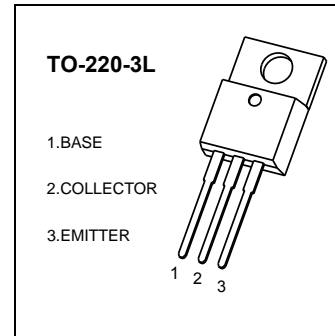


TO-220-3L Plastic-Encapsulate Transistors

TIP147 Darlington Transistor (PNP)

FEATURES

- Monolithic Darlington Configuration
- Integrated Antiparallel Collector-Emitter Diode



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

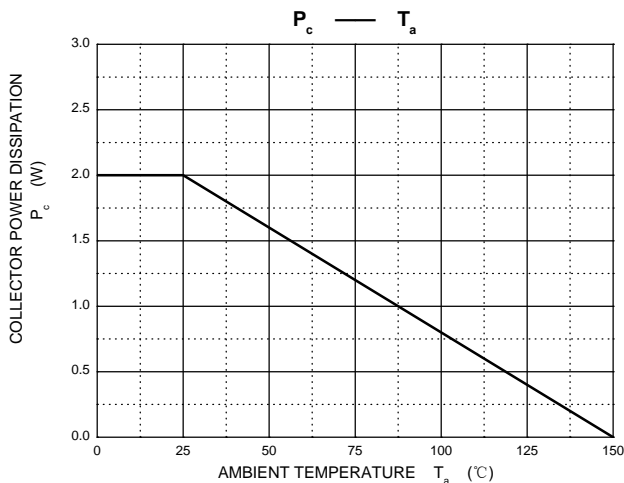
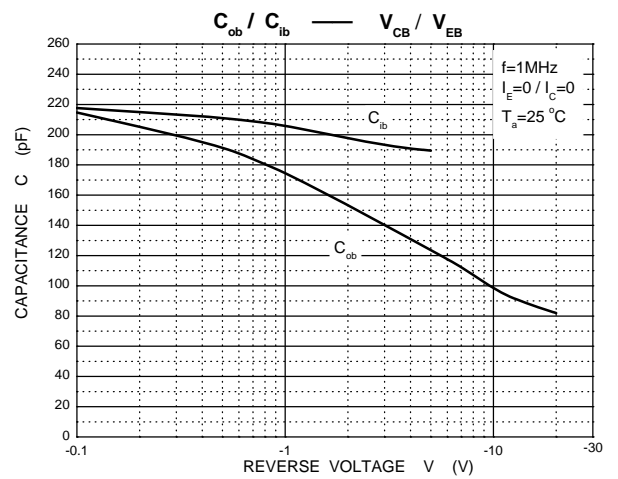
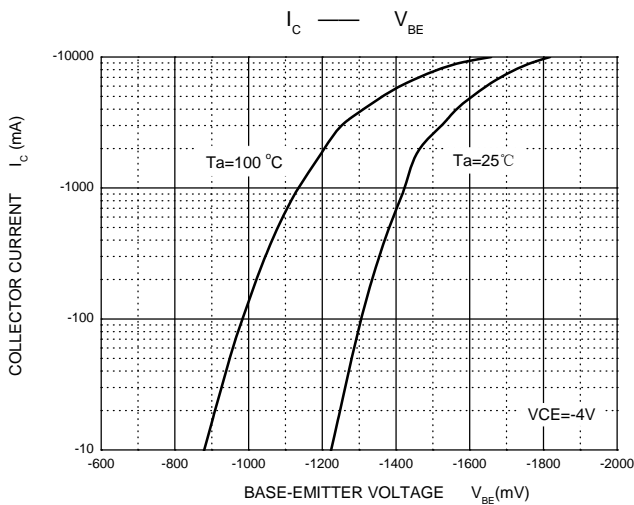
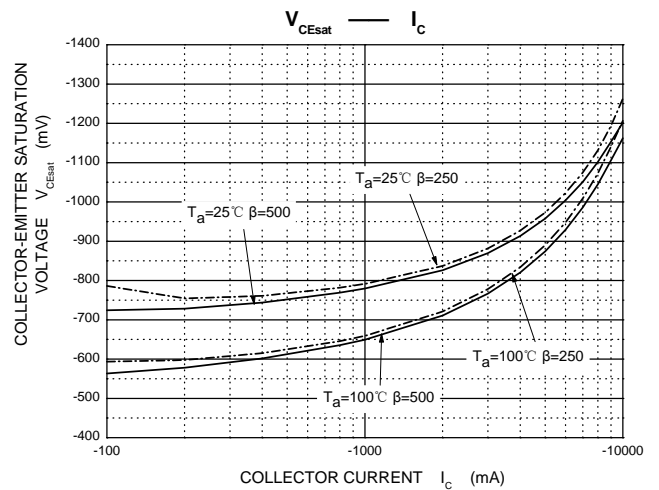
