

### TIP122 Darlington Transistor(NPN)

#### Feature

- Medium Power Complementary Silicon Transistors

#### Marking

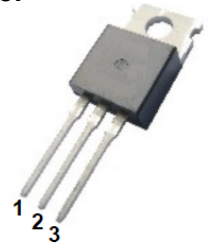


TIP122: Product Type.

\*\*\*\*: Lot No. Code, code change with Lot No.

#### TO-220

1. Base
2. Collector
3. Emitte



#### MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

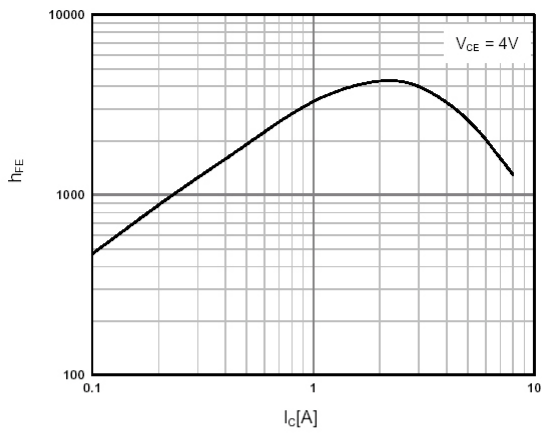
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	100	V
Collector-Emitter Voltage	V <sub>CEO</sub>	100	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current - Continuous	I <sub>C</sub>	5	A
Peak Collector Current	I <sub>CP</sub>	8	A
Base Current - Continuous	I <sub>B</sub>	120	mA
Collector Power Dissipation	P <sub>C</sub>	2	W
Collector Power Dissipation	P <sub>C(Tc=25c )</sub>	65	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55~ +150	°C

#### ELECTRICAL CHARACTERISTICS(T<sub>A</sub>=25°C unless otherwise noted)

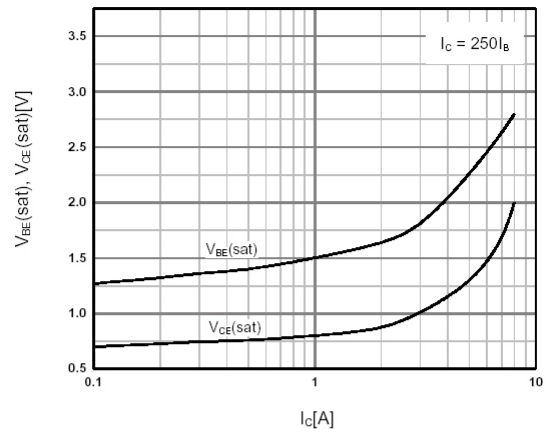
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	V <sub>CEO</sub>	I <sub>C</sub> =100mA , I <sub>B</sub> =0	100			V
Collector Cut-Off Current	I <sub>CB0</sub>	V <sub>CB</sub> =100V, I <sub>E</sub> =0			0.2	mA
Collector Cut-Off Current	I <sub>CEO</sub>	V <sub>CE</sub> =50V, I <sub>B</sub> =0			0.5	mA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			2	mA
DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =3V, I <sub>C</sub> =0.5A	1000			
	h <sub>FE2</sub>	V <sub>CE</sub> =3V, I <sub>C</sub> =3A	1000			
Collector-Emitter Saturation Voltage	V <sub>CE(sat)1</sub>	I <sub>C</sub> =3A, I <sub>B</sub> =12mA			2	V
	V <sub>CE(sat)2</sub>	I <sub>C</sub> =5A, I <sub>B</sub> =20mA			4	V
Base to Emitter Voltage	V <sub>BE</sub>	I <sub>C</sub> =3.0A V <sub>CE</sub> =3.0V			2.5	V
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V I <sub>E</sub> =0 f=0.1MHz			200	pF

