



TO-126 Plastic-Encapsulate Transistors

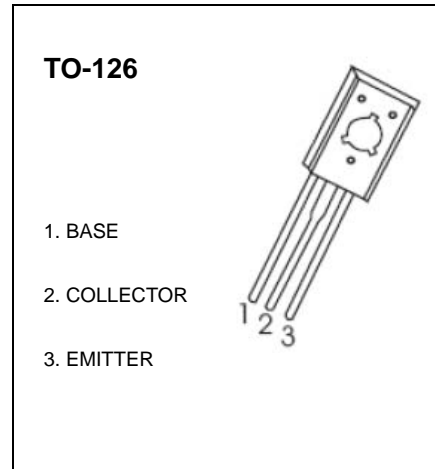
3DD13005L3D TRANSISTOR (NPN)

FEATURES

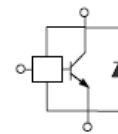
- Power switching applications
- Good high temperature
- Low saturation voltage
- High speed switching

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

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	350	V
V _{CEO}	Collector-Emitter Voltage	200	V
V _{EBO}	Emitter-Base Voltage	9	V
I _C	Collector Current -Continuous	9	A
P _C	Collector Power Dissipation	1.25	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~150	°C



CIRCUIT:



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 = 1mA, I _E =0	350			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =10mA, I _B =0	200			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =1mA, I _C =0	9			V
Collector cut-off current	I _{CBO}	V _{CB} =350V, I _E =0			100	μA
Collector cut-off current	I _{CEO}	V _{CE} =200V, I _B =0			100	μA
Emitter cut-off current	I _{EBO}	V _{EB} =9V, I _C =0			100	μA
DC current gain	h _{FE(1)}	V _{CE} =5V, I _C =1A	10		40	
	h _{FE(2)}	V _{CE} =5V, I _C =5mA	10			
	h _{FE(3)}	V _{CE} =5V, I _C =2A	10			
	h _{FE(4)}	V _{CE} =5V, I _C =4A	10			
Collector-emitter saturation voltage	V _{CE(sat)1}	I _C =1A, I _B =0.2A			0.8	V
	V _{CE(sat)2}	I _C =2A, I _B =0.4A			0.8	V
	V _{CE(sat)3}	I _C =4A, I _B =1A			1	V
Base-emitter saturation voltage	V _{BE(sat)1}	I _C =1A, I _B =0.25A			1.2	V
	V _{BE(sat)2}	I _C =2A, I _B =0.5A			1.2	V
Emitter-Collector forward voltage	V _{ECF}	I _C =2A			1.5	V
Storage time	t _s	I _C =250mA (UI9600)	2.5		5	μs
Transition frequency	f _T	V _{CE} =10V, I _C =0.5A	5			MHz

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	A	B1	B2	C1	C2
Range	2.5-3(μs)	3-3.5(μs)	3.5-4(μs)	4-4.5(μs)	4.5-5(μs)