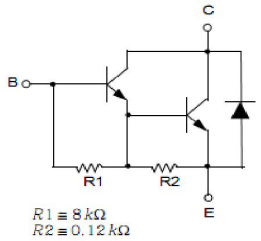
TIP122 NPN

TO-220 Plastic-Encapsulate Transistors

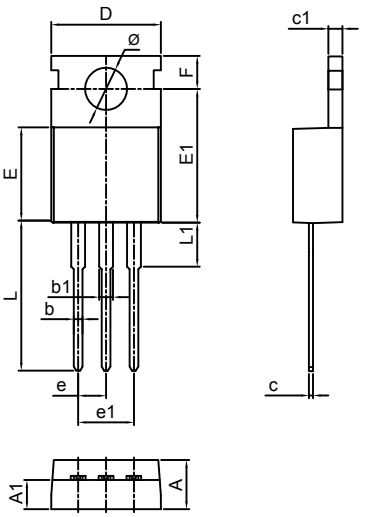
NPN Epitaxial Darlington Transistor

Medium Power Linear Switching Applications

• Complementary to TIP127



TO-220



SYMBOL	MIN.	TYP	MAX.
A	4.30	4.50	4.70
A1	2.52	2.67	2.82
b	0.71	0.81	0.91
b1	1.17	1.27	1.37
c	0.30	0.40	0.50
c1	1.17	1.27	1.37
D	9.90	10.00	10.20
E	8.50	8.70	8.90
E1	12.00	12.25	12.50
e	2.44	2.54	2.64
e1	4.88	5.08	5.26
F	2.60	2.75	2.80
L	13.00	13.50	14.00
L1	3.80	4.00	4.20
Φ	3.75	3.85	3.95

Dimensions in inches and (millimeters)

Absolute Maximum Rating (Ta=25℃)

Parameter		Symbol	Value	Unit
Collector-Base Voltage		V_{CBO}	100	V
Collector-Emitter Voltage		V_{CEO}	100	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current(DC)		I_C	5	A
Collector Current (Pulse)		I_{CP}	8	A
Collector Dissipation	Ta =25 ℃	P_C	2	W
	Tc =25 ℃		65	
Junction Temperature		Tj	150	℃
Storage Temperature		Tstg	-65～150	℃

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Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	I_C = 100mA，I_B = 0	100			V
Collector-base cut-off current	I_{CBO}	V_{CB} = 100V，I_E = 0			0.2	mA
Collector- emitter cut-off current	I_{CEO}	V_{CE} = 50V，I_E = 0			0.5	mA
Emitter-base cut-off current	I_{EBO}	V_{EB} = 5V，I_C = 0			2	mA
DC current gai*	h_{FE}	V_{CE}= 3V，I_C= 0.5A V_{CE}= 3V，I_C= 3A	1000 1000			
Collector-emitter saturation voltage*	$V_{CE(sat)}$	I_C =3A，I_B = 12mA I_C =5A，I_B = 20mA			2.0 4.0	V
Base-Emitter on Voltage *	$V_{BE\ (on)}$	V_{CE}= 3V，I_C= 3A			2.5	V
Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f = 0.1MHz			200	pF

* Pulse Test : PW ≤ 300μs, Duty cycle ≤ 2%

RATING AND CHARACTERISTIC CURVES (TIP122)

