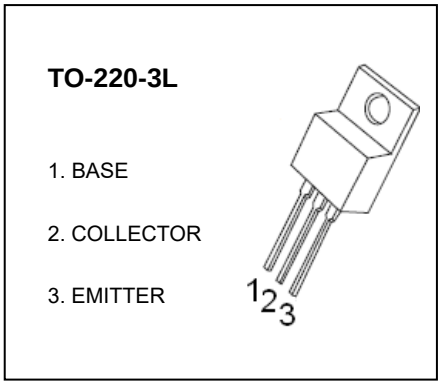
TO-220-3L Plastic-Encapsulate Transistors

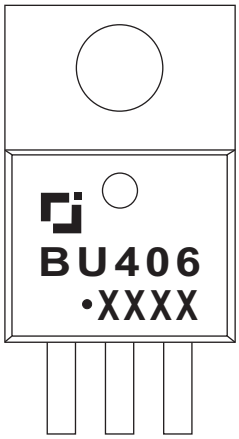
BU406 TRANSISTOR (NPN)



FEATURES

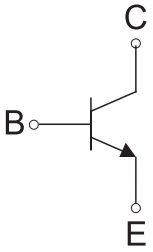
- High Voltage
- Fast Switching Speed: t_f = 750 ns (max)
- Low Saturation Voltage: $V_{CE(sat)}$ = 1 V (max) @ 5 A
- Pb−Free Packages are Available*

MARKING



BU406=Device code
Solid dot=Green moldinn compound device,
if none,the normal device
XXXX=Code

Equivalent Circuit



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	400	V
V_{CEO}	Collector-Emitter Voltage	200	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	7	A
P_C	Collector Power Dissipation	2	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	62.5	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

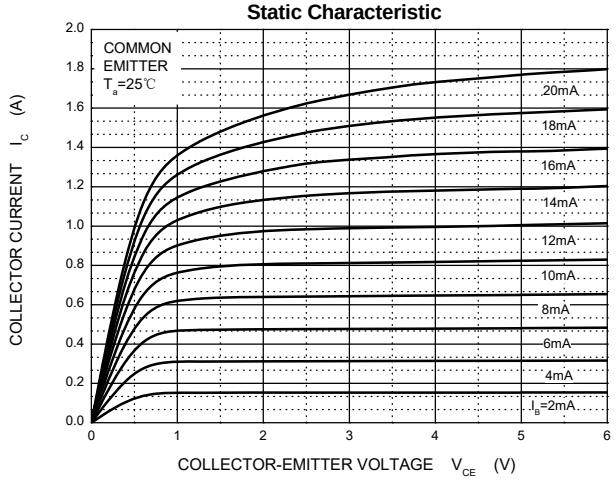
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltag	$V_{(BR)CBO}$	I_C=100uA, I_E=0	400			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	I_C=100mA,I_B=0	200			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100uA,I_C=0	6			V
Collector cut-off current	I_{CES}	V_{CB}=400V,I_E=0			5	mA
Collector cut-off current	I_{CES}	V_{CB}=250V,I_E=0			1	mA
Collector cut-off current	I_{CBO}	V_{CB}=300V,I_E=0			5	μA
Emitter cut-off current	I_{EBO}	V_{EB}=6V,I_C=0			1	mA
DC current gain	h_{FE}	V_{CE}=5V, I_C=1A	50		100	
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	I_C=5A,I_B=500mA			1	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$	I_C=5A,I_B=500mA			1.2	V
Collector output capacitance	C_{ob}	V_{CB}=10V,I_E=0, f=1MHz		80		pF
Transition frequency	f_T	V_{CE}=5V,I_C=0.2A,f=10MHz	10			MHz

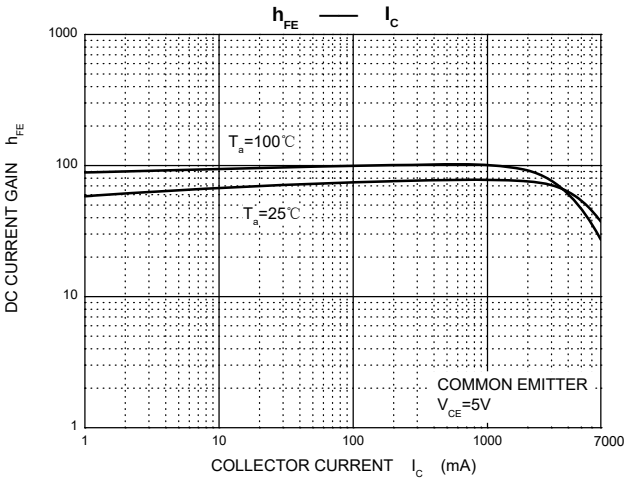
*Pulse test: pulse width ≤300μs, duty cycle≤ 2.0%.

