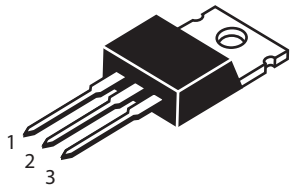
WEITRON

TIP120 Series

PNP/NPN Silicon Power Transistor

Lead(Pb)-Free



1. BASE
2. COLLECTOR
3. EMITTER

TO-220

FEATURES:

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

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

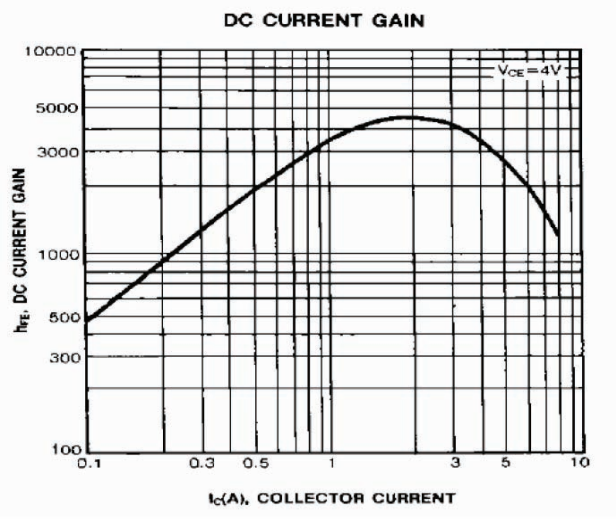
Symbol	Parameter	TIP120 TIP125	TIP121 TIP126	TIP122 TIP127	Units
V_{CBO}	Collector-Base Voltage	60	80	100	V
V_{CEO}	Collector-Emitter Voltage	60	80	100	V
V_{EBO}	Emitter-Base Voltage	5			V
I_C	Collector Current -Continuous	5			A
P_C	Collector Power Dissipation	2			W
$R_{\Theta JA}$	Thermal Resistance Junction to Ambient	62.5			℃/W
$R_{\Theta JC}$	Thermal Resistance Junction to Case	1.92			℃/W
T_J	Junction Temperature	150			℃
T_{stg}	Storage Temperature	-55-150			℃

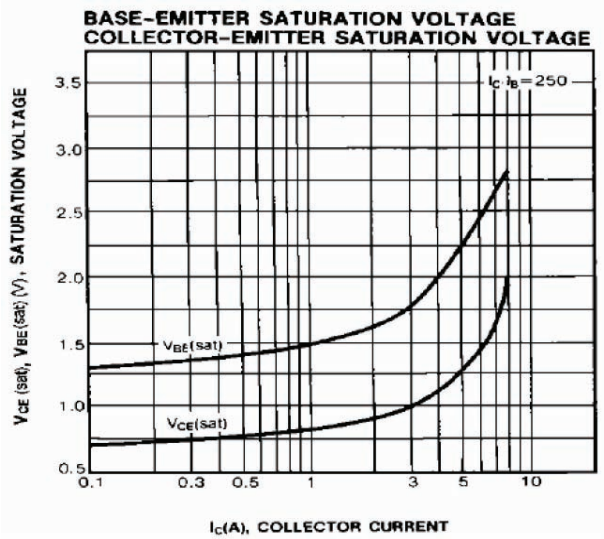
ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

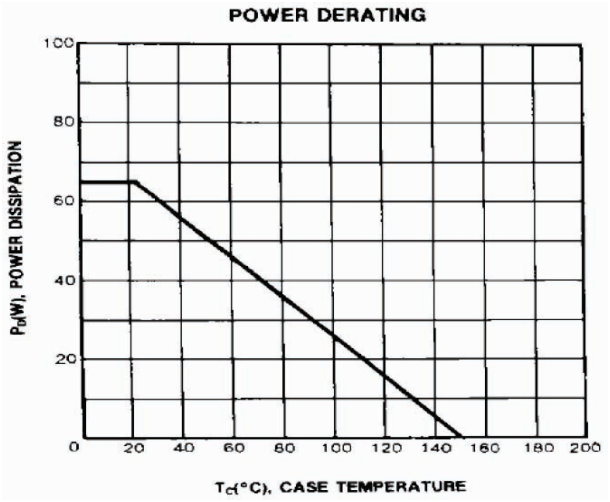
Parameter		Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	TIP120,TIP125 TIP121,TIP126 TIP122,TIP127	$V_{(BR)CBO}$	I_C=1mA, I_E=0	60 80 100		V
Collector-emitter breakdown voltage	TIP120,TIP125 TIP121,TIP126 TIP122,TIP127	$V_{CEO(SUS)}$	I_C=30mA, I_B=0	60 80 100		V
Collector cut-off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

