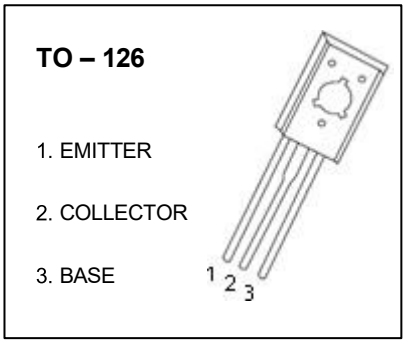
TO-126 Plastic-Encapsulate Transistors

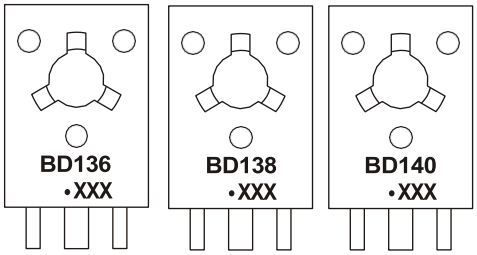
BD136 / BD138 / BD140 TRANSISTOR (PNP)



FEATURES

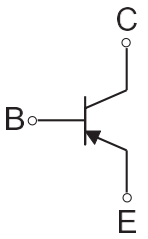
- High Current
- Complement To BD135, BD137 And BD139

MARKING



BD136,BD138,BD140=Device code
Soliddot = Green molding compound device, if none, the normal device
XXX=Code

Equivalent Circuit



ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
BD136	TO-126	Bulk	200pcs/Bag
BD138	TO-126	Bulk	200pcs/Bag
BD140	TO-126	Bulk	200pcs/Bag
BD136-TU	TO-126	Tube	60pcs/Tube
BD138-TU	TO-126	Tube	60pcs/Tube
BD140-TU	TO-126	Tube	60pcs/Tube

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{CBO}	Collector-Base Voltage	BD136	-45	V
		BD138	-60	
		BD140	-80	
V_{CEO}	Collector-Emitter Voltage	BD136	-45	V
		BD138	-60	
		BD140	-80	
V_{EBO}	Emitter-Base Voltage		-5	V
I_C	Collector Current		-1.5	A
P_C	Collector Power Dissipation		1.25	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient		100	℃/W
T_j	Junction Temperature		150	℃
T_{stg}	Storage Temperature		-55~+150	℃

ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

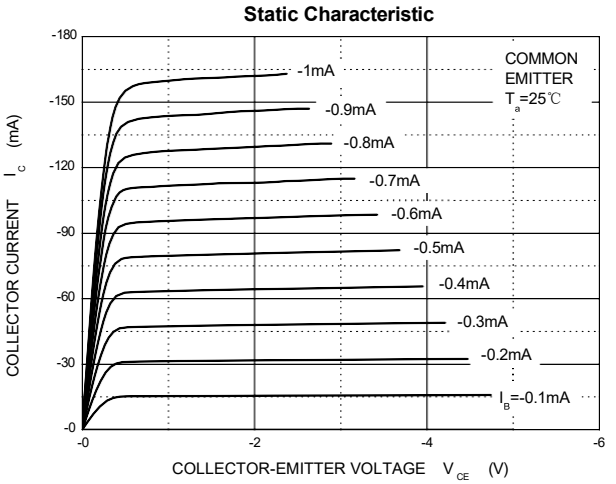
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= -0.1mA,I_E=0				
BD136			-45			V
BD138			-60			
BD140			-80			
Collector-emitter sustaining voltage	$V_{CEO(SUS)}$	I_C=-0.03A,I_B=0				
BD136			-45			V
BD138			-60			
BD140			-80			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-0.1mA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-30V,I_E=0			-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-5V,I_C=0			-10	μA
DC current gain	$h_{FE(1)}$*	V_{CE}=-2V, I_C=-150mA	40		250	
	$h_{FE(2)}$*	V_{CE}=-2V, I_C=-5mA	25			
	$h_{FE(3)}$*	V_{CE}=-2V, I_C=-500mA	25			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-500mA,I_B=-50mA			-0.5	V
Base-emitter voltage	V_{BE}*	V_{CE}=-2V, I_C=-500mA			-1	V

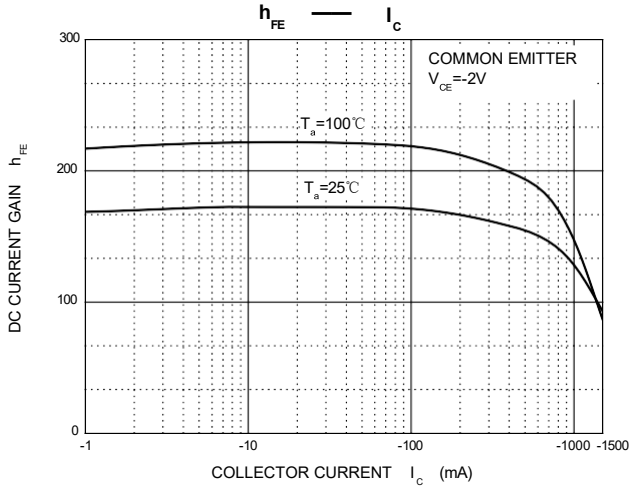
*Pulse test: pulse width ≤350μs, duty cycle≤ 2.0%.

