



TO-92 Plastic-Encapsulate Transistors

3DD13001B TRANSISTOR (NPN)

FEATURES

Power dissipation

P_{CM} : 0.75 W ($T_{amb}=25^{\circ}C$)

Collector current

I_{CM} : 0.2 A

Collector-base voltage

$V_{(BR)CBO}$: 600 V

Operating and storage junction temperature range

T_J, T_{stg} : $-55^{\circ}C$ to $+150^{\circ}C$

TO-92

1. BASE

2. COLLECTOR

3. EMITTER



ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}C$ 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	$V_{(BR)EBO}$	$I_E = 100\mu A, I_C = 0$	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	
	$h_{FE(2)}$	$V_{CE} = 10V, I_C = 0.25mA$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 50mA, I_B = 10mA$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 50mA, I_B = 10mA$			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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Typical characteristics

3DD13001B

