



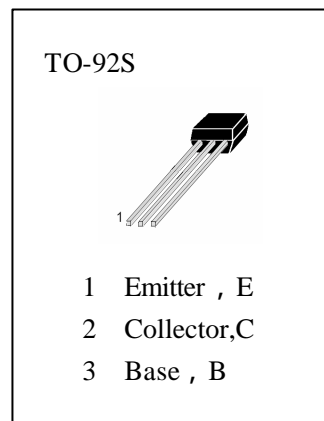
# HA144E

## APPLICATIONS

Switching Circuit , Interface Circuit.

## ABSOLUTE MAXIMUM RATINGS ( $T_a=25$ )

- $T_{stg}$ —Storage Temperature..... -55~150
- $T_j$ —Junction Temperature.....150
- $P_C$ —Collector Dissipation.....300mW
- $V_{CBO}$ —Collector-Base Voltage.....-50V
- $V_{CEO}$ —Collector-Emitter Voltage.....-50V
- $V_{EBO}$ —Emitter-Base Voltage.....-10V
- $I_C$ —Collector Current.....-100mA



## ELECTRICAL CHARACTERISTICS ( $T_a=25$ )

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BVCBO	Collector-Base Breakdown Voltage	-50			V	$I_C=-10\mu A, I_E=0$
BVCEO	Collector-Emitter Breakdown Voltage	-50			V	$I_C=-0.1mA, I_B=0$
ICBO	Collector Cut-off Current			-0.1	$\mu A$	$V_{CB}=-40V, I_E=0$
ICEO	Collector Cut-off Current			-0.5	$\mu A$	$V_{CE}=-40V, I_B=0$
IEBO	Emitter Cut-off Current	-30	-53	-80	$\mu A$	$V_{EB}=-5V, I_C=0$
HFE	DC Current Gain	70				$V_{CE}=-5V, I_C=-5mA$
$V_{CE(sat)}$	Collector- Emitter Saturation Voltage		-0.1	-0.3	V	$I_C=-10mA, I_B=-0.5mA$
$V_I(off)$	Input Off Voltage	-0.8	-1.1	-1.5	V	$V_{CE}=-5V, I_C=-0.1mA$
$V_I(on)$	Input On Voltage	-1.0	-2.5	-5.0	V	$V_{CE}=-0.2V, I_C=-5mA$
R1	Input Resistor	32	47	62	Kohm	
R2/ R1	Resistance Ratio	0.9	1.0	1.1		
fr	Current Gain-Bandwidth Product		250		MHz	$V_{CE}=-10V, I_C=-5mA$
Cob	Output Capacitance		3.7		pF	$V_{CB}=-10V, f=1MHz$