

TO-126 Plastic-Encapsulate Transistors

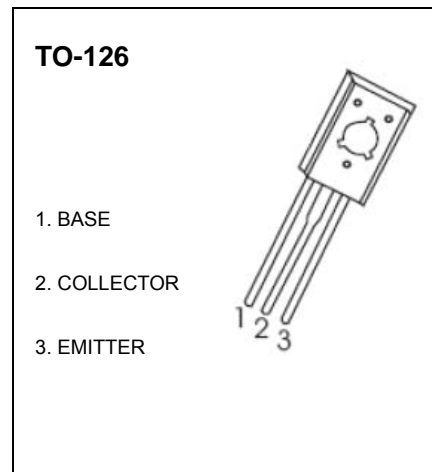
3DD13003N3D TRANSISTOR (NPN)

FEATURES

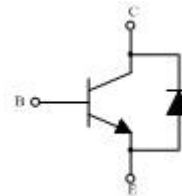
- Power switching applications
- Good high temperature
- Low saturation voltage
- High speed switching

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

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	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	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	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			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 =0.2A	10		40	
	h _{FE(2)}	V _{CE} =5V, I _C =1mA	8			
	h _{FE(3)}	V _{CE} =5V, I _C =1.5A	5			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =1A, I _B =0.2A			0.5	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =1A, I _B =0.25A			1.5	V
Storage time	t _S	I _C =250mA (UI9600)	2		4	μs
Emitter-Collector forward voltage	V _{FEC}	I _C =1A			1.5	V
Transition frequency	f _T	V _{CE} =10V, I _C =100mA	5			MHz

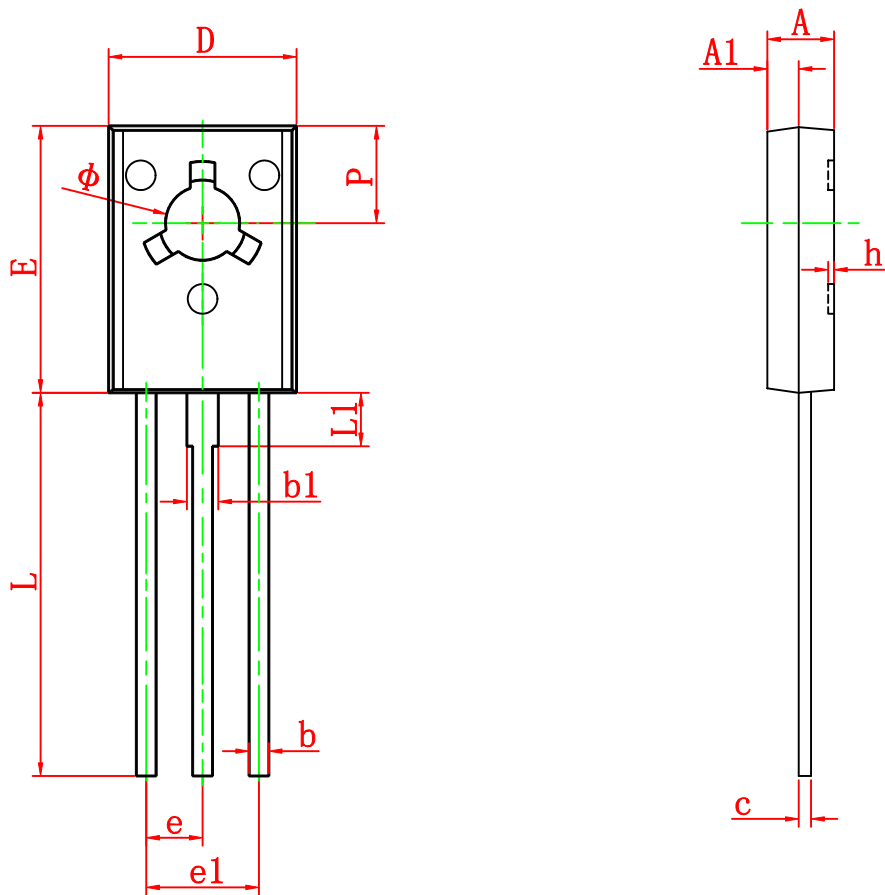
CLASSIFICATION OF h_{FE(1)}

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

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

TO-126 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.500	2.900	0.098	0.114
A1	1.100	1.500	0.043	0.059
b	0.660	0.860	0.026	0.034
b1	1.170	1.370	0.046	0.054
c	0.450	0.600	0.018	0.024
D	7.400	7.800	0.291	0.307
E	10.600	11.000	0.417	0.433
e	2.290 TYP		0.090 TYP	
e1	4.480	4.680	0.176	0.184
h	0.000	0.300	0.000	0.012
L	15.300	15.700	0.602	0.618
L1	2.100	2.300	0.083	0.091
P	3.900	4.100	0.154	0.161
Φ	3.000	3.200	0.118	0.126