

TO-126 Plastic-Encapsulate Transistors

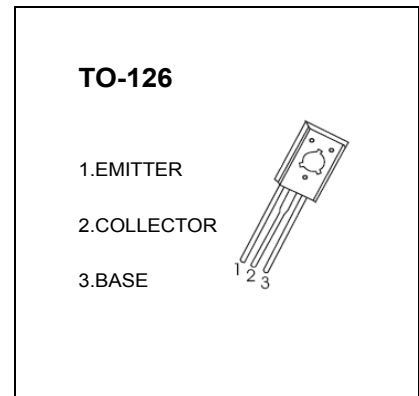
TIP120,121,122 Darlington Transistor (NPN)

TIP125,126,127 Darlington Transistor (PNP)

FEATURES

Medium Power Complementary Silicon Transistors

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



Symbol	Parameter	TIP120 TIP125	TIP121 TIP126	TIP122 TIP127	Unit
V _{CBO}	Collector-Base Voltage	60	80	100	V
V _{CEO}	Collector-Emitter Voltage	60	80	100	V
V _{EBO}	Emitter-Base Voltage		5		V
I _C	Collector Current -Continuous		5		A
P _C *	Collector Power Dissipation		1.25		W
R _{θJA}	Thermal Resistance Junction to Ambient		100		°C/W
R _{θJc}	Thermal Resistance Junction to Case		8.33		°C/W
T _J	Junction Temperature		150		°C
T _{stg}	Storage Temperature		-55~+150		°C

