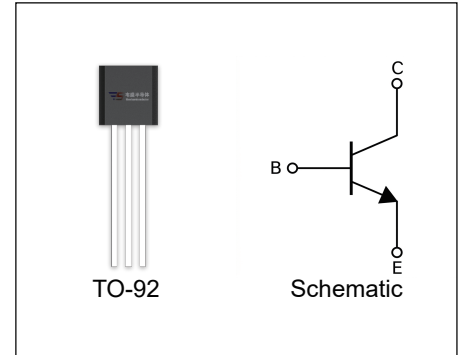


13001B TRANSISTOR (NPN)

FEATURE

- power switching applications



MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector -Base Voltage	600	V
V _{CEO}	Collector-Emitter Voltage	420	V
V _{EBO}	Emitter-Base Voltage	7	V
I _C	Collector Current -Continuous	0.2	A
P _C	Collector Power Dissipation	0.75	W
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55 ~150	°C

$T_a=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$, $I_E=0$	600			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$, $I_B=0$	400			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	μA
Collector cut-off current	I_{CEO}	$V_{CE}=400\text{V}$, $I_B=0$			200	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=7\text{V}$, $I_C=0$			100	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=20\text{V}$, $I_C=20\text{mA}$	14		29	
	$h_{FE(2)}$	$V_{CE}=10\text{V}$, $I_C=0.25\text{mA}$	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	$I_C=50\text{mA}$, $I_{B1}=-I_{B2}=5\text{mA}$, $V_{CC}=45\text{V}$			0.3	μs
Storage time	t_s				1.5	μs

CLASSIFICATION OF $h_{FE(1)}$

Range	14-17	17-20	20-23	23-26	26-29
-------	-------	-------	-------	-------	-------