

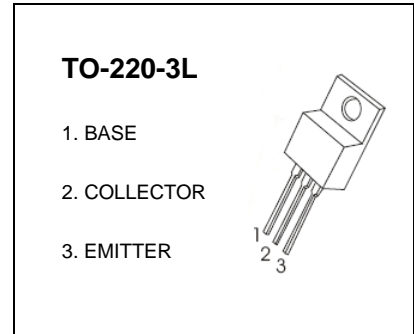


**TO-220-3L Plastic-Encapsulate Transistors**

**TIP32/32A/32B/32C TRANSISTOR (PNP)**

**FEATURES**

Medium Power Linear Switching Applications



**MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**

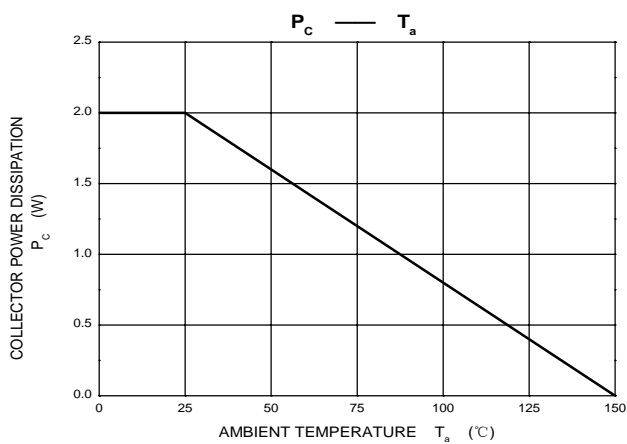
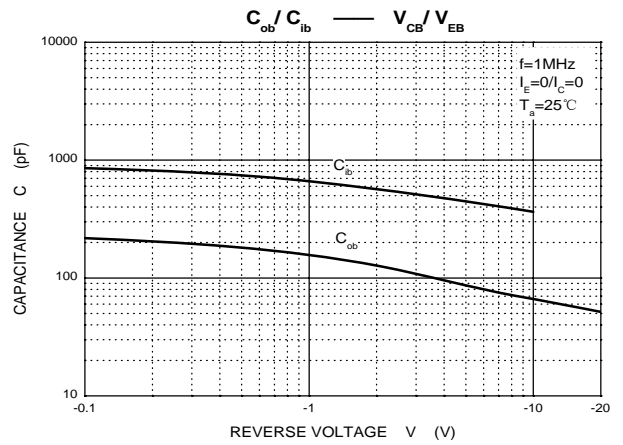
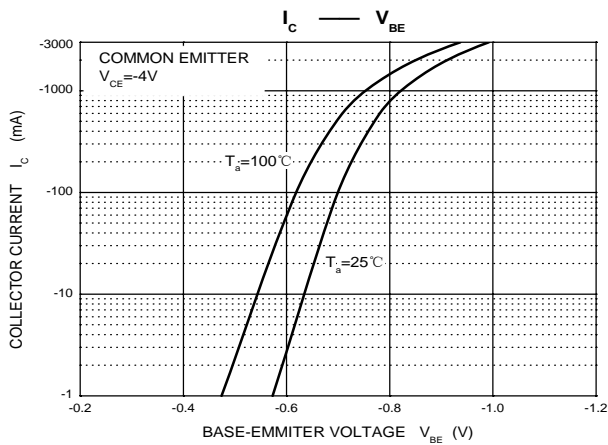
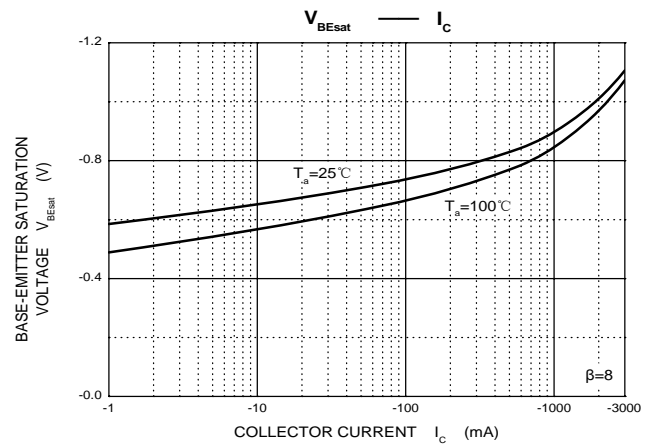
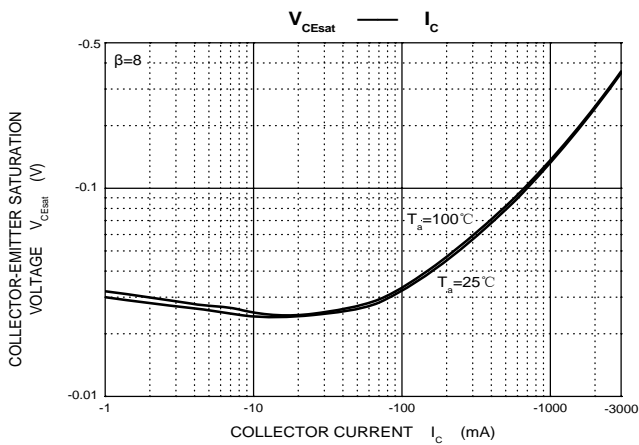
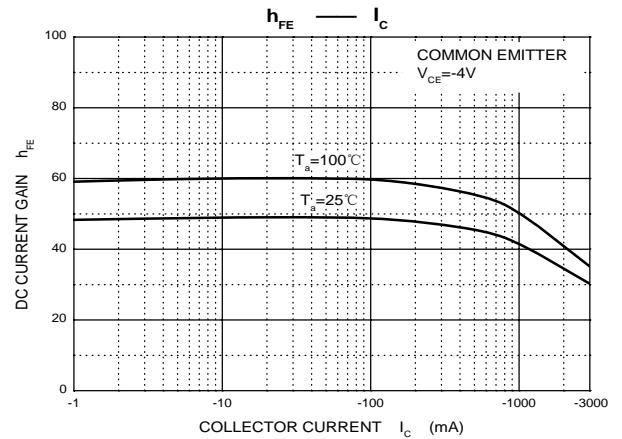