**Typical Characteristics**

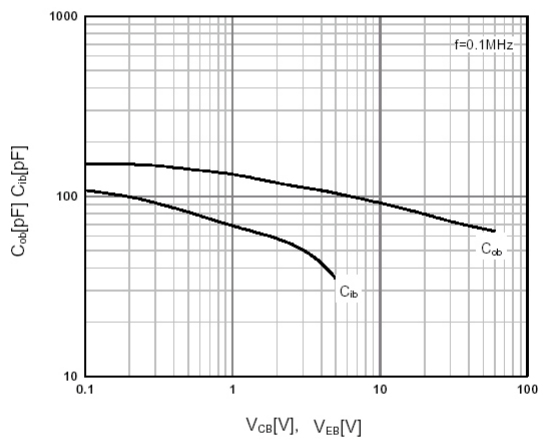
**hFE - IC**



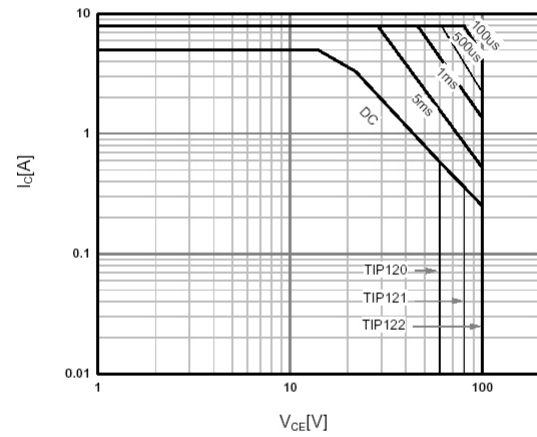
**$V_{BE(sat)}, V_{CE(sat)} - I_C$**



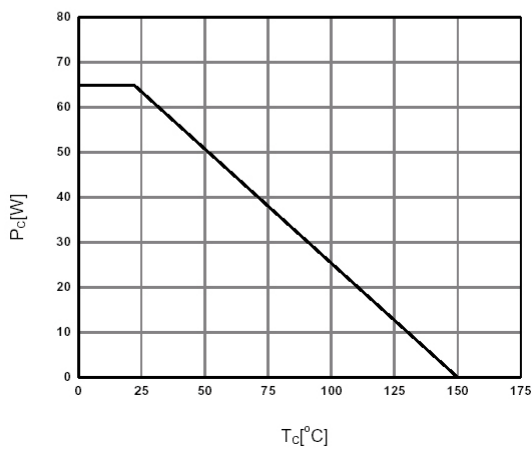
**$C_{ob}, C_{ib} - V_{CB}, V_{EB}$**

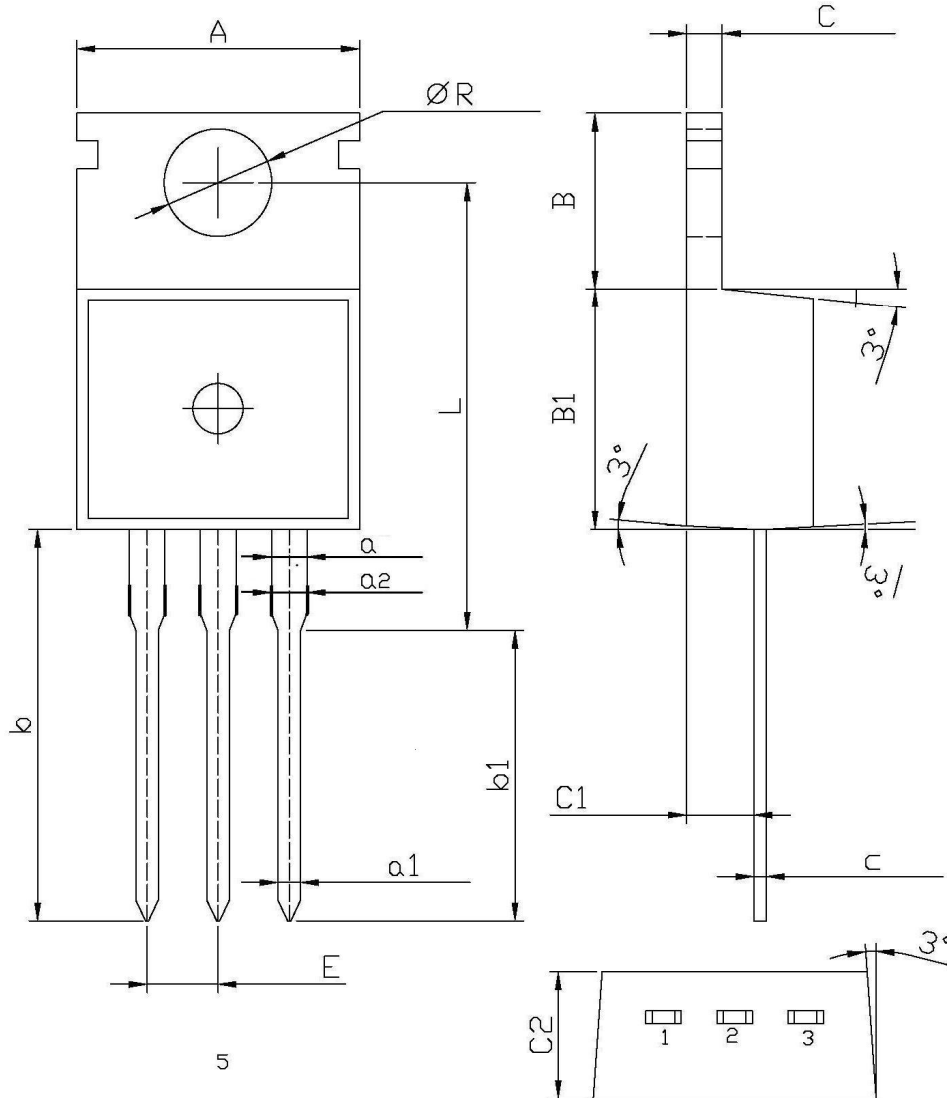


**$I_C - V_{CE}$**



**$P_c - T_c$**



**TO-220 Package Information**


Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	9.8	10.2	C	1.2	1.4
R	3.56	3.64	B	6.3	6.7
L	15.7	16.1	B1	9.0	9.4
b	12.6	13.6	C1	2.2	2.6
b1	9.6	10.6	a1	0.7	0.9
a	1.22	1.32	c	0.4	0.6
E	2.34	2.74	C2	4.3	4.7
Q2	1.25	1.45			

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