

TO-126 Plastic-Encapsulate Transistors

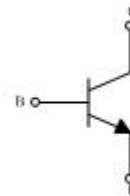
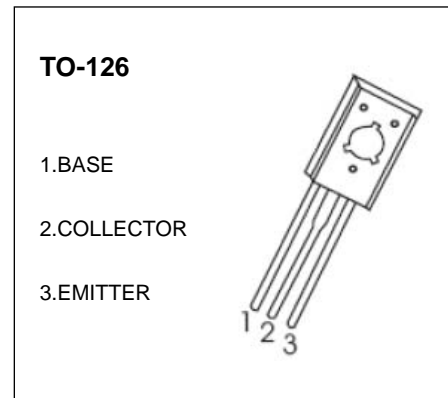
3DD13003 TRANSISTOR (NPN)

FEATURES

- power switching applications

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

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	700	V
V _{CE0}	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	1.5	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 =5mA, 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 =2mA, I _C =0	9			V
Collector cut-off current	I _{CBO}	V _{CB} =700V, I _E =0			1	mA
Collector cut-off current	I _{CEO}	V _{CE} =400V, I _B =0			0.5	mA
Emitter cut-off current	I _{EBO}	V _{EB} =9V, I _C =0			1	mA
DC current gain	h _{FE1}	V _{CE} =5V, I _C = 0.5 A	8		40	
	h _{FE2}	V _{CE} =5V, I _C = 1.5A	5			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =1A, I _B =0.25A			0.6	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =1A, I _B =0.25A			1.2	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, V _{CC} =100V			0.5	μs
Storage time	t _s	I _C =250mA (UI9600)	2		4	μs

CLASSIFICATION OF h_{FE(1)}

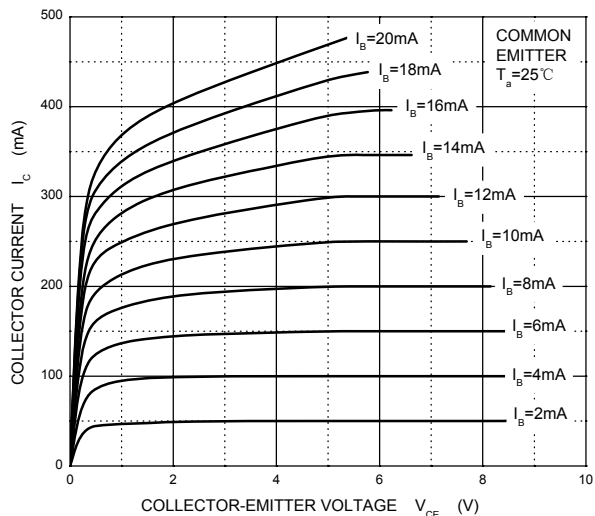
Range	10-15	15-20	20-25	25-30	30-35	35-40
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CLASSIFICATION OF t_s

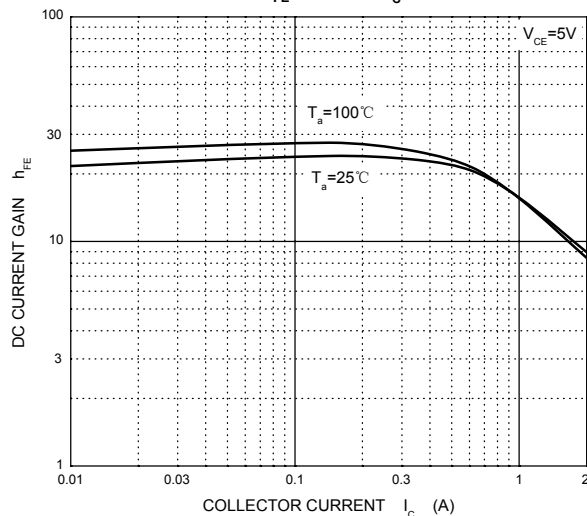
Rank	A1	A2	B1	B2
Range	2-2.5 (μs)	2.5-3(μs)	3-3.5(μs)	3.5-4(μs)



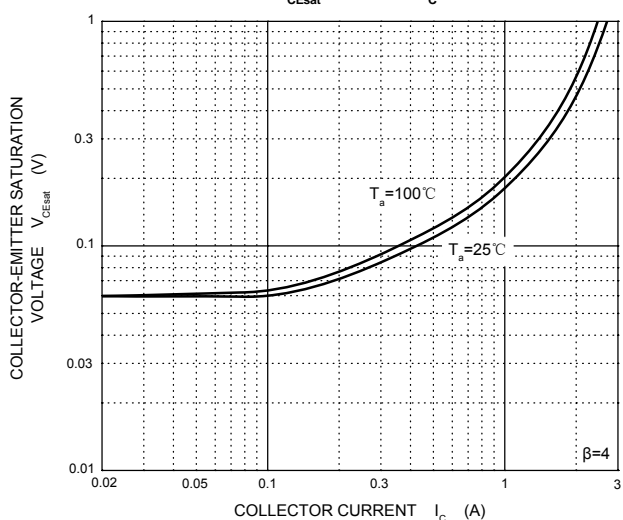
Static Characteristic



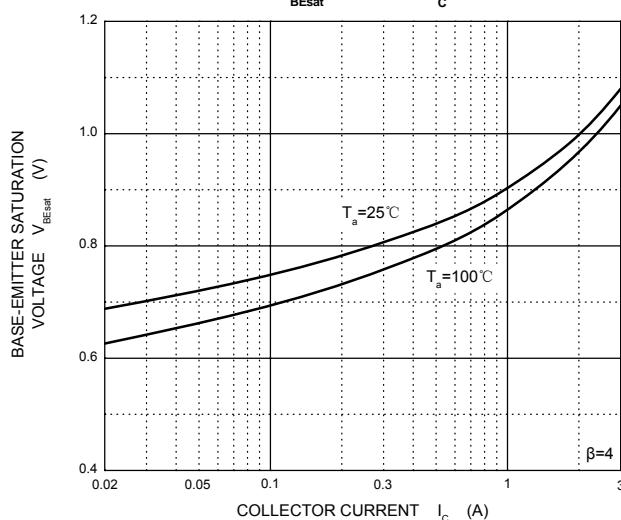
h_{FE} — I_c



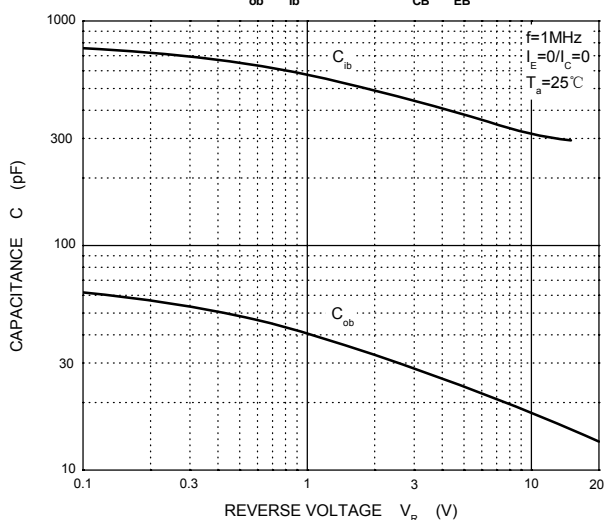
V_{CEsat} — I_c



V_{BEsat} — I_c



C_{ob}/C_{ib} — V_C/V_{EB}



P_c — T_a