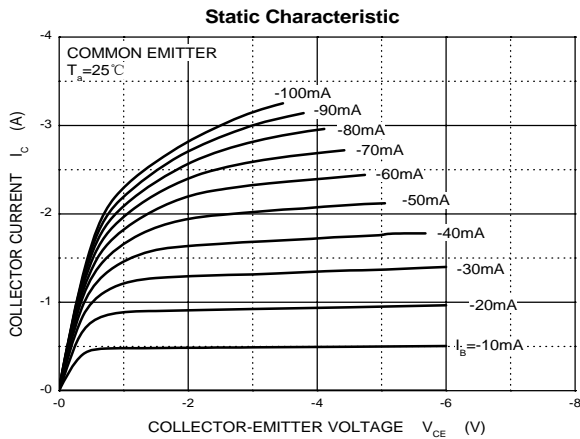
Symbol	Parameter	TIP32	TIP32A	TIP32B	TIP32C	Unit
V <sub>CBO</sub>	Collector-Base Voltage	-40	-60	-80	-100	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-40	-60	-80	-100	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5				V
I <sub>C</sub>	Collector Current	-3				A
P <sub>C</sub>	Collector Power Dissipation	2				W
R <sub>θJA</sub>	Thermal Resistance from Junction to Ambient	62.5				°C/W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55~+150				°C