Typical Characteristics

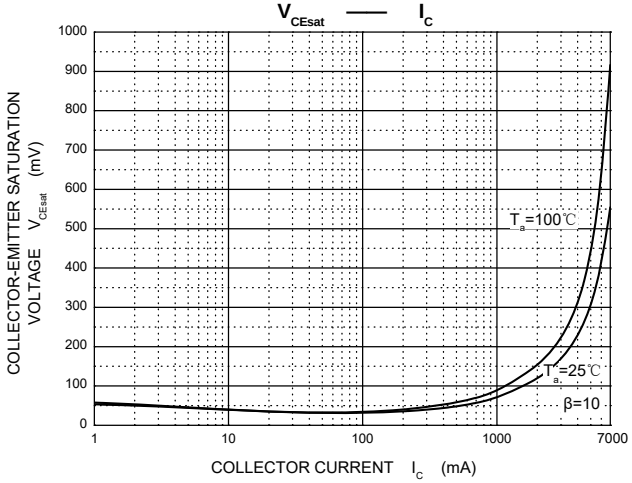
Static Characteristic



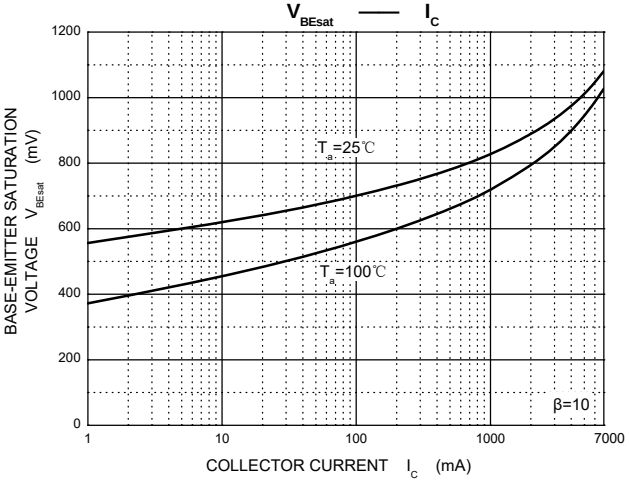
h_{FE} —— I_C



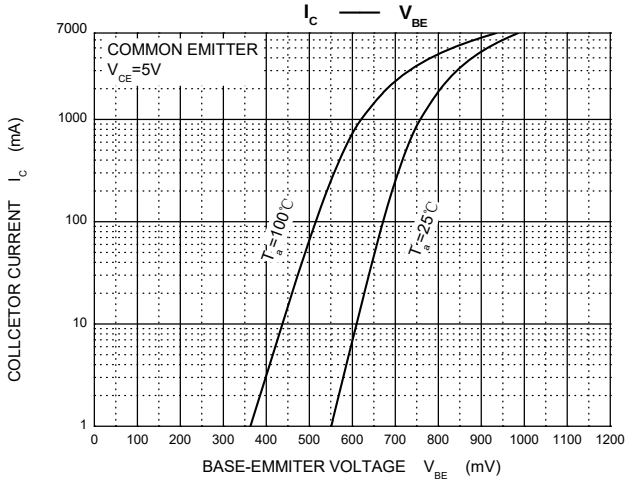
V_{CEsat} —— I_C



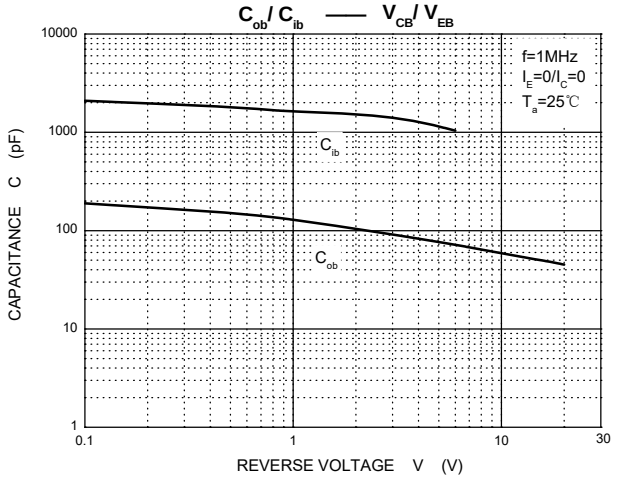
