SHIKUES

BD139

NPN Silicon Epitaxial Planar Transistor

- High Current
- Complementary to BD140

TO – 126

1. EMITTER
2. COLLECTOR
3. BASE

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

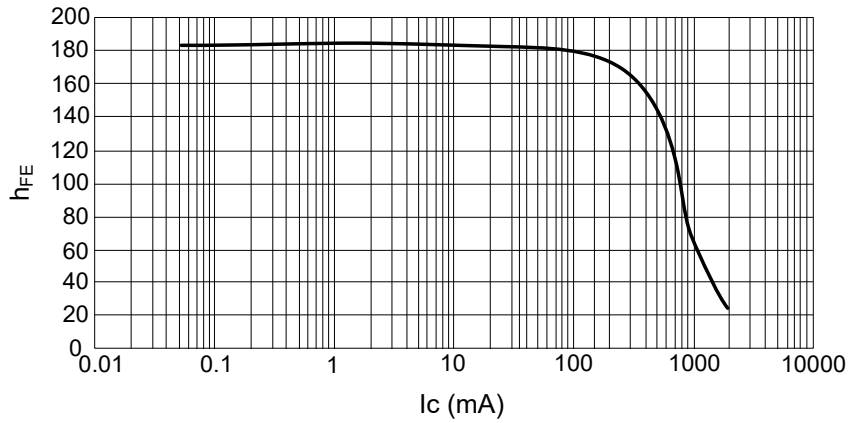
Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	1	A
P_C	Collector Power Dissipation	1.25	W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

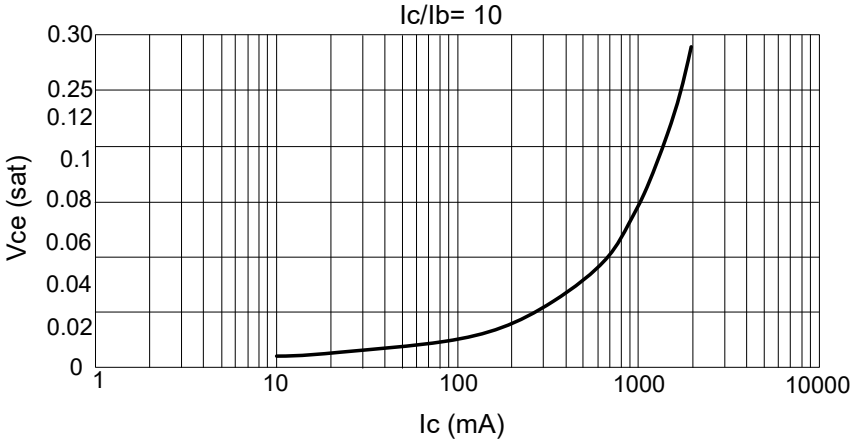
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 1mA, I_E=0	100			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 10mA, I_B=0	80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 1mA, I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}= 30V, I_E=0			90	nA
Collector cut-off current	I_{CEO}	V_{CE}= 30V, I_B=0			5	μA
Emitter cut-off current	I_{EBO}	V_{EB}= 4V, I_C=0			90	nA
DC current gain	h_{FE1}	V_{CE}= 2V, I_C= 5mA	60			
	h_{FE2}	V_{CE}= 2V, I_C= 150mA	40		300	
	h_{FE3}	V_{CE}= 2V, I_C= 500mA	30			
Collector-emitter saturation voltage	V_{CE}(sat)	I_C= 500mA, I_B= 50mA			0.45	V
Base-emitter saturation voltage	V_{BE}(sat)	I_C= 500mA, I_B= 50mA			1.04	V

TYPICAL CHARACTERISTICS

DC Current Gain
Vce=2V

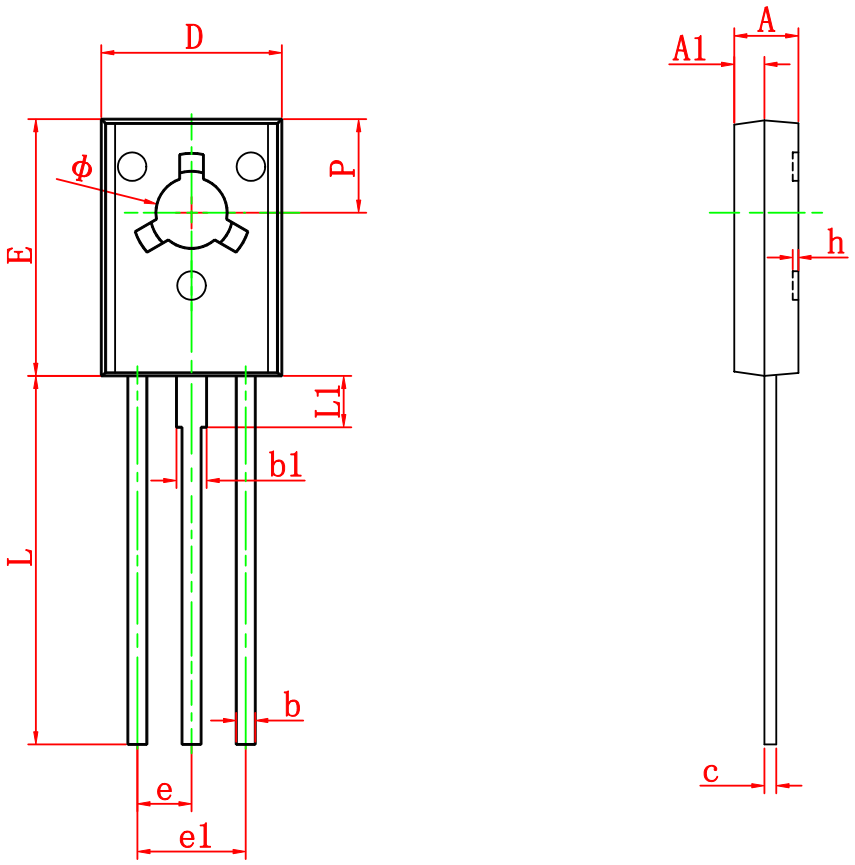


Collector-Emitter Saturation Voltage
Ic/Ib= 10



PACKAGE OUTLINE

TO-126



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