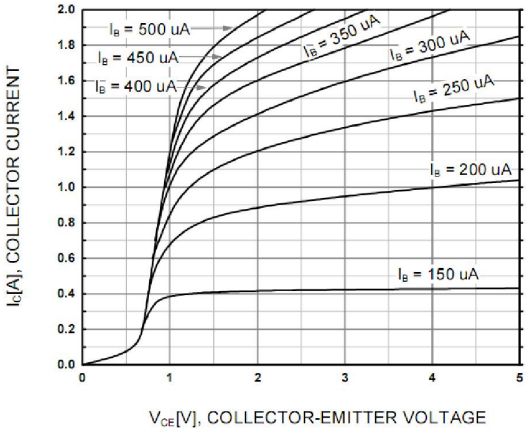

Figure 1. Static CharacteristicFigure

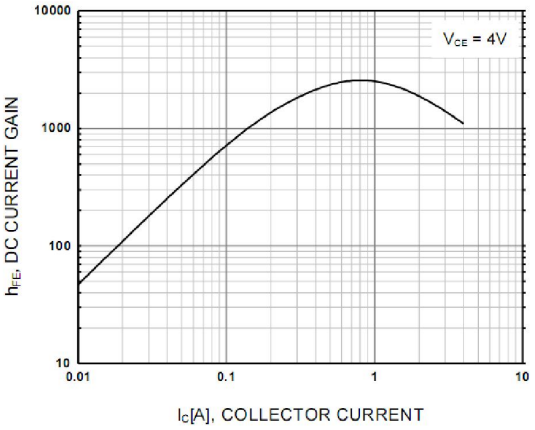

Figure 2. DC current Gain

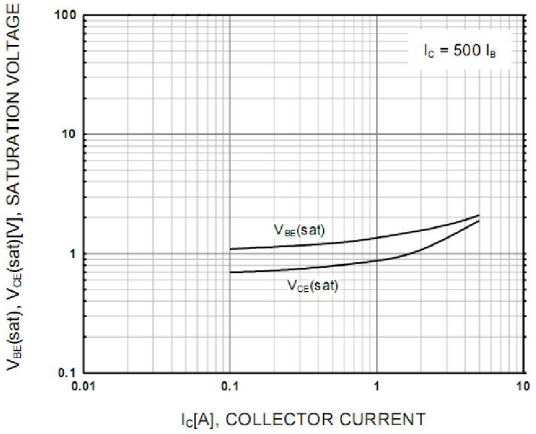

Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

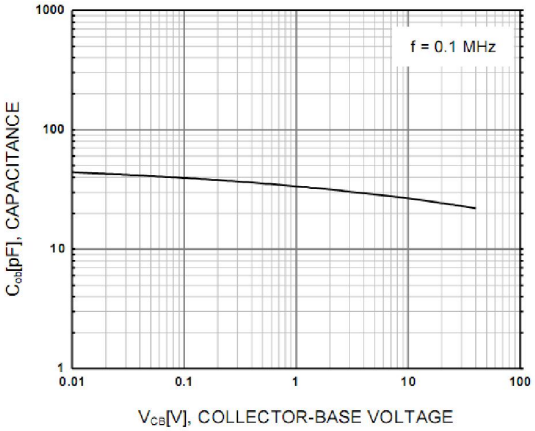

Figure 4. Collector Output Capacitance

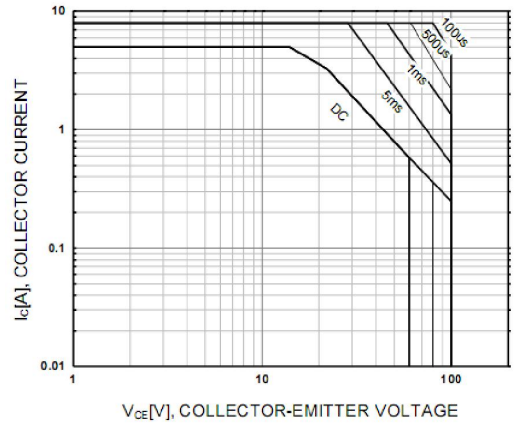

Figure 5. Safe Operating Area

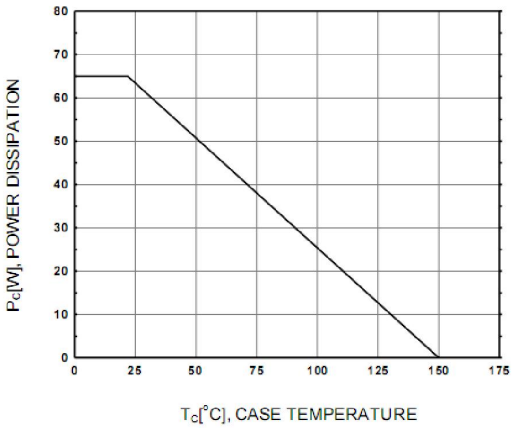

Figure 6. Power Derating