V_{BEsat} —— I_C



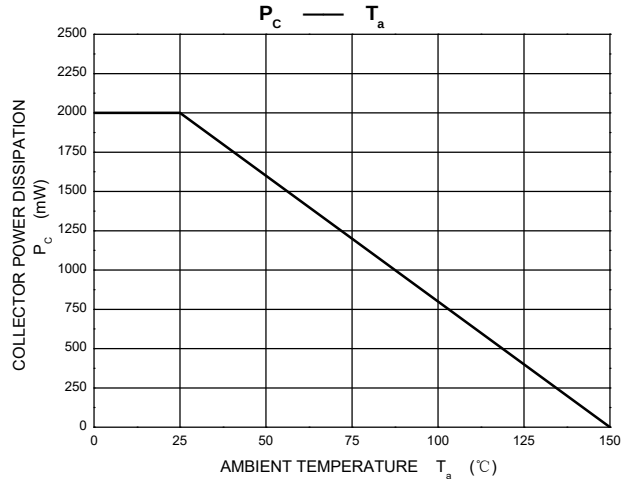
I_C —— V_{BE}



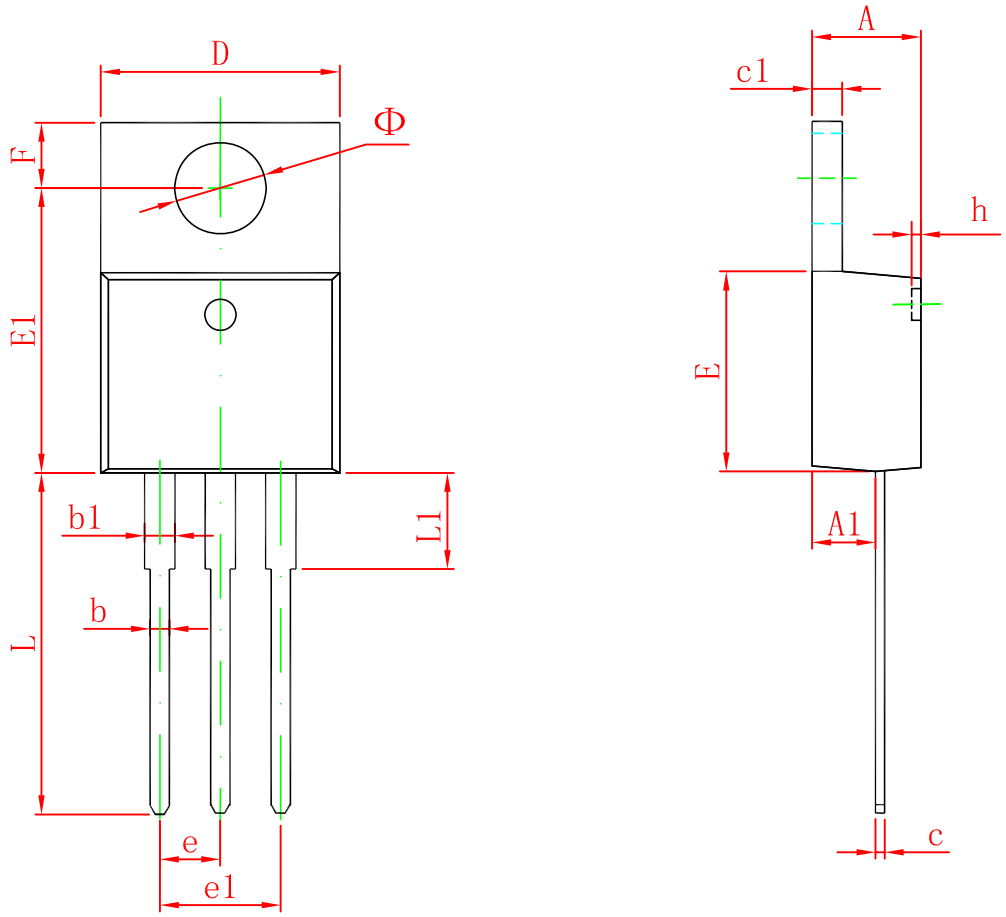
C_{ob} / C_{ib} —— V_{CB} / V_{EB}



P_C —— T_a



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
Φ	3.735	3.935	0.147	0.155