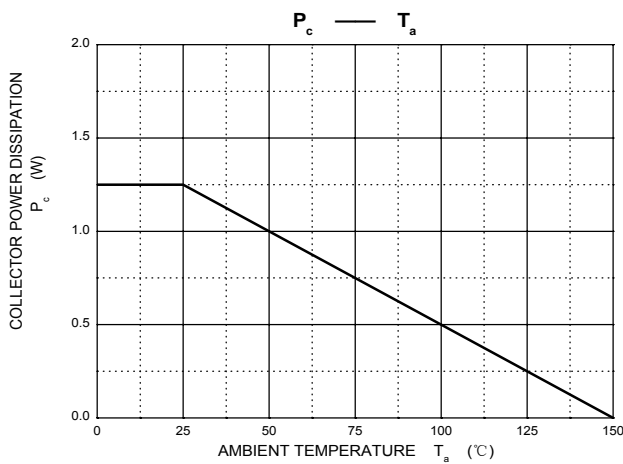
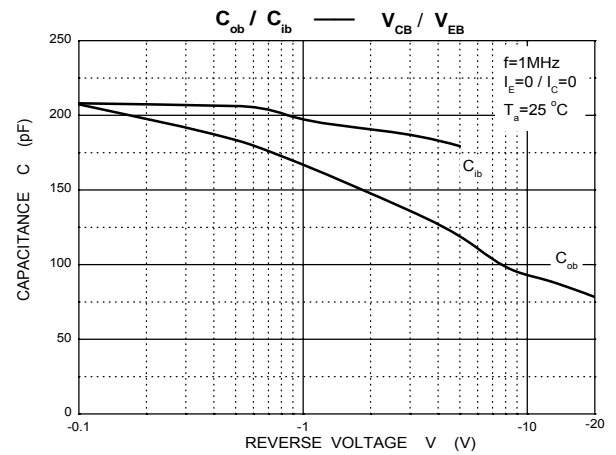
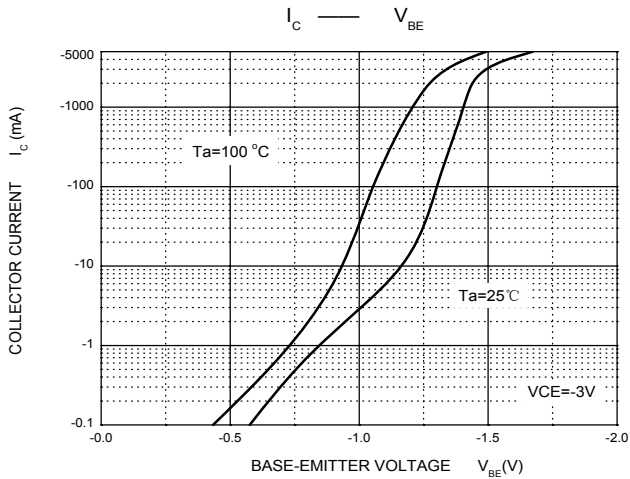
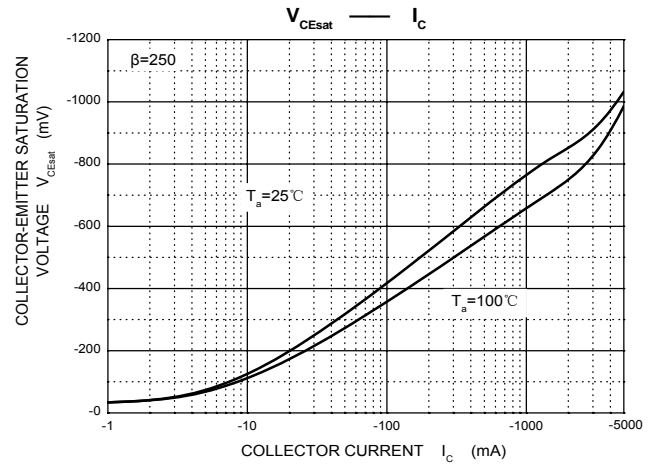
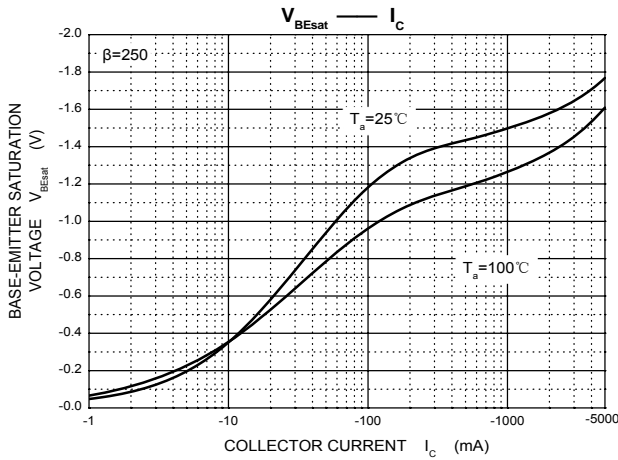
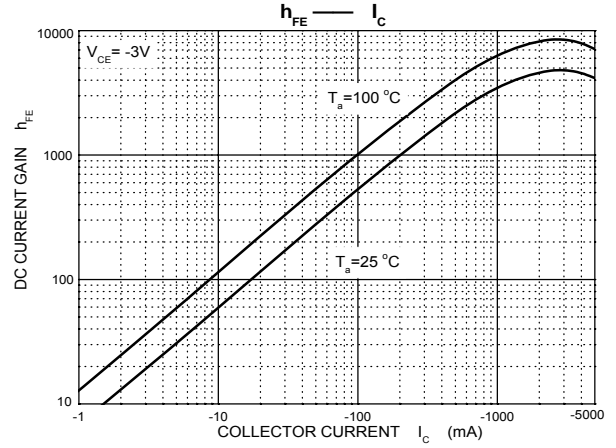
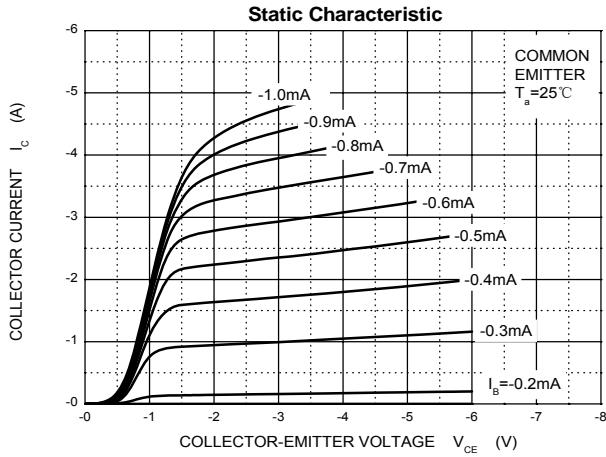
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage TIP120,TIP125 TIP121,TIP126 TIP122,TIP127	V _{(BR)CBO}	I _C = 1mA, I _E =0	60 80 100		V
Collector-emitter breakdown voltage TIP120,TIP125 TIP121,TIP126 TIP122,TIP127	V _{CEO(SUS)}	I _C = 30mA, I _B =0	60 80 100		V
Collector cut-off current TIP120,TIP125 TIP121,TIP126 TIP122,TIP127	I _{CBO}	V _{CB} = 60 V, I _E =0 V _{CB} = 80 V, I _E =0 V _{CB} = 100V, I _E =0		0.2	mA
Collector cut-off current TIP120,TIP125 TIP121,TIP126 TIP122,TIP127	I _{CEO}	V _{CE} =30 V, I _B =0 V _{CE} =40 V, I _B =0 V _{CE} =50 V, I _B =0		0.5	mA
Emitter cut-off current	I _{EBO}	V _{EB} =5 V, I _C =0		2	mA
DC current gain	h _{FE(1)}	V _{CE} = 3V, I _C =0.5A	1000		
	h _{FE(2)}	V _{CE} = 3V, I _C =3 A	1000		
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =3A, I _B =12mA I _C =5 A, I _B =20mA		2 4	V
Base-emitter voltage	V _{BE}	V _{CE} =3V, I _C =3 A		2.5	V
Output Capacitance TIP125,TIP126,TIP127 TIP120,TIP121,TIP122	C _{ob}	V _{CB} =10V, I _E =0, f=0.1MHz		300 200	pF

