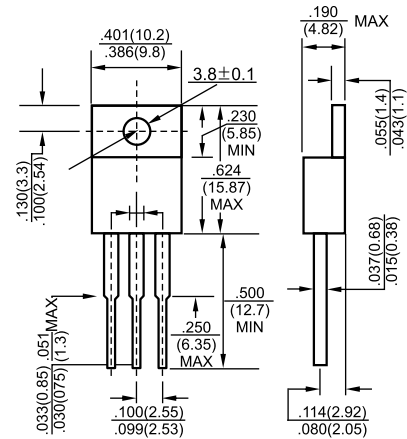


- 1.BASE
- 2.COLLECTOR
- 3.EMITTER

TO-220



Dimensions in inches and (millimeters)

Features

- ✧ **TIP120,121,122** Darlington TRANSISTOR (NPN)
- ✧ **TIP125,126,127** Darlington TRANSISTOR (PNP)
- ✧ Medium Power Complementary silicon transistors

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	TIP120 TIP125	TIP121 TIP126	TIP122 TIP127	Units
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	2			W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	62.5			$^{\circ}\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction to Case	1.92			$^{\circ}\text{C/W}$
T_J	Junction Temperature	150			$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55to+150			$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage TIP120,TIP125 TIP121,TIP126 TIP122,TIP127	$V_{(BR)CBO}$	$I_C = 1\text{mA}, I_E = 0$	60 80 100		V
Collector-emitter breakdown voltage TIP120,TIP125 TIP121,TIP126 TIP122,TIP127	$V_{CEO(SUS)}$	$I_C = 30\text{mA}, I_B = 0$	60 80 100		V
Collector cut-off current TIP120,TIP125 TIP121,TIP126 TIP122,TIP127	I_{CBO}	$V_{CB} = 60\text{V}, I_E = 0$ $V_{CB} = 80\text{V}, I_E = 0$ $V_{CB} = 100\text{V}, I_E = 0$		0.2	mA
Collector cut-off current TIP120,TIP125 TIP121,TIP126 TIP122,TIP127	I_{CEO}	$V_{CE} = 30\text{V}, I_B = 0$ $V_{CE} = 40\text{V}, I_B = 0$ $V_{CE} = 50\text{V}, I_B = 0$		0.5	mA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$		2	mA
DC current gain	$h_{FE(1)}$	$V_{CE} = 3\text{V}, I_C = 0.5\text{A}$	1000		
	$h_{FE(2)}$	$V_{CE} = 3\text{V}, I_C = 3\text{A}$	1000		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3\text{A}, I_B = 12\text{mA}$ $I_C = 5\text{A}, I_B = 20\text{mA}$		2 4	V
Base-emitter voltage	V_{BE}	$V_{CE} = 3\text{V}, I_C = 3\text{A}$		2.5	V
Output Capacitance TIP125,TIP126,TIP127 TIP120,TIP121,TIP122	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$		300 200	pF

Typical Characteristics

