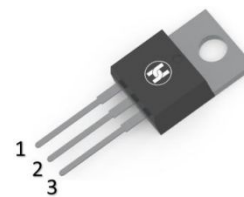


BIPOLAR TRANSISTOR (NPN)
FEATURES

- Medium Power Linear Switching Applications



1.BASE 2.COLLECTOR 3.EMITTER

TO-220
MECHANICAL DATA

- Case: TO-220
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 2.30 grams (approximate)

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	3	A
Collector Power Dissipation	P_C	2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

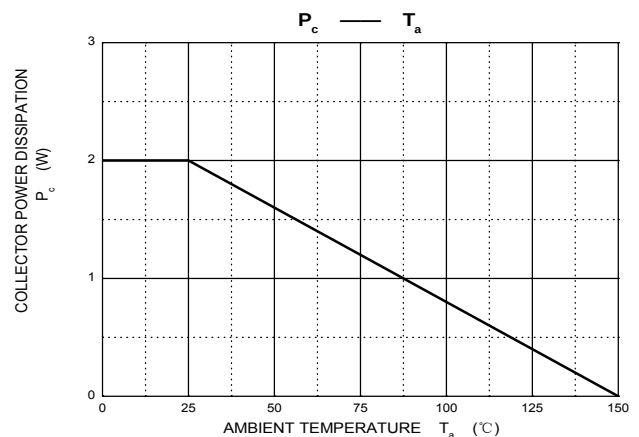
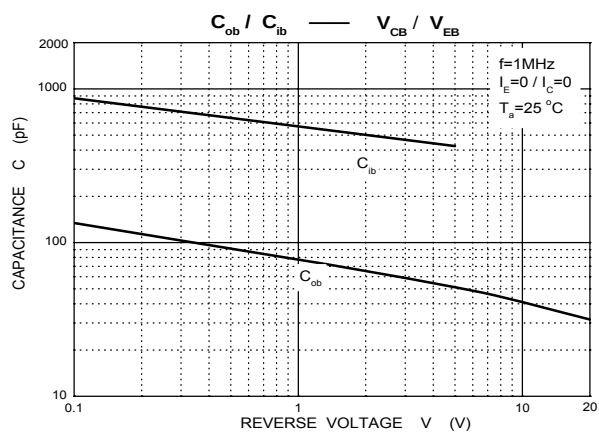
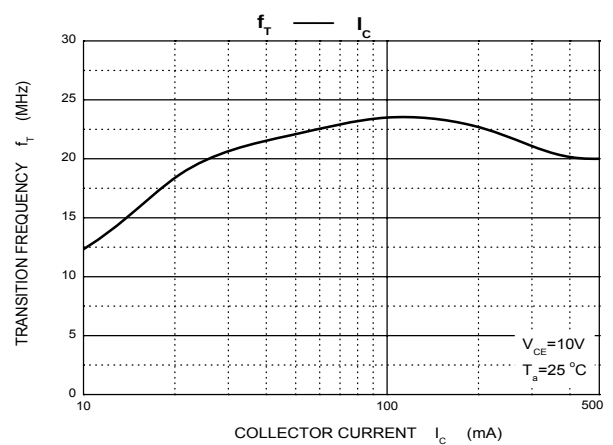
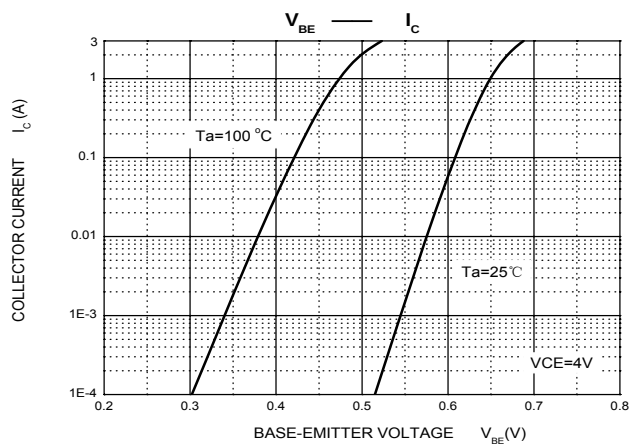
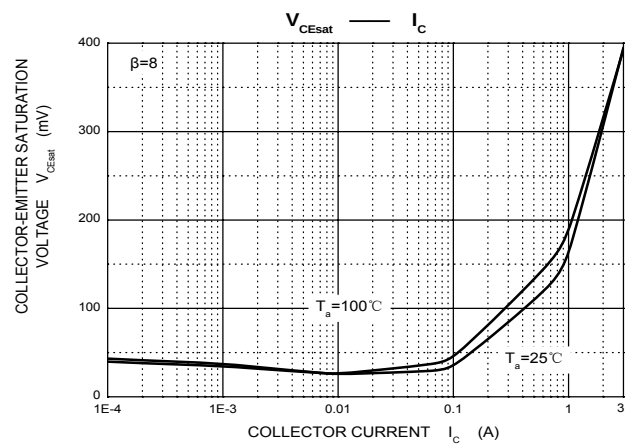
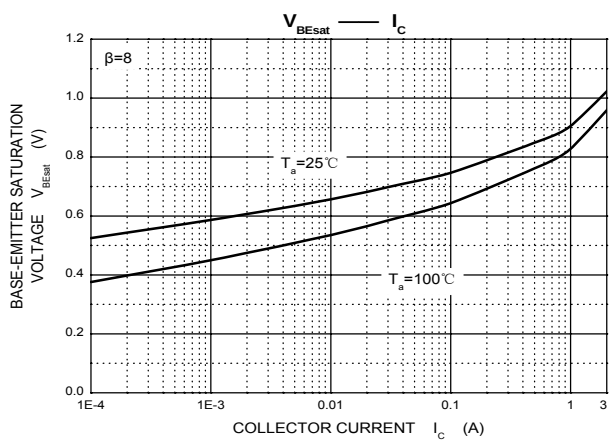
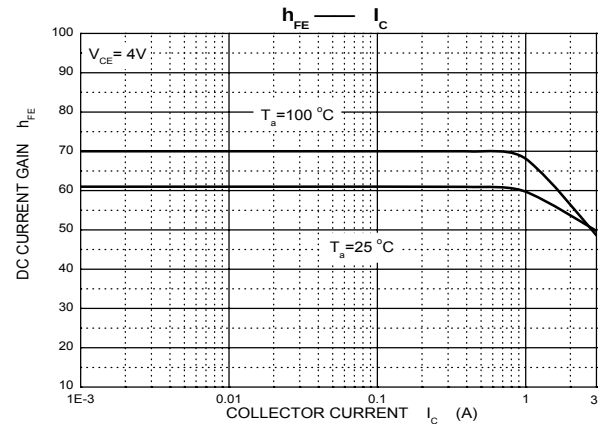
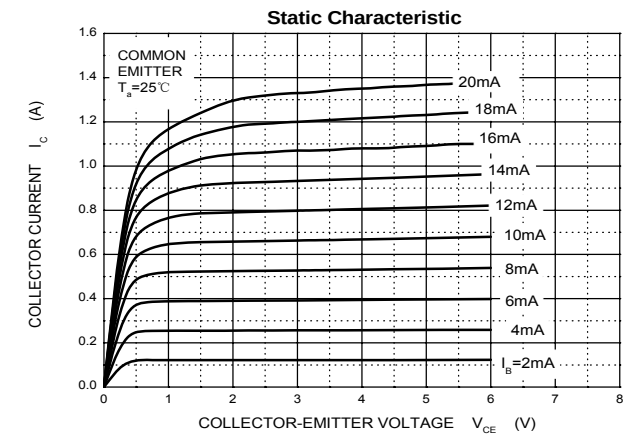
ELECTRICAL CHARACTERISTICS ($T_A = 25^{\circ}\text{C}$ unless otherwise specified)