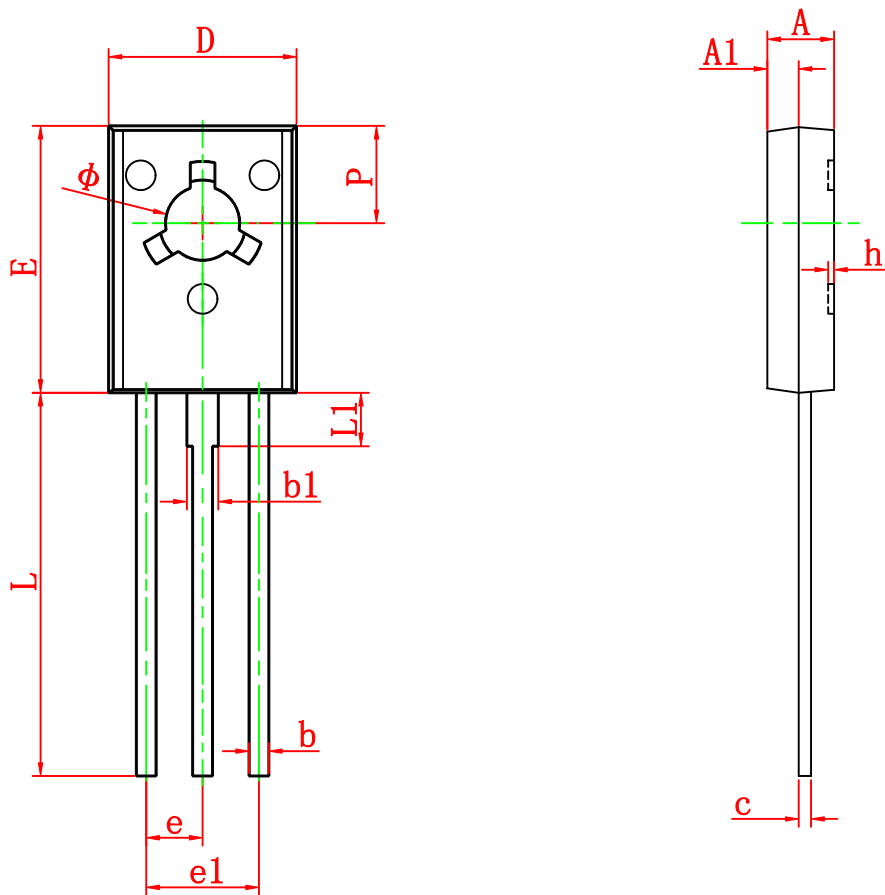
* This test is performed with no heat sink at T_a=25°C.

Typical Characteristics

TIP127



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