

TO-126 Plastic-Encapsulate Transistors

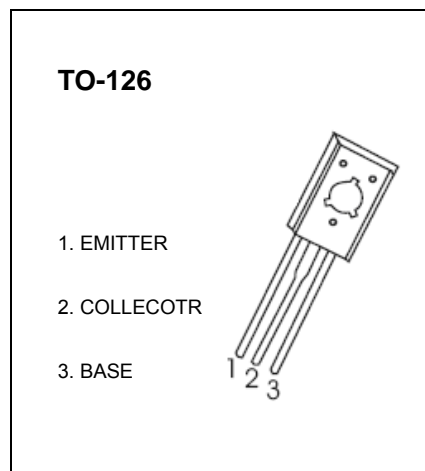
BD438,440,442 TRANSISTOR (PNP)

FEATURES

- Amplifier and Switching Applications

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

Symbol	Parameter	Value	Unit	
V _{CB0}	Collector-Base Voltage	BD438 -45 BD440 -60 BD442 -80	V	
	V _{CEO}	Collector-Emitter Voltage	BD438 -45 BD440 -60 BD442 -80	V
		V _{EBO}	Emitter-Base Voltage	-5
I _C		Collector Current –Continuous	-4	A
P _C	Collector Power Dissipation	1.25	W	
T _J	Junction Temperature	150	°C	
T _{stg}	Storage Temperature	-55-150	°C	

