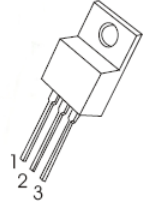


# TO-220-3L Plastic-Encapsulate Transistors

## 2SB507 TRANSISTOR (PNP)

### TO-220-3L

- 1. BASE
- 2. COLLECTOR
- 3. EMITTER



### FEATURES

- Low Collector-Emitter Saturation Voltage  
 $V_{ce(sat)} = -1V(\text{MAX}) @ I_C = -2A, I_B = -0.2A$
- DC Current Gain  $h_{FE} = 40 \sim 320 @ I_C = -1A$
- Complementray to NPN 2SD313

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

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	-60	V
$V_{CEO}$	Collector-Emitter Voltage	-60	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current -Continuous	-3	A
$P_C$	Collector Power Dissipation	1.75	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^\circ\text{C}$

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

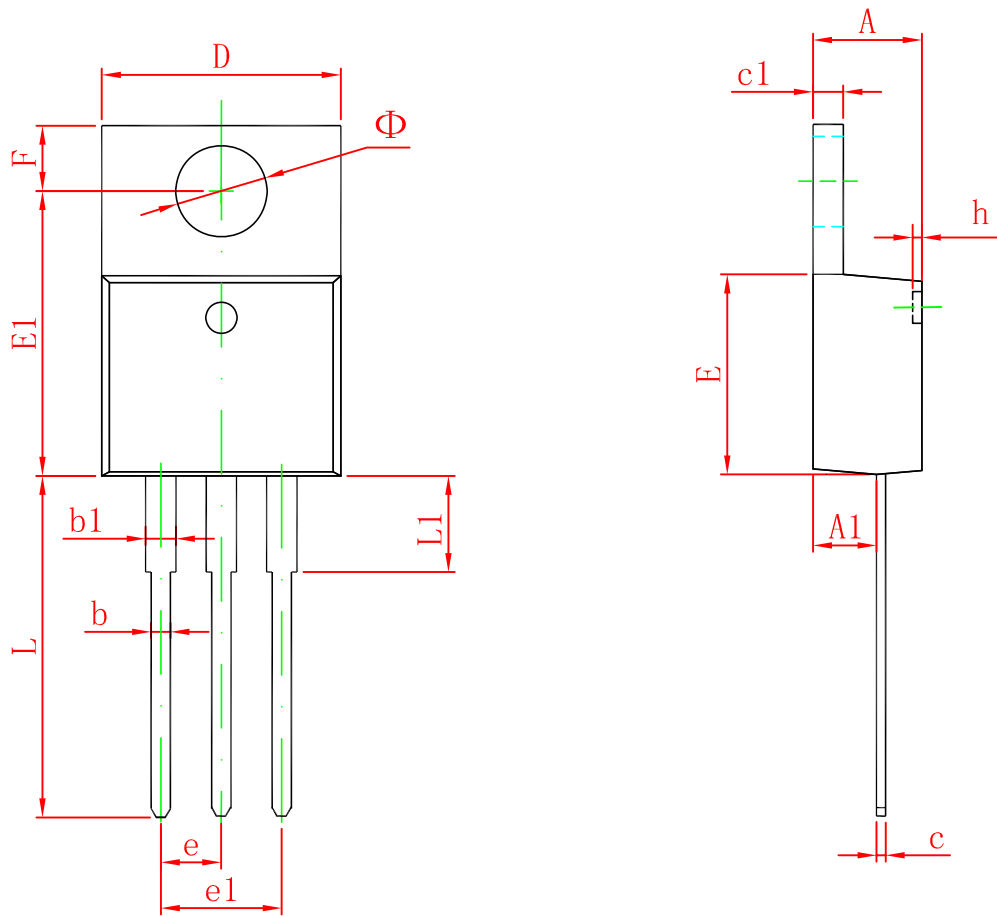
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}, I_E = 0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	-60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100\mu\text{A}, I_C = 0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -20\text{V}, I_E = 0$			-100	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE} = -60\text{V}, I_E = 0$			-5	mA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -4\text{V}, I_C = 0$			-1	mA
DC current gain <sup>(1)</sup>	$h_{FE(1)}$ <sup>(1)</sup>	$V_{CE} = -2\text{V}, I_C = -1\text{A}$	40		320	
	$h_{FE(2)}$ <sup>(1)</sup>	$V_{CE} = -2\text{V}, I_C = -0.1\text{A}$	40			
Collector-emitter saturation voltage <sup>(1)</sup>	$V_{CE(sat)}$ <sup>(1)</sup>	$I_C = -2\text{A}, I_B = -200\text{mA}$			-1	V
Base-emitter voltage <sup>(1)</sup>	$V_{BE}$ <sup>(1)</sup>	$V_{CE} = -2\text{V}, I_C = -1\text{A}$			-1.5	V
Transition frequency	$f_T$	$V_{CE} = -5\text{V}, I_C = -500\text{mA}, f = 1\text{MHz}$	5			MHz

<sup>(1)</sup>Pulse Test: Pulse Width=300 $\mu\text{s}$ , Duty Cycle $\leq$ 2.0%

### CLASSIFICATION OF $h_{FE(1)}$

Rank	C	D	E	F
Range	40-80	60-120	100-200	160-320

# 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