

TO-92 Plastic-Encapsulate Transistors

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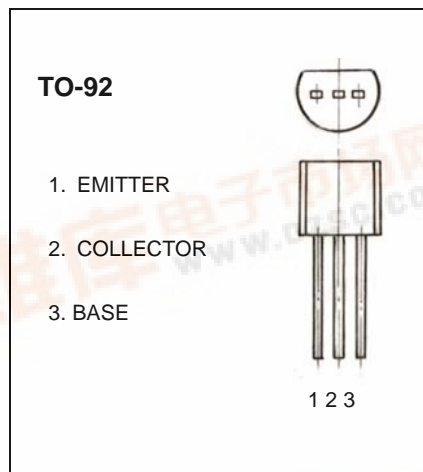
3DD13003B TRANSISTOR(NPN)

FEATURES

- power switching applications

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

Symbol	Parameter	Value	Units
V _{CB0}	Collector-Base Voltage	700	V
V _{CEO}	Collector-Emitter Voltage	400	V
V _{EBO}	Emitter-Base Voltage	9	V
I _C	Collector Current -Continuous	1.5	A
P _C	Collector Power Dissipation	0.9	W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C



ELECTRICAL CHARACTERISTICS (T_{amb}=25°C unless otherwise specified)

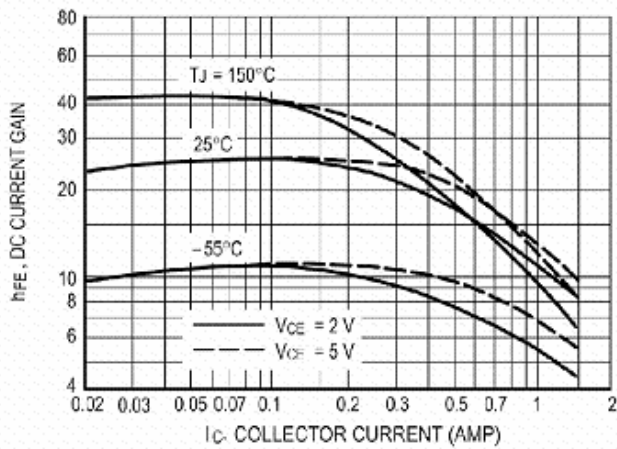
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 1mA, I _E = 0	700			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = 10mA, I _B = 0	400			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E = 1mA, I _C = 0	9			V
Collector cut-off current	I _{CBO}	V _{CB} = 700V, I _E = 0			100	μA
Collector cut-off current	I _{CEO}	V _{CE} = 400V, I _B = 0			50	μA
Emitter cut-off current	I _{EBO}	V _{EB} = 7V, I _C = 0			10	μA
DC current gain	h _{FE}	V _{CE} = 10V, I _C = 0.4 A	20		40	
Collector-emitter saturation voltage	V _{CE(sat)1}	I _C = 1.5A, I _B = 0.5A			3	V
	V _{CE(sat)2}	I _C = 0.5A, I _B = 0.1A			0.8	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C = 0.5A, I _B = 0.1A			1	V
Transition Frequency	f _T	V _{CE} = 10V, I _C = 100mA, f = 1MHz	4			MHz
Fall time	t _f	I _C = 1A			0.7	μs
Storage time	t _s	I _{B1} = -I _{B2} = 0.2A			4	μs

