MJE13003D

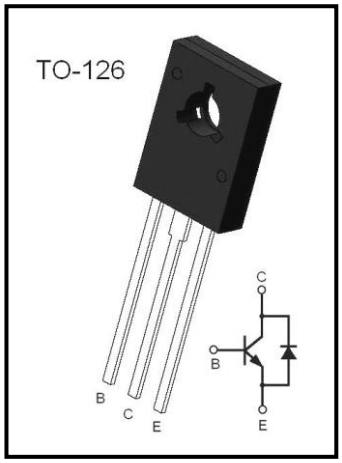
TO-126 Bipolar Transistors(NPN)

High Voltage Mode Application

High speed Switching

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	BV_{CBO}	700	V
Collector-Emitter Voltage	BV_{CEO}	400	V
Emitter-Base Voltage	BV_{EBO}	9	V
Collector Current	I_C	1.3	A
Collector Power Dissipation	P_C	1.25	W
Junction Temperature	Tj	150	℃
Storage Temperature	Tstg	-55～150	℃



Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	BV_{CBO}	I_C = 100μA，I_E = 0	700			V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = 1mA，I_B = 0	400			V
Emitter-base breakdown voltage	BV_{EBO}	I_E = 100μA，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			10	mA
Emitter cut-off current	I_{EBO}	V_{EB} = 9V，I_C = 0			1	mA
DC current gain	h_{FE}	V_{CE} =2V，I_C= 0.5A	8		40	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 0.5A，I_B = 0.1A I_C = 1A，I_B = 0.25A			0.5 1.0	V
Base -emitter saturation voltage	$V_{BE(sat)}$	I_C = 0.5A，I_B = 0.1A I_C = 1A，I_B = 0.25A			1.0 1.2	V
Transition frequency	f_T	V_{CE} =10V，I_B = 0.1A	8			MHz

