	O	Y	GR
Range	70-140	120-240	200-400

# Typical Characteristics

2SA1048