**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

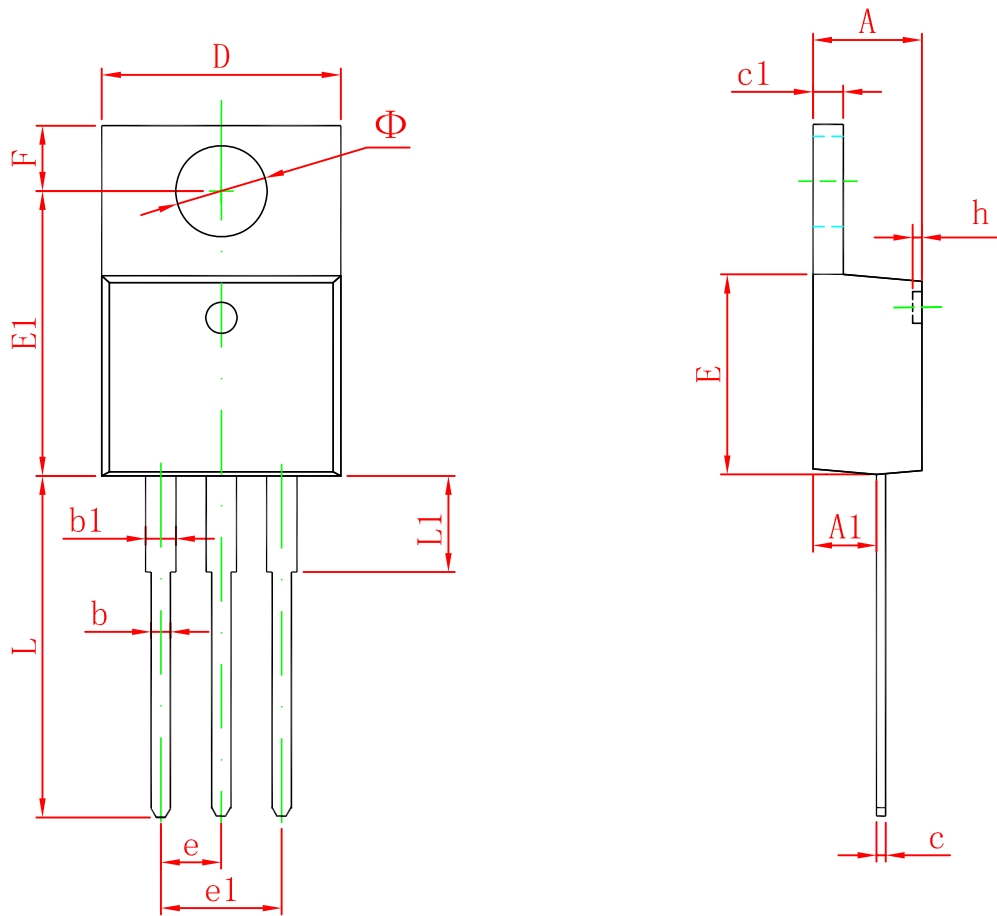
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage TIP32 TIP32A TIP32B TIP32C	V <sub>(BR)CBO</sub>	I <sub>C</sub> = -1mA, I <sub>E</sub> =0	-40 -60 -80 -100		V
Collector-emitter breakdown voltage * TIP32 TIP32A TIP32B TIP32C	V <sub>CEO(sus)</sub>	I <sub>C</sub> = -30mA, I <sub>B</sub> =0	-40 -60 -80 -100		V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -1mA, I <sub>C</sub> =0	-5		V
Collector cut-off current TIP32 TIP32A TIP32B TIP32C	I <sub>CBO</sub>	V <sub>CB</sub> =-40V, I <sub>E</sub> =0 V <sub>CB</sub> =-60V, I <sub>E</sub> =0 V <sub>CB</sub> =-80V, I <sub>E</sub> =0 V <sub>CB</sub> =-100V, I <sub>E</sub> =0		-200	μA
Collector cut-off current TIP32/32A TIP32B/32C	I <sub>CEO</sub>	V <sub>CE</sub> = -30V, I <sub>B</sub> = 0 V <sub>CE</sub> = -60V, I <sub>B</sub> = 0		-0.3	mA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-5V, I <sub>C</sub> =0		-1	mA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> = -4V, I <sub>C</sub> =-1A	25		
	h <sub>FE(2)</sub>	V <sub>CE</sub> =-4 V, I <sub>C</sub> =-3A	15	75	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-3A, I <sub>B</sub> =-0.375A		-1.2	V
Base-emitter voltage	V <sub>BE(on)</sub>	V <sub>CE</sub> =-4V, I <sub>C</sub> =-3A		-1.8	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-0.5A	3		MHz

\* Pulse Test: PW≤300μs, Duty Cycle≤2%.

# 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
$\Phi$	3.735	3.935	0.147	0.155