Typical Characteristics

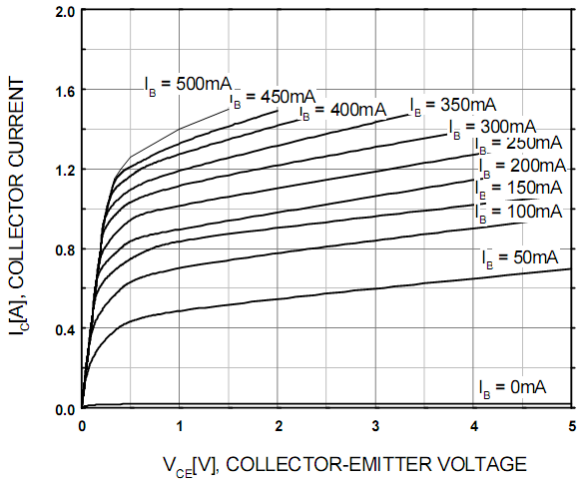


Figure 1. Static Characteristic

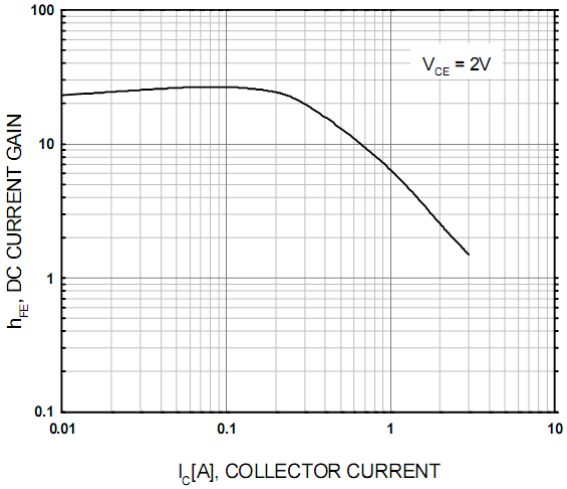


Figure 2. DC current Gain

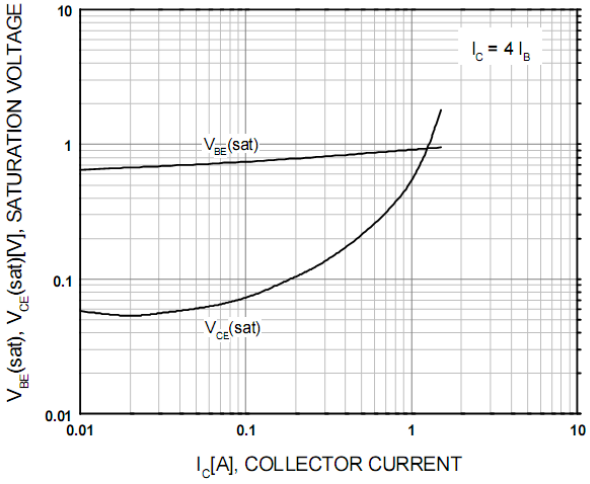


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

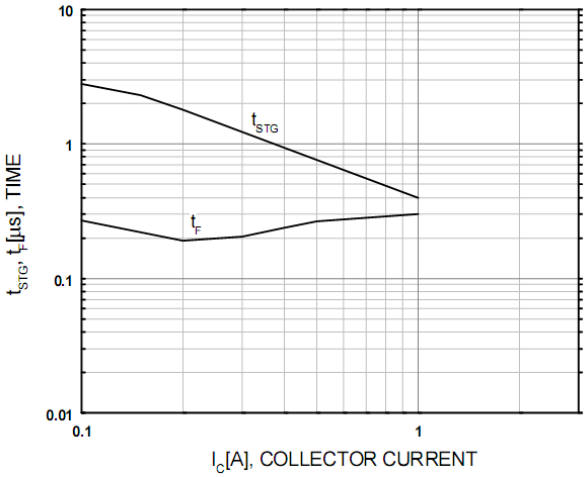


Figure 4. Switching Time

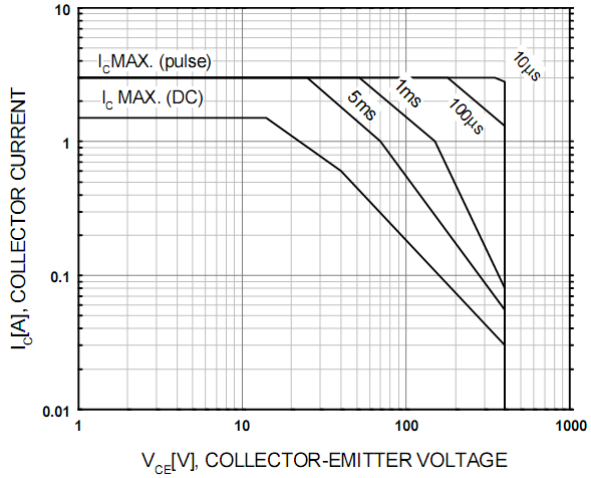


Figure 5. Safe Operating Area

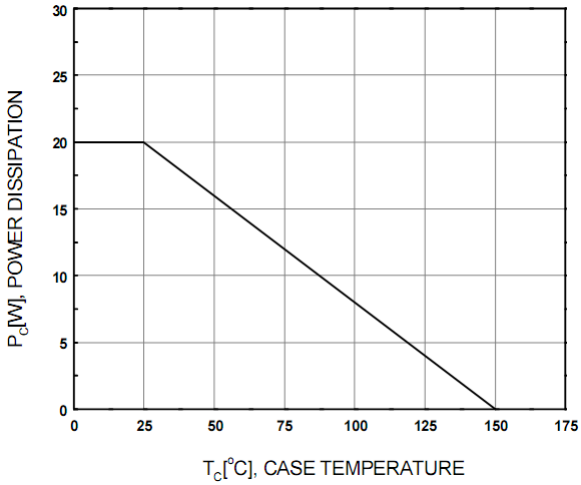
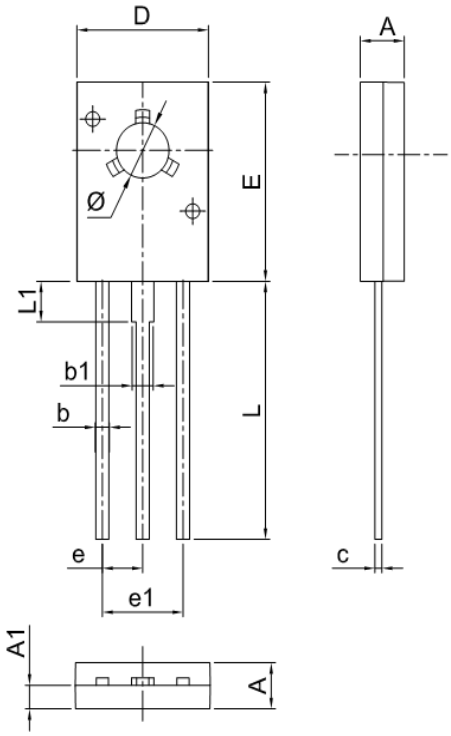


Figure 6. Power Derating

MJE13003D

TO-126 Bipolar Transistors(NPN)

Package Dimensions (unit:mm)



Symbol	TO-126		
	Min.	Typ	Max.
A	2.40	2.60	2.80
A1	1.00	1.20	1.40
b	0.66	0.76	0.86
b1	1.17	1.27	1.37
c	0.40	0.50	0.60
D	7.30	7.50	7.70
E	10.60	10.80	11.00
e	2.25	2.29	2.33
e1	4.50	4.58	4.66
L	14.00	14.50	15.00
L1	1.90	2.20	2.50
Φ	3.00	3.10	3.20

Package	Packing	Quantity	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-126	Bulk	200pcs/Bag	3000pcs	245×170×100	30,000pcs	525×375×270
TO-126	Tube	60pcs/Tube	2400pcs	560×178×35	24,000pcs	585×385×220