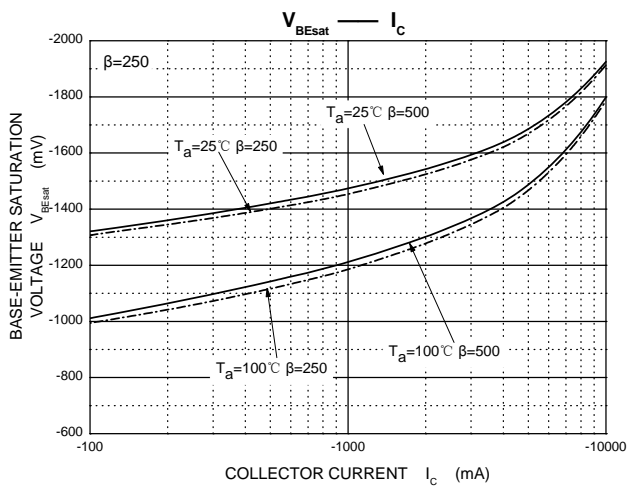
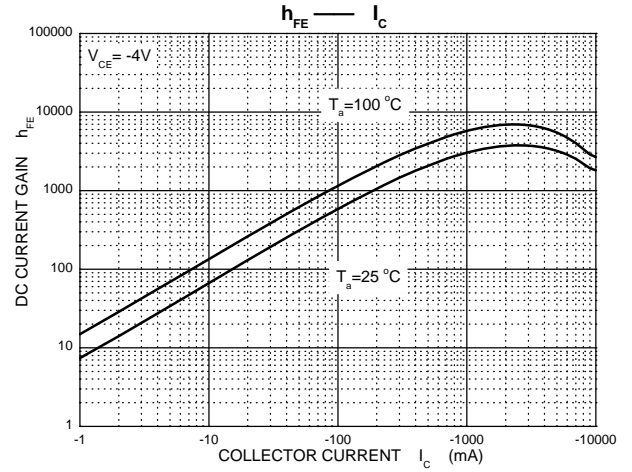
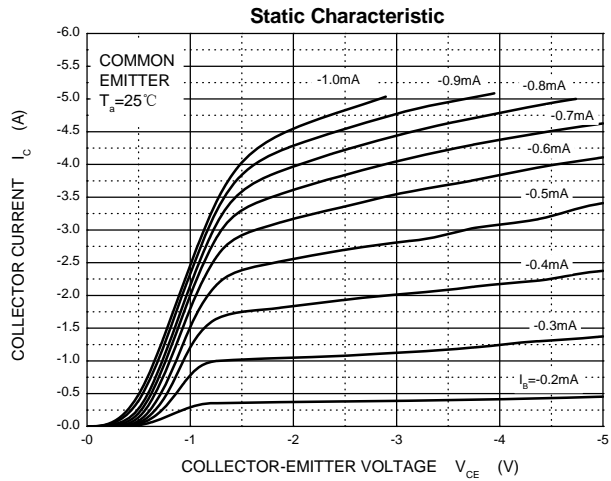
Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	-100	V
V_{CEO}	Collector-Emitter Voltage	-100	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-10	A
P_C	Collector Power Dissipation	2	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	62.5	$^{\circ}\text{C}/\text{W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

