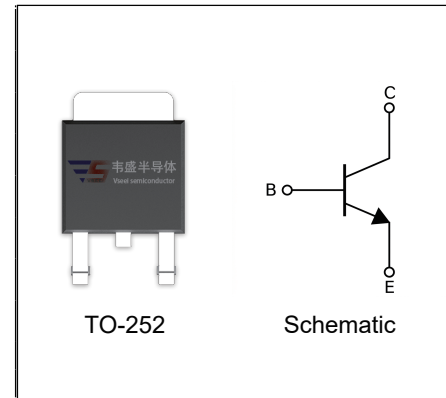


13002 TRANSISTOR (NPN)

FEATURE

- power switching applications



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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector -Base Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	1	A
P_C	Collector Power Dissipation	1.25	W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu A, I_E = 0$	600			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1mA, I_B = 0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100\mu A, I_C = 0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB} = 600V, I_E = 0$			100	μA
	I_{CEO}	$V_{CB} = 400V, I_E = 0$			100	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 7V, I_C = 0$			100	μA
Dc current gain	h_{FE1}	$V_{CE} = 10V, I_C = 200mA$	9		40	
	h_{FE2}	$V_{CE} = 10V, I_C = 0.25mA$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 200mA, I_B = 40mA$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 200mA, I_B = 40mA$			1.1	V
Transition frequency	f_T	$V_{CE} = 10V, I_C = 100mA$ $f = 1MHz$	5			MHz
Fall time	t_f	$I_C = 1A, I_{B1} = -I_{B2} = 0.2A$			0.5	μs
Storage time	t_s	$V_{CC} = 100V$			2.5	μs

CLASSIFICATION OF h_{FE1}

Range	9-15	15-20	20-25	25-30	30-35	35-40
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