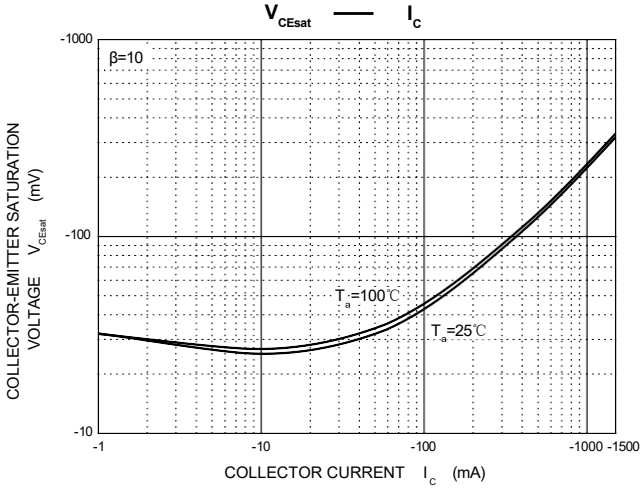
CLASSIFICATION OF $h_{FE(1)}$

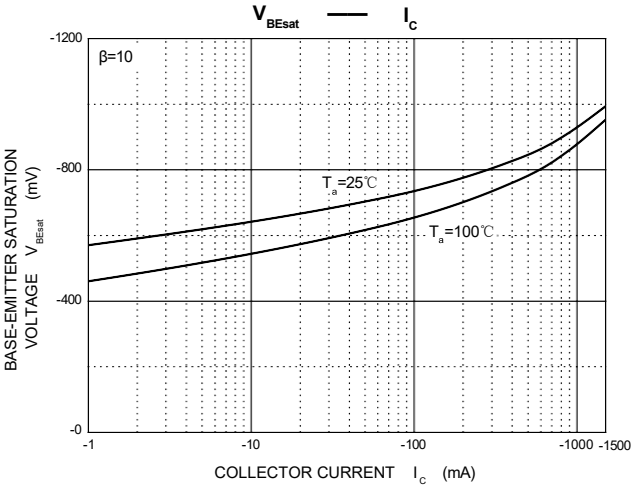
RANK	6	10	16
RANGE	40-100	63-160	100-250

