



TO-92 Plastic-Encapsulate Transistors

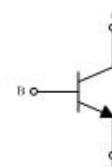
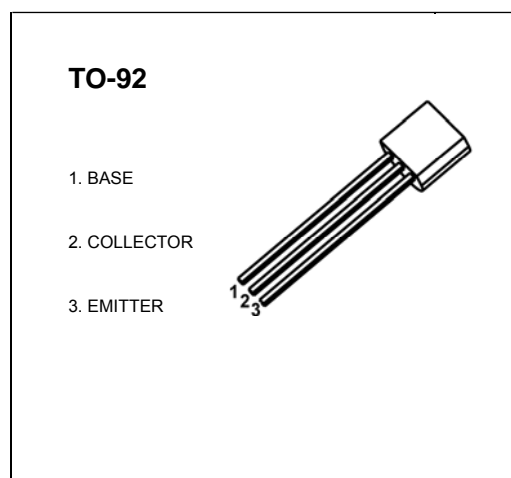
3DD13001B TRANSISTOR (NPN)

FEATURE

- power switching applications

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

Symbol	Parameter	Value	Unit
V _{CB0}	Collector -Base Voltage	600	V
V _{CE0}	Collector-Emitter Voltage	400	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	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~150	°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 = 100μA, 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 = 100μA, I _C = 0	7			V
Collector cut-off current	I _{CB0}	V _{CB} = 600V, I _E = 0			100	μA
Collector cut-off current	I _{CE0}	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	I _C = 50mA, I _{B1} = -I _{B2} = 5mA, V _{CC} = 45V			0.3	μs
Storage time	t _s				1.5	μs

CLASSIFICATION OF h_{FE(1)}

Range	10-13	13-16	16-19	19-22	22-25	25-28	28-31	31-34	34-37	37-40
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