

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

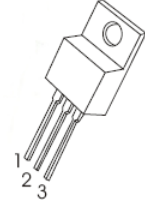
### 2SA940 TRANSISTOR (PNP)

#### FEATURES

- Wide Safe Operating Area.
- Complementary to 2SC2703

#### TO-220-3L

1. BASE
2. COLLECTOR
3. EMITTER



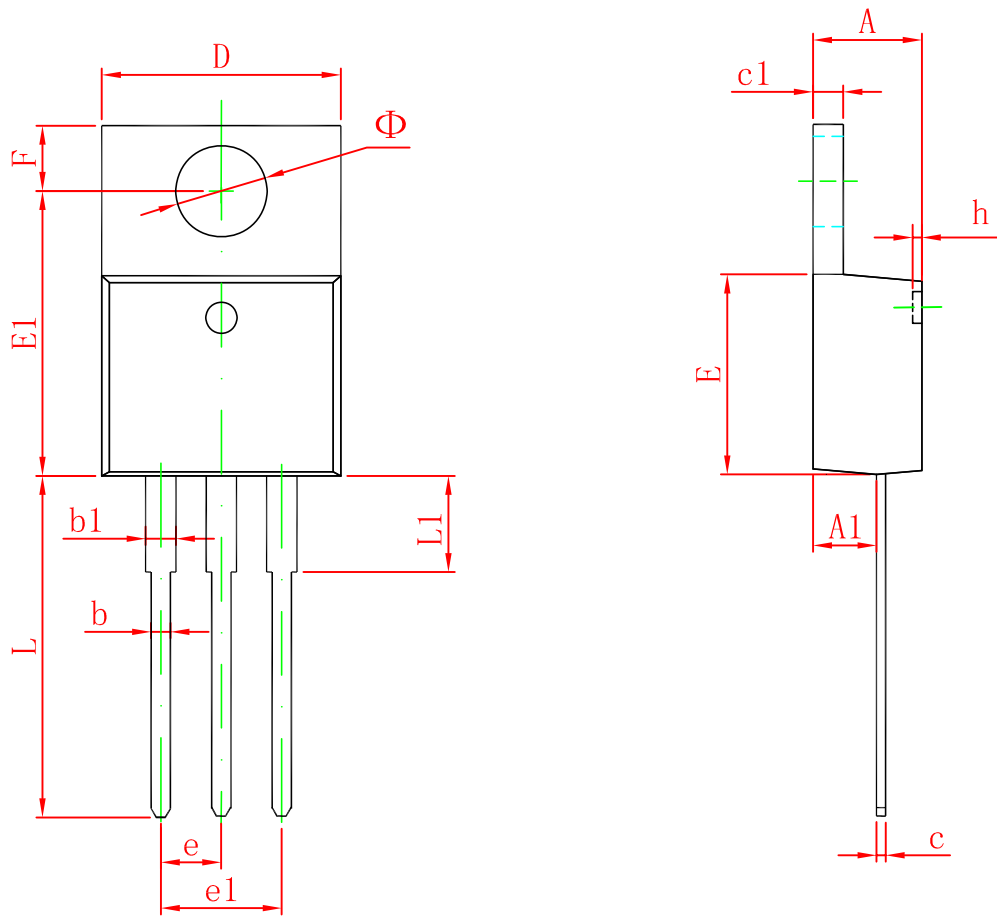
#### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	-150	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-150	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current -Continuous	-1.5	A
P <sub>C</sub>	Collector Power Dissipation	1.5	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	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = -100μA, I <sub>E</sub> = 0	-150			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = -1mA, I <sub>B</sub> = 0	-150			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -100μA, I <sub>C</sub> = 0	-5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = -120V, I <sub>E</sub> = 0			-10	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = -5V, I <sub>C</sub> = 0			-10	μA
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -0.5A	40		140	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -0.5A, I <sub>B</sub> = -50mA			-1.5	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -0.5A	-0.65		-0.85	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -0.5A		4		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1MHz		55		pF

# 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