

# 13001

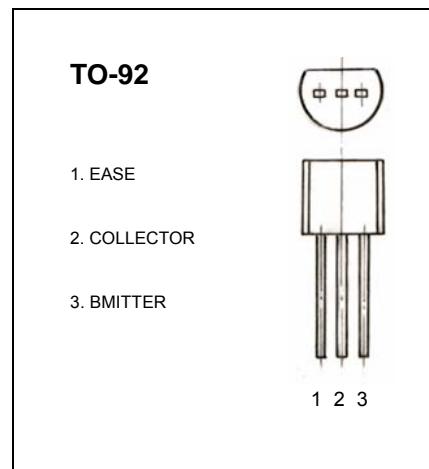
TRANSISTOR (NPN)

## FEATURES

power switching applications

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector -Base Voltage	750	V
$V_{CEO}$	Collector-Emitter Voltage	500	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current -Continuous	0.2	A
$P_c$	Collector Power Dissipation	1	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^\circ\text{C}$



## ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C= 100\mu\text{A} , I_E=0$	750			
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C= 1\text{mA} , I_B = 0$	500			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E= 100\mu\text{A} , I_C=0$	7			V
Collector cut-off current	$I_{CBO}$	$V_{CB}= 600\text{V} , I_E=0$			100	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE}= 400\text{V}, I_B=0$			200	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}= 7\text{V}, I_C=0$			100	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}= 20\text{V}, I_C= 20\text{mA}$	10		40	
	$h_{FE(2)}$	$V_{CE}= 10\text{V}, I_C= 0.25 \text{ mA}$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C= 50\text{mA}, I_B= 10 \text{ mA}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C= 50 \text{ mA}, I_B= 10\text{mA}$			1.2	V
Transition frequency	$f_T$	$V_{CE}= 20\text{V}, I_C=20\text{mA}$ $f = 1\text{MHz}$	8			MHz
Fall time	$t_f$	$V_{CC}=45\text{V}, I_C=50\text{mA}$ $I_{B1} = -I_{B2} = 5\text{mA}$			0.3	$\mu\text{s}$
Storage time	$t_s$				1.5	$\mu\text{s}$

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

Range	15-20	20-25	25-30						
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