13001 TRANSISTOR (NPN)

TO-92

1. EASE
2. COLLECTOR
3. BMITTER

FEATURES

power switching applications

MAXIMUM RATINGS (T_A=25℃ 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	℃
T_{stg}	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

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

CLASSIFICATION OF $h_{FE(1)}$

Range	15-20	20-25	25-30							