

Features

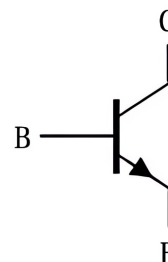
- Medium Power Linear Switching

Applications
Marking

- TIP31C



TO-220-3L top view



Schematic diagram



Pb-Free



Halogen-Free

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

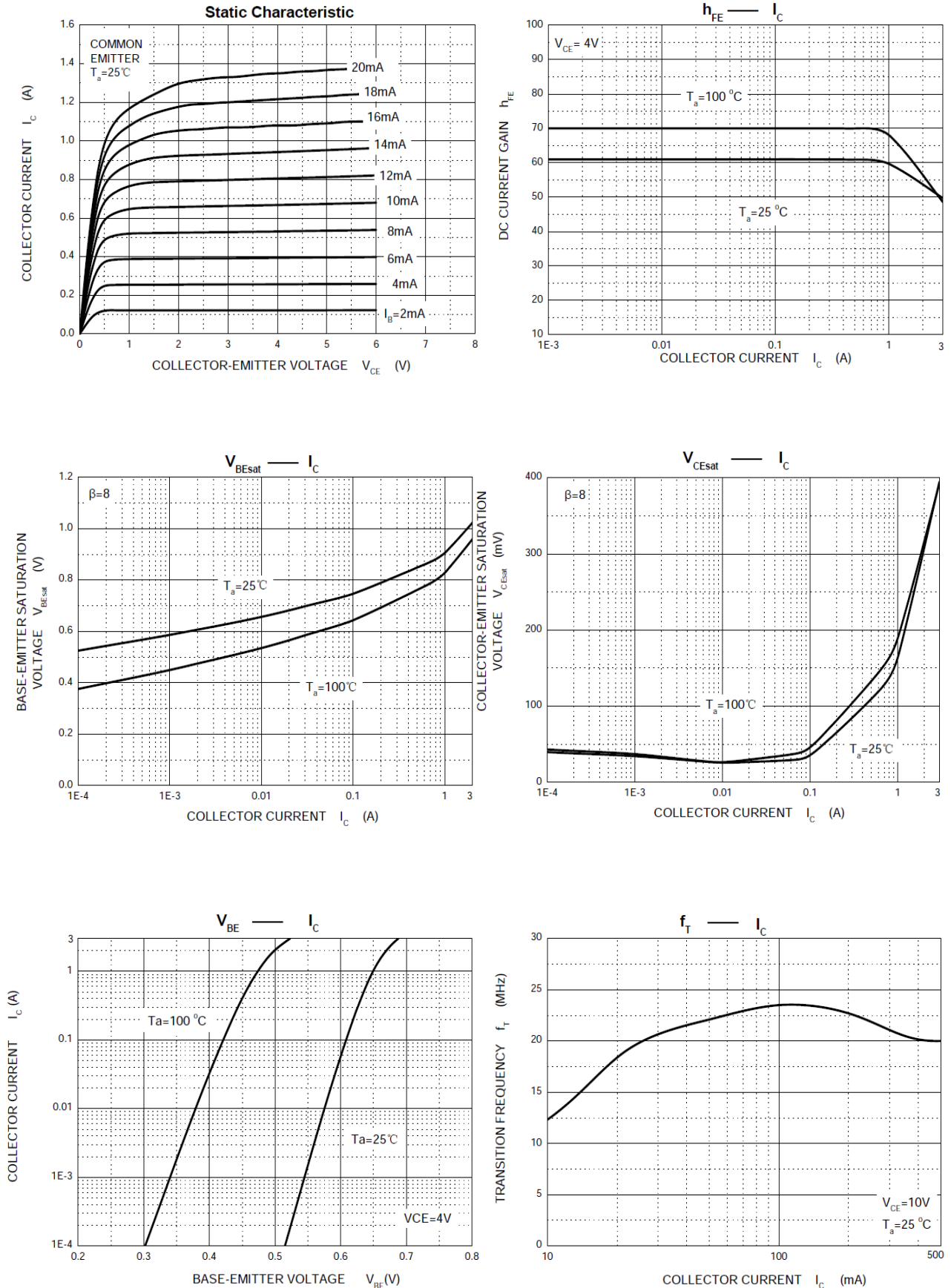
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	3	A
P_C	Collector Power Dissipation	2	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	62.5	°C/W
T_J, T_{slg}	Operation Junction and Storage Temperature Range	-55~+150	°C