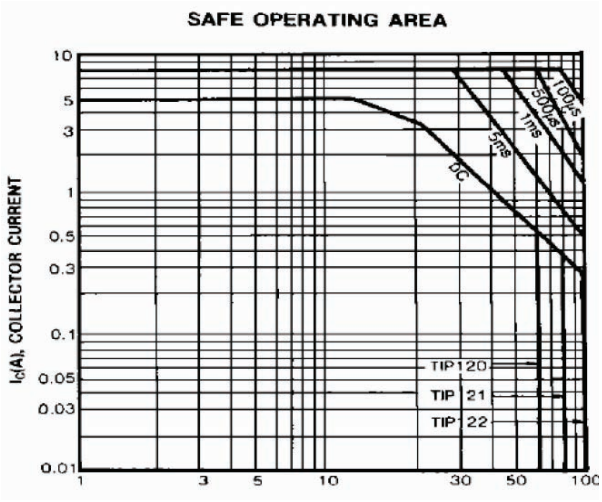
Typical Characteristics

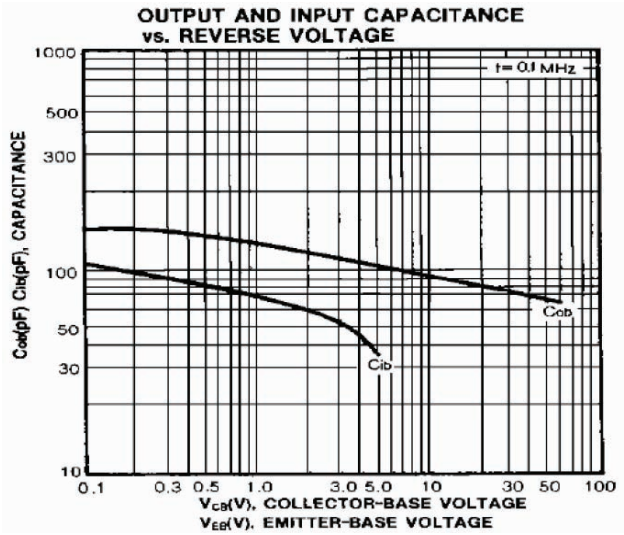
TIP120,121,122,125,126,127





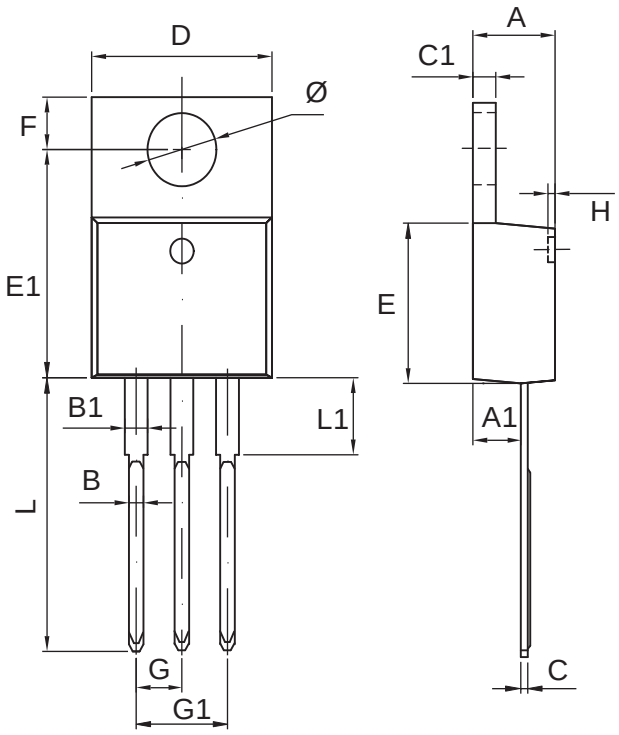






TO-220 Outline Dimensions

unit:mm



TO-220		
Dim	Min	Max
A	4.47	4.67
A1	2.52	2.82
B	0.71	0.91
B1	1.17	1.37
C	0.31	0.53
C1	1.17	1.37
D	10.01	10.31
E	8.50	8.90
E1	12.06	12.446
G	2.54 TYP	
G1	4.98	5.18
F	2.59	2.89
H	0.00	0.30
L	13.4	13.8
L1	3.56	3.96
Φ	3.73	3.93