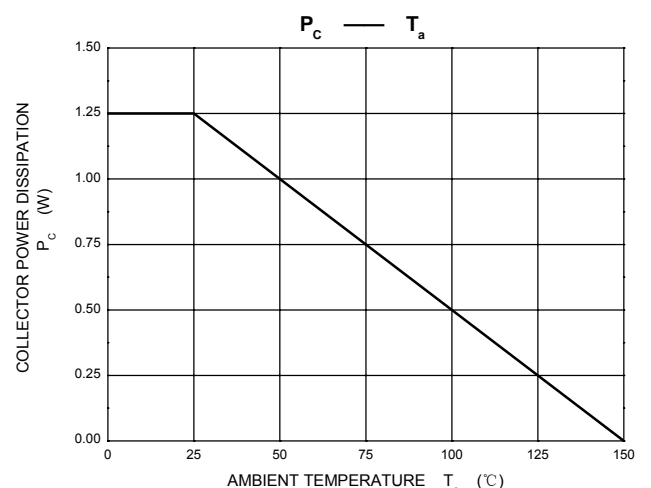
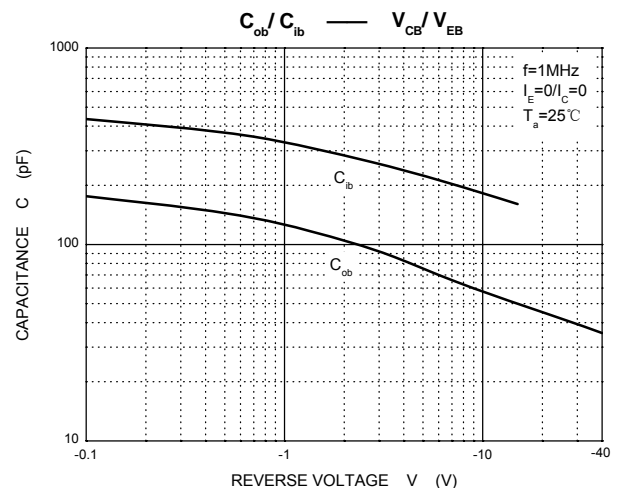
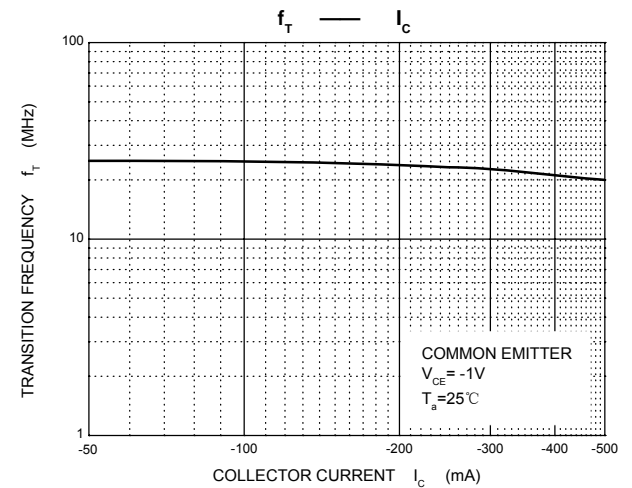
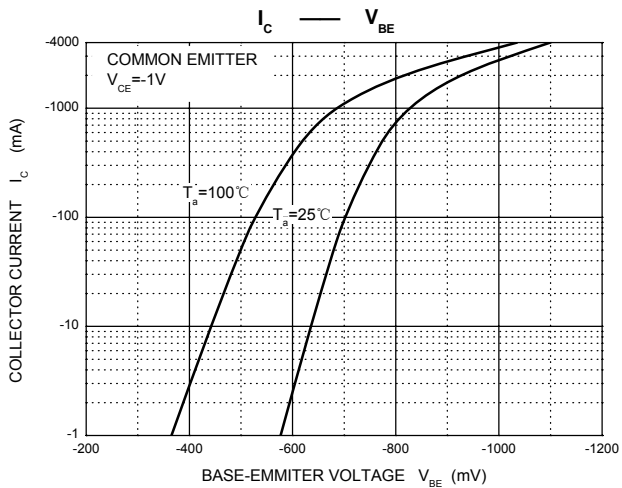
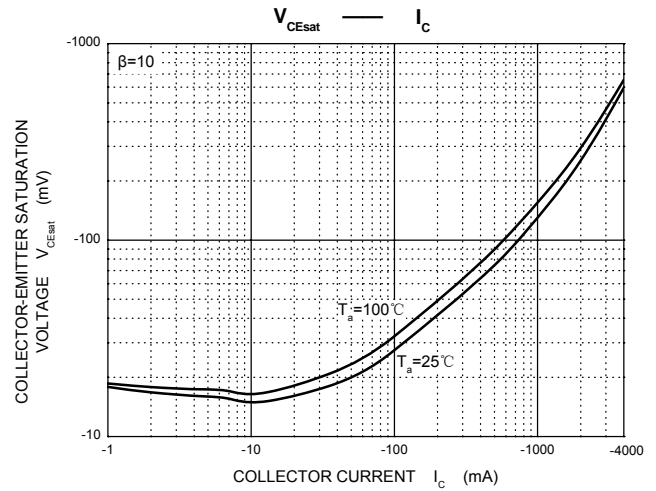
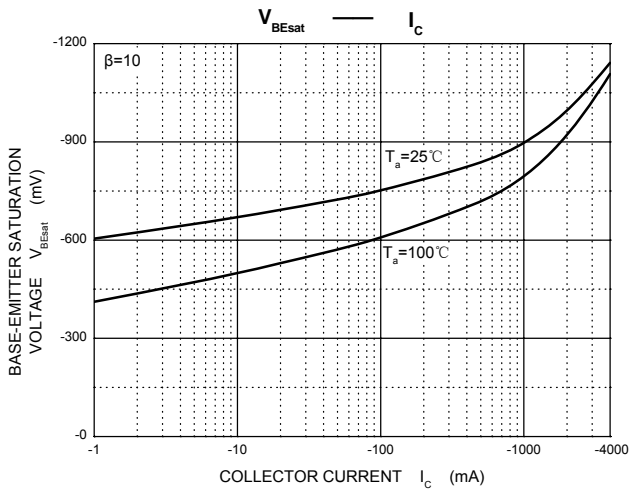
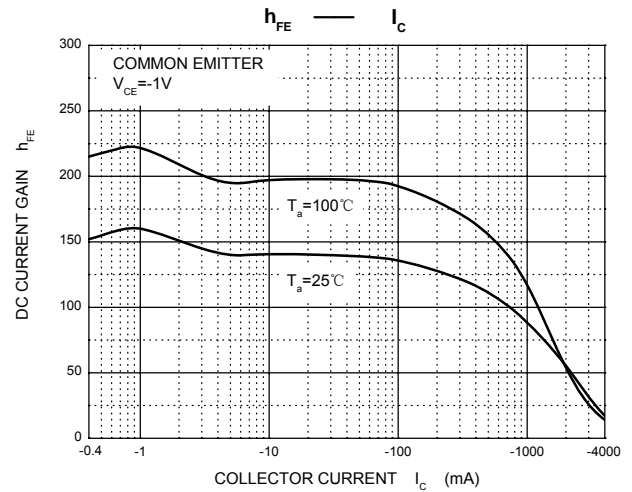
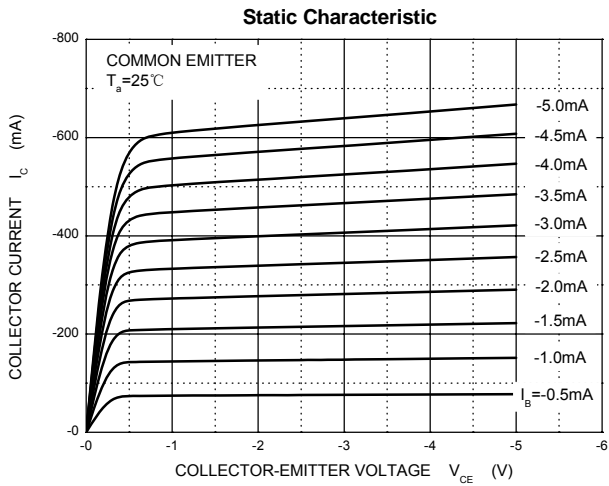


ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

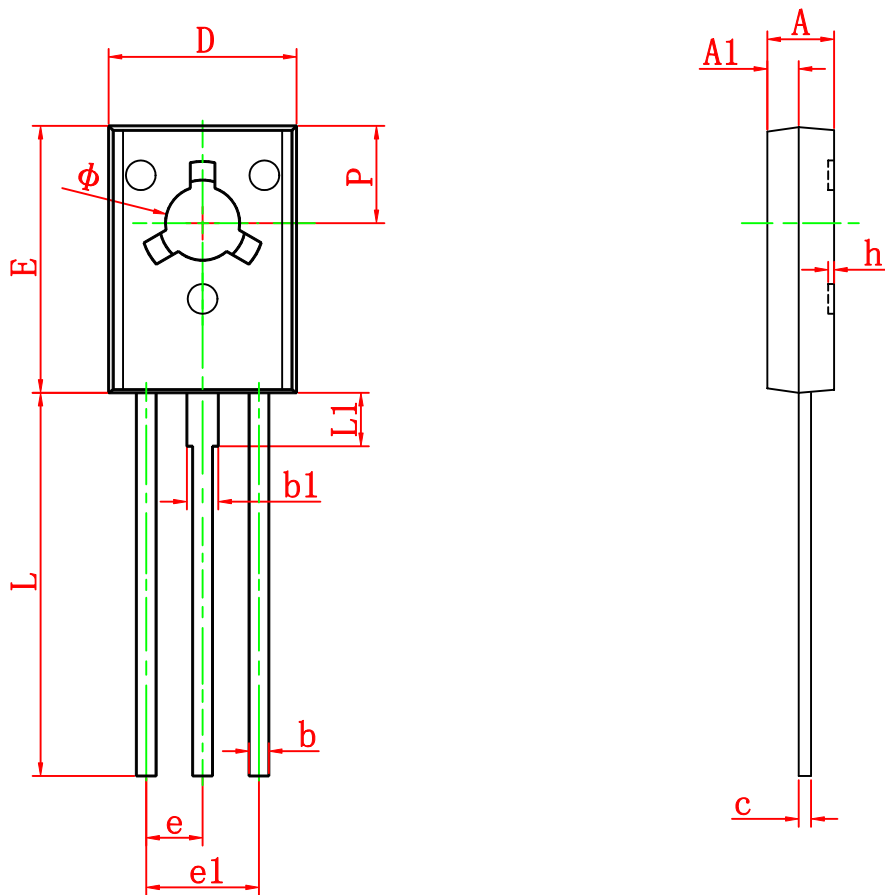
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =-100μA, I _E =0	BD438 -45 BD440 -60 BD442 -80			V	
		Collector-emitter breakdown voltage	V _{CEO(SUS)} ⁽¹⁾	I _C =-100mA, I _B =0	BD438 -45 BD440 -60 BD442 -80		V
				Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =-100μA, I _C =0	-5
Collector cut-off current	I _{CBO}			V _{CB} =-45V, I _E =0	BD438		-100
		V _{CB} =-60V, I _E =0	BD440				
		V _{CB} =-80V, I _E =0	BD442				
Emitter cut-off current	I _{EBO}	V _{EB} =-5V, I _C =0			-1	mA	
DC current gain	h _{FE(1)} ⁽¹⁾	V _{CE} =-5V, I _C =-10mA	BD438 30 BD440 20 BD442 15				
		h _{FE(2)} ⁽¹⁾	V _{CE} =-1V, I _C =-500mA	BD438 85		375	
				BD440/BD442 40		475	
h _{FE(3)} ⁽¹⁾	V _{CE} =-1V, I _C =-2A	BD438 40					
		BD440 25					
		BD442 15					
Collector-emitter saturation voltage	V _{CE(sat)} ⁽¹⁾	I _C =-3A, I _B =-300mA	BD438 BD440/BD442		-0.7 -0.8	V	
Base-emitter voltage	V _{BE} ⁽¹⁾	V _{CE} =-1V, I _C =-2A	BD438 BD440/BD442		-1.2 -1.5	V	
Transition frequency	f _T	V _{CE} =-1V, I _C =-250mA, f=1MHz	3			MHz	

⁽¹⁾Pulse test.

Typical Characteristics



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