



TO-126 Plastic-Encapsulate Transistors

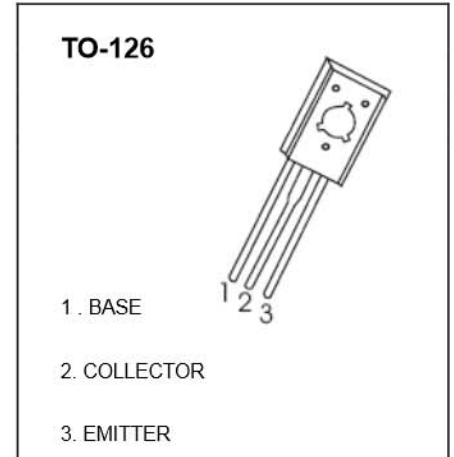
MJE13003 TRANSISTOR (NPN)

FEATURES

- Power Switching Applications

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

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	600	V
V _{CEO}	Collector-Emitter Voltage	400	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current -Continuous	1	A
P _C	Collector Power Dissipation	1.25	W
R _{θJA}	Thermal Resistance from Junction to Ambient	100	°C/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 = 0.1mA, 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 =0.1mA, I _C =0	6			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			100	μA
Emitter cut-off current	I _{EBO}	V _{EB} =7V, I _C =0			10	μA
DC current gain	h _{FE(1)} *	V _{CE} =10V, I _C =200mA	9		40	
	h _{FE(2)}	V _{CE} =10V, I _C =250μA	5			
Collector-emitter saturation voltage	V _{CE(sat)1}	I _C =200mA, I _B =40mA			0.5	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =200mA, I _B =40mA			1.1	V
Transition frequency	f _T	V _{CE} =10V, I _C =100mA, f=1MHz	5			MHz
Fall time	t _f	I _C =100mA			0.5	μs
Storage time	t _s *	I _C =100mA	2		4	

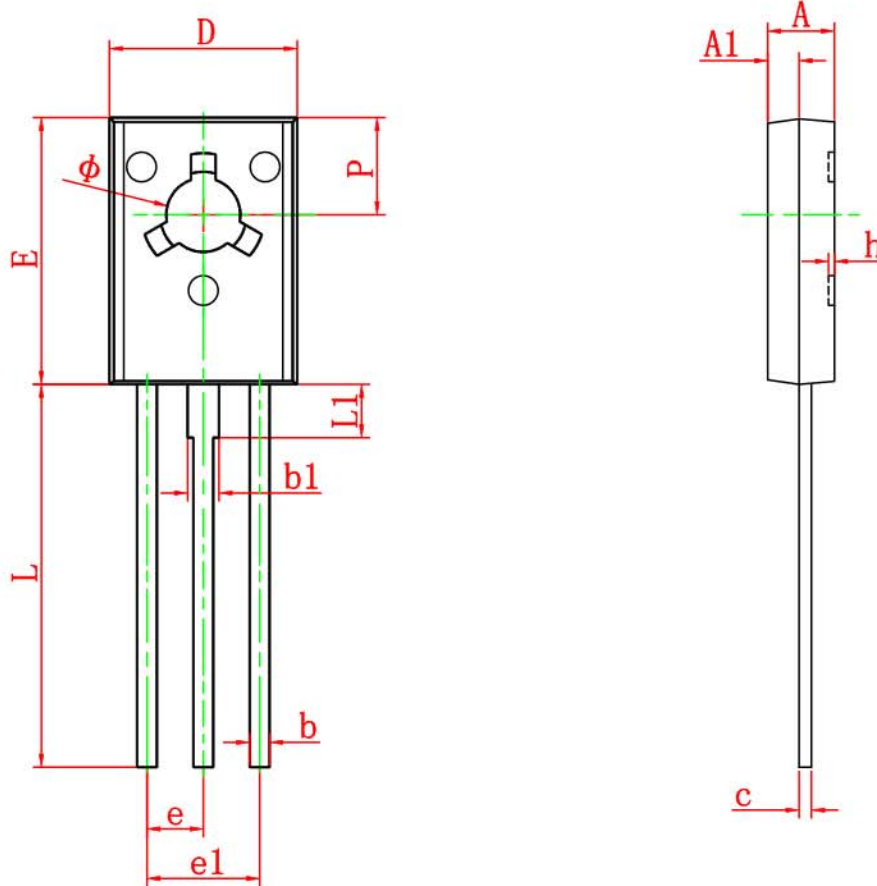
CLASSIFICATION of h_{FE(1)}

Range	9-15	15-20	20-25	25-30	30-35	35-40
-------	------	-------	-------	-------	-------	-------

CLASSIFICATION of t_s

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

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

