

TO-220F Plastic-Encapsulate Transistors

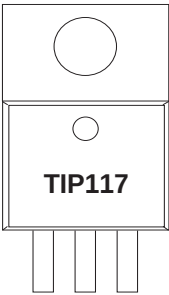
TIP117F

DARLINGTON TRANSISTOR (PNP)

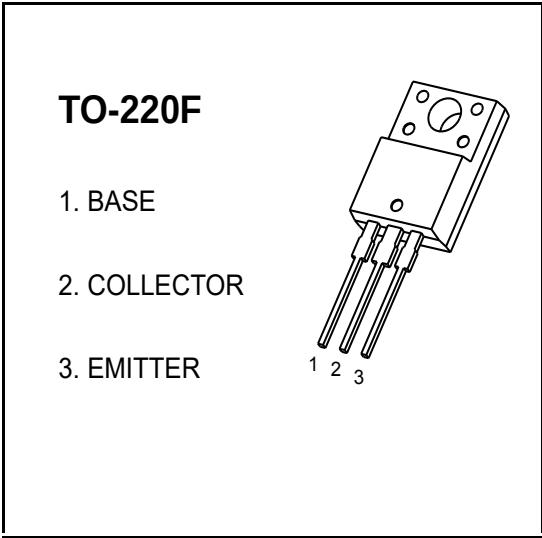
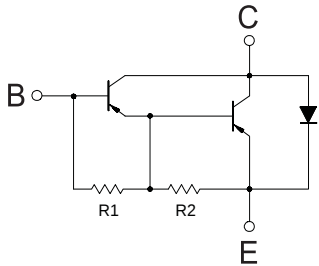
FEATURES

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

MARKING



Equivalent Circuit



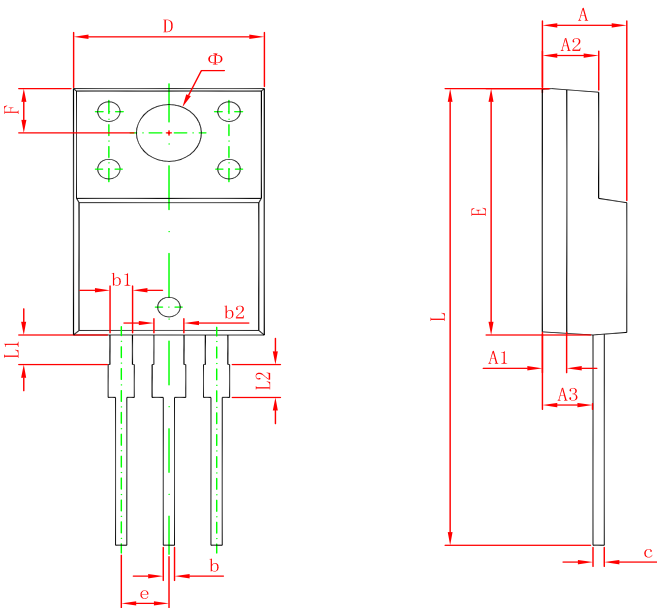
MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

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-220F)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.300	4.700	0.169	0.185
A1	1.300 REF.		0.051 REF.	
A2	2.800	3.200	0.110	0.126
A3	2.500	2.900	0.098	0.114
b	0.500	0.750	0.020	0.030
b1	1.100	1.350	0.043	0.053
b2	1.500	1.750	0.059	0.069
c	0.500	0.750	0.020	0.030
D	9.960	10.360	0.392	0.408
E	14.800	15.200	0.583	0.598
e	2.540 TYP.		0.100 TYP.	
F	2.700 REF.		0.106 REF.	
Φ	3.300	3.700	0.130	0.146
L	28.000	28.400	1.102	1.118
L1	1.700	1.900	0.067	0.075
L2	0.900	1.100	0.035	0.043