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

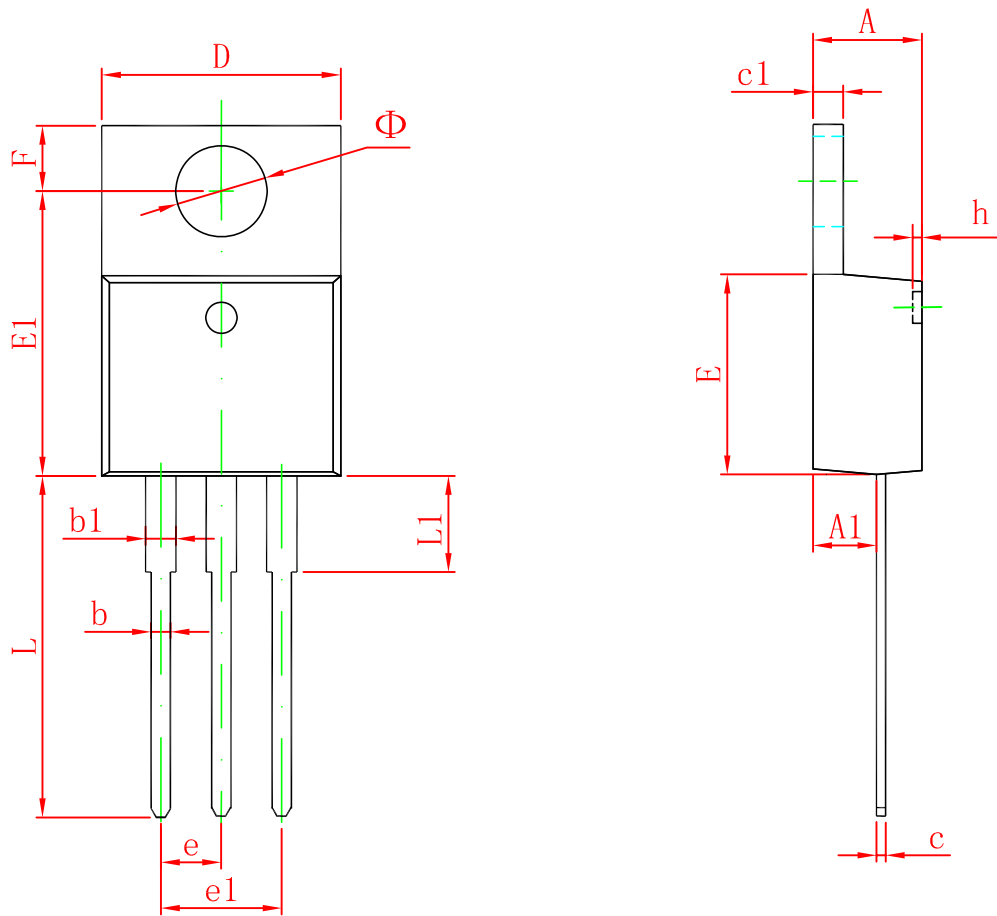
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CB0}$	$I_C=-1\text{mA}, I_E=0$	-100			V
Collector-emitter sustaining voltage	$V_{CEO(sus)^*}$	$I_C=-30\text{mA}, I_B=0$	-100			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-10\text{mA}, I_C=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB}=-100\text{V}, I_E=0$			-1	mA
Collector cut-off current	I_{CEO}	$V_{CE}=-50\text{V}, I_C=0$			-2	mA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$			-2	mA
DC current gain	$h_{FE(1)}$	$V_{CE}=-4\text{V}, I_C=-5\text{A}$	1000		12000	
	$h_{FE(2)}$	$V_{CE}=-4\text{V}, I_C=-10\text{A}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)(1)}$	$I_C=-5\text{A}, I_B=-10\text{mA}$			-2	V
	$V_{CE(sat)(2)}$	$I_C=-10\text{A}, I_B=-40\text{mA}$			-3	V
Base-emitter voltage	V_{BE}	$V_{CE}=-4\text{V}, I_C=-10\text{A}$			-3	V

*Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycles $\leq 2.0\%$.

Typical Characteristics



TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
Φ	3.735	3.935	0.147	0.155