

TO-220-3L Plastic-Encapsulate Transistors

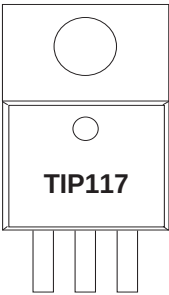
TIP117

DARLINGTON TRANSISTOR (PNP)

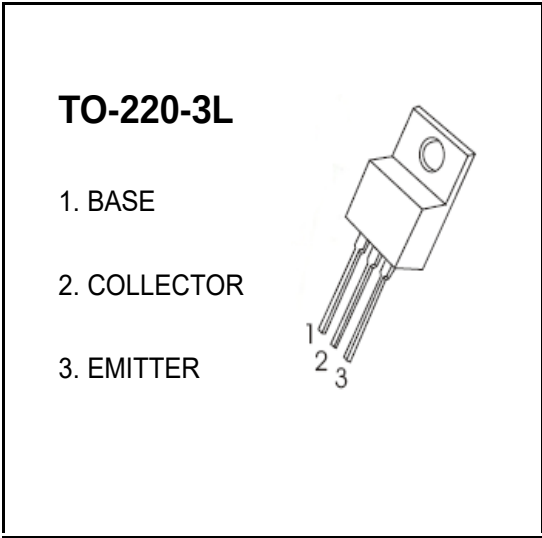
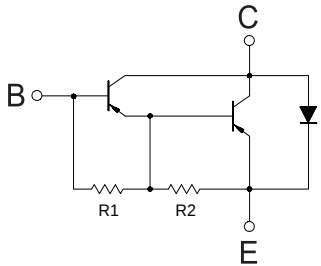
FEATURES

- High DC Current Gain
- Low Collector-Emitter Saturation Voltage

MARKING



Equivalent Circuit



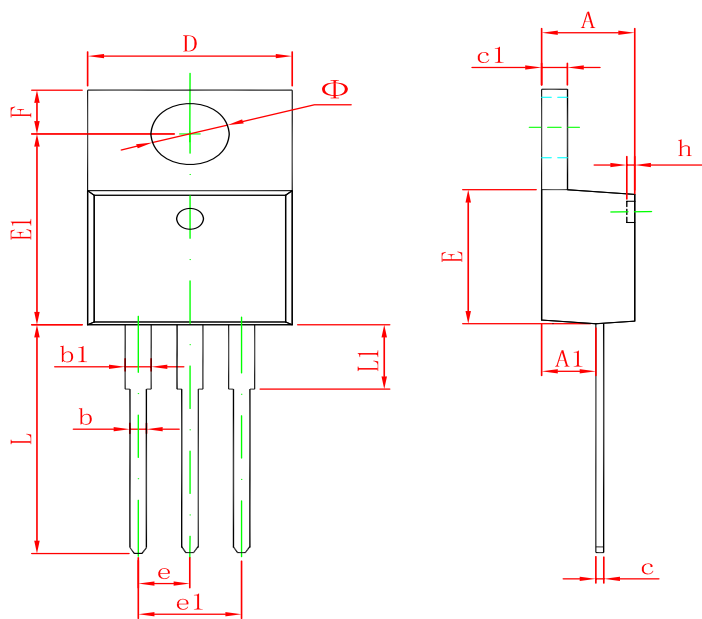
MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	-100	V
V _{CEO}	Collector-Emitter Voltage	-100	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current	-2	A
P _C	Collector Power Dissipation	2	W
R _{θJA}	Thermal Resistance From Junction To Ambient	63	°C/W
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =-1mA, I _E =0	-100			V
Collector-emitter breakdown voltage	V _{(BR)CEO} *	I _C =-30mA, I _B =0	-100			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =-5mA, I _C =0	-5			V
Collector cut-off current	I _{CBO}	V _{CB} =-100V, I _E =0			-1	mA
Collector cut-off current	I _{CEO}	V _{CE} =-50V, I _B =0			-2	mA
Emitter cut-off current	I _{EBO}	V _{EB} =-5V, I _C =0			-2	mA
DC current gain	h _{FE(1)}	V _{CE} =-4V, I _C =-1A	1000		12000	
	h _{FE(2)}	V _{CE} =-4V, I _C =-2A	500			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =-2A, I _B =-8mA			-2.5	V
Base-emitter voltage	V _{BE}	V _{CE} =-4V, I _C =-2A			-2.8	V
Collector output capacitance	C _{ob}	V _{CB} =-10V, I _E =0, f=0.1MHz			200	pF

Package Outline Dimensions (TO-220-3L)



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