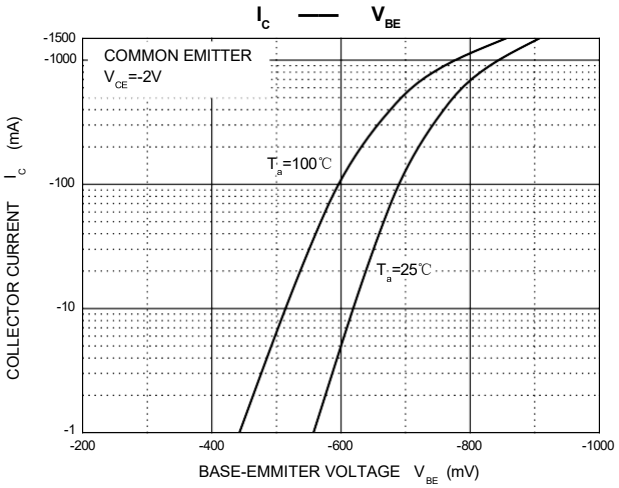
Typical Characteristics

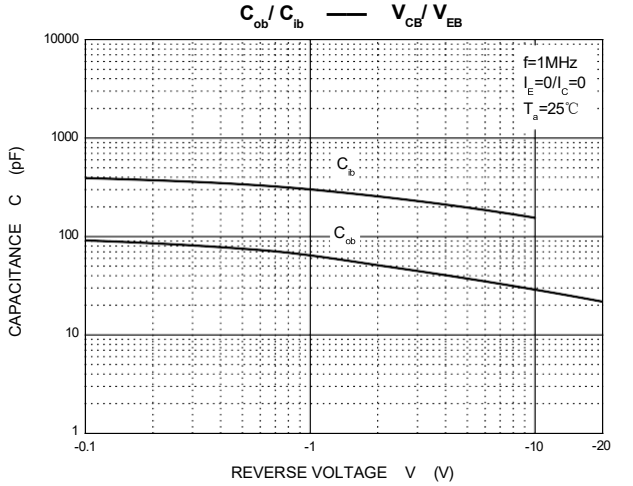


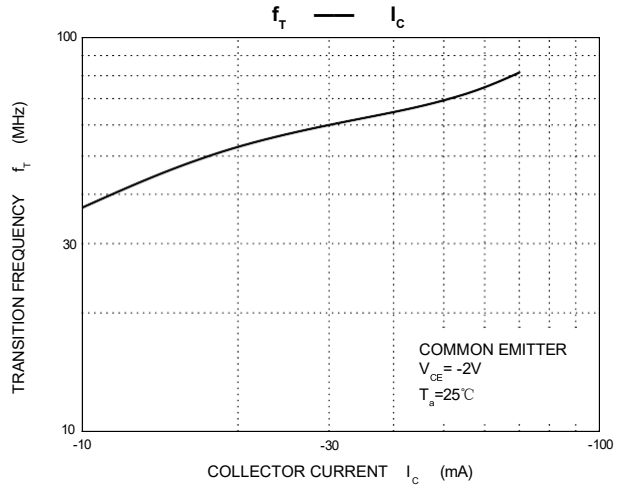


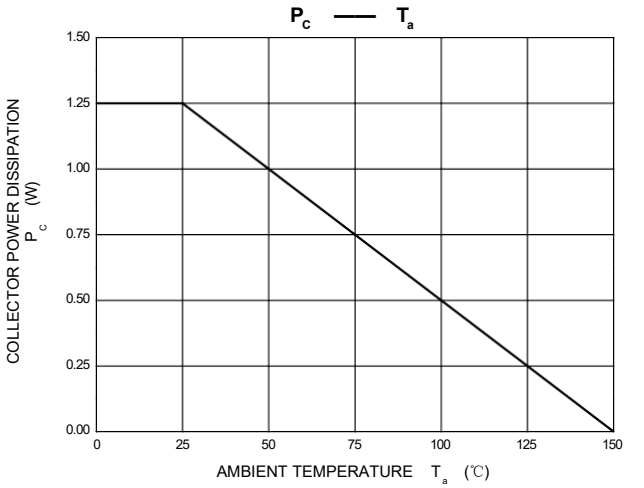




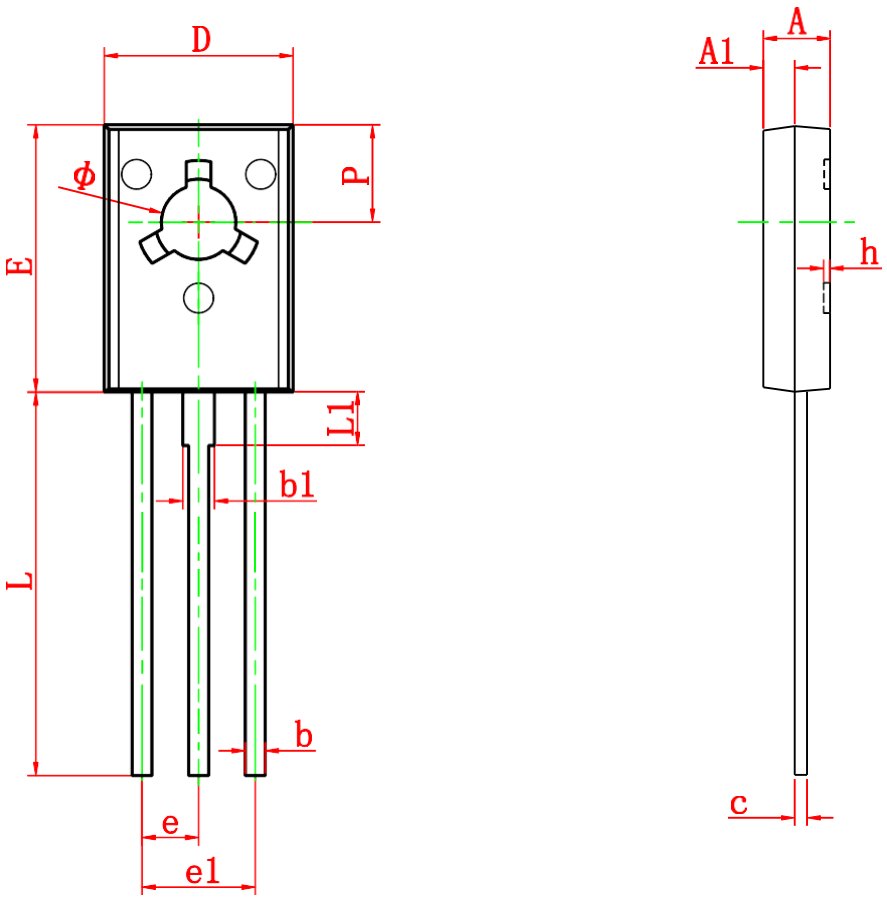








TO-126 Package Outline Dimensions



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