CLASSIFICATION OF h_{FE}

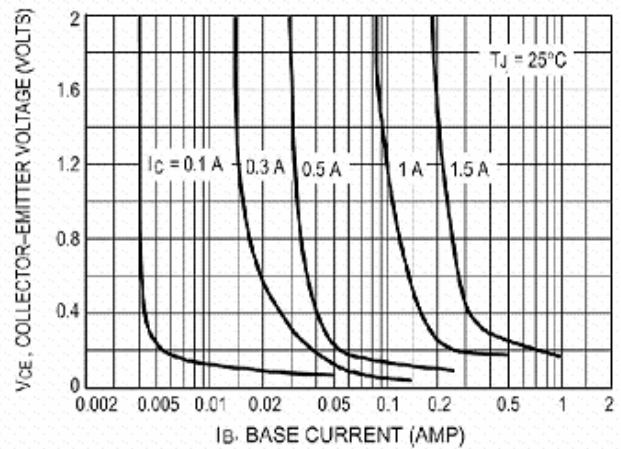
Rank				
Range	20-25	25-30	30-35	35-40

Typical Characteristics

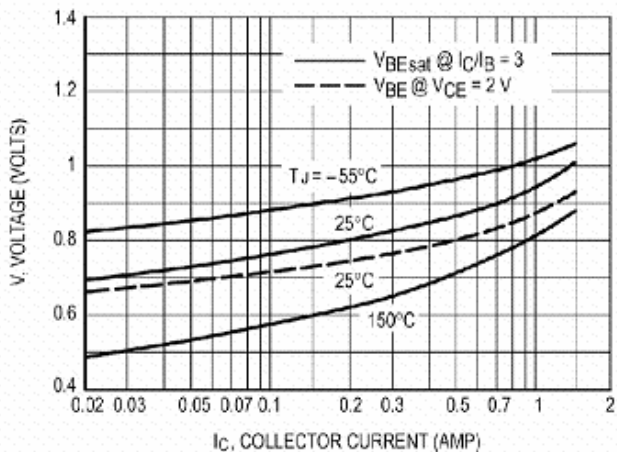
3DD13003B



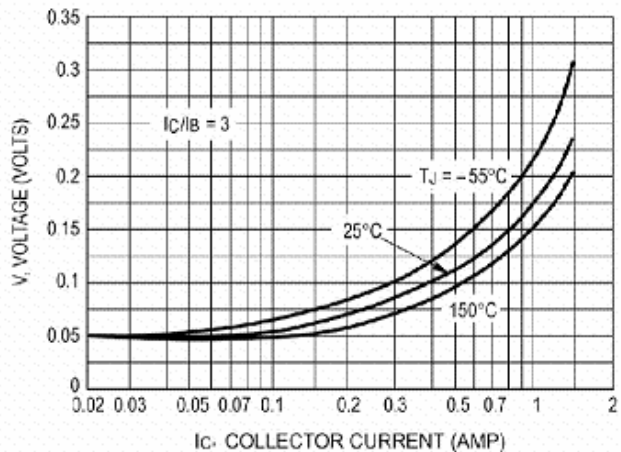
DC Current Gain



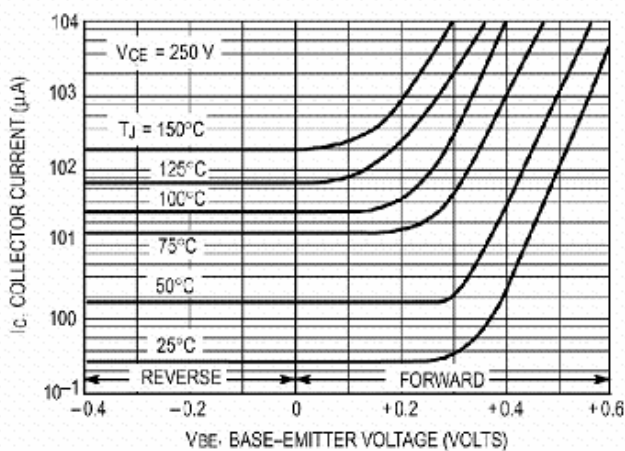
Collector Saturation Region



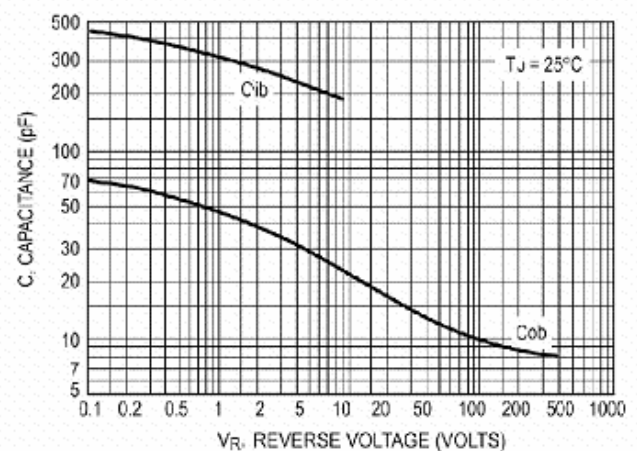
Base-Emitter Voltage



Collector-Emitter Saturation Region



Collector Cutoff Region



Capacitance