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

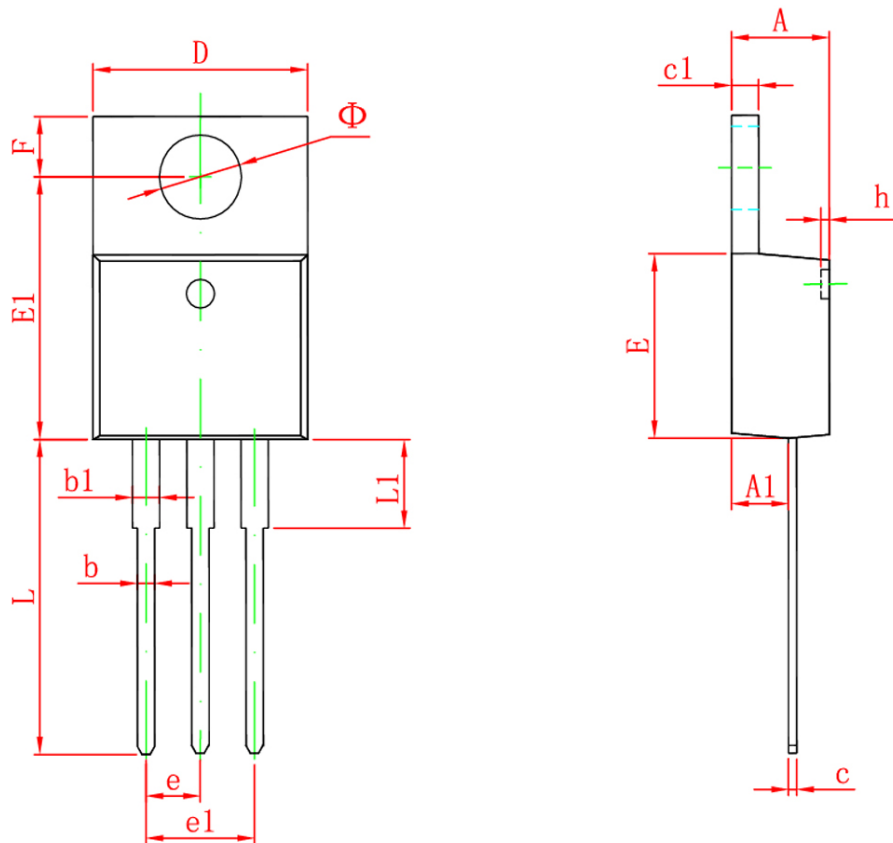
Symbol	Parameter	Condition	Min	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=1mA, I_E=0$	100	--	V
$V_{CEO(sus)}$	Collector-emitter breakdown voltage *	$I_C=30mA, I_B=0$	100	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=1mA, I_C=0$	5	--	V
I_{CBO}	Collector cut-off current	$V_{CB}=100V, I_E=0$	--	200	μA
I_{CEO}	Collector cut-off current	$V_{CE}=60V, I_B=0$	--	0.3	mA
I_{EBO}	Emitter cut-off current	$V_{EB}=5V, I_C=0$	--	1	mA
$h_{FE(1)}$	DC current gain	$V_{CE}=4V, I_C=1A$	25	--	
$h_{FE(2)}$		$V_{CE}=4V, I_C=3A$	15	75	
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=3A, I_B=0.375A$	--	1.2	V
$V_{BE(ON)}$	Base-emitter voltage	$V_{CE}=4V, I_C=3A$	--	1.8	V
f_T	Transition frequency	$V_{CE}=10V, I_C=0.5A$	3	--	MHZ

 * Pulse Test: $PW \leq 300\mu s$, Duty Cycles $\leq 2\%$.

Typical Operating Characteristics



TO-220-3L Package information



Symbol	Dimensions in Millimeters(mm)		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	2.540TYP		0.100TYP	
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