

SOT-23 Plastic-Encapsulate Transistors

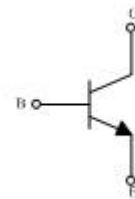
13001 TRANSISTOR (NPN)

FEATURES

- Power switching applications

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

Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current -Continuous	0.2	A
P_C	Collector Power Dissipation	0.625	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~150	$^\circ\text{C}$



ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}, I_E=0$	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	450			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1\text{mA}, I_C=0$	8			V
Collector cut-off current	I_{CBO}	$V_{CB}=600\text{V}, I_E=0$			100	μA
Collector cut-off current	I_{CEO}	$V_{CE}=400\text{V}, I_B=0$			100	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			
	$h_{FE(3)}$	$V_{CE}=5\text{V}, I_C=0.5\text{A}$	1			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=50\text{mA}, I_B=10\text{mA}$			0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=50\text{mA}, I_B=10\text{mA}$			1.1	V
Transition frequency	f_T	$V_{CE}=20\text{V}, I_C=20\text{mA}, f=1\text{MHz}$	8			MHz
Rail time	t_r	$I_C=0.1\text{A}$			0.9	μs
Storage time	t_s		1.7		2.9	μs

CLASSIFICATION OF $h_{FE(1)}$

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