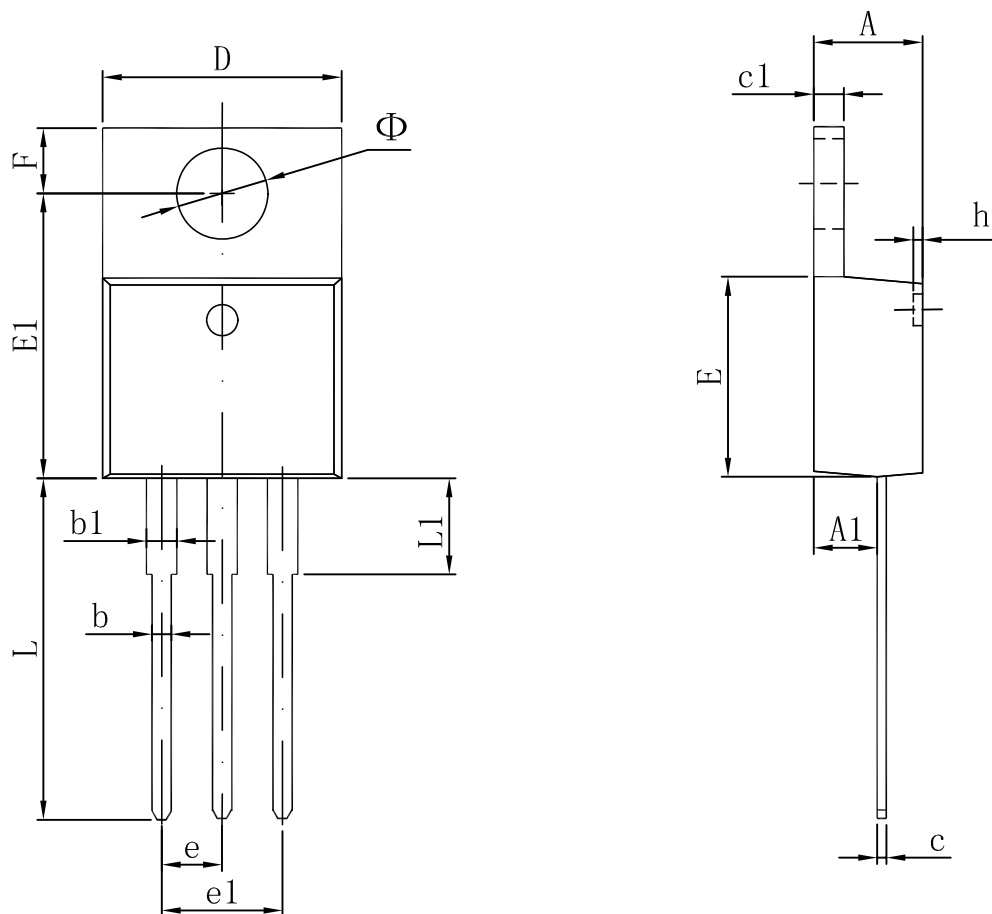
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Collector-base breakdown voltage	$V_{(BR)CBO}^*$	100			V	$I_C=1\text{mA}, I_E=0$
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	100			V	$I_C=30\text{mA}, I_B=0$
Emitter-base breakdown voltage	$V_{(BR)EBO}$	5			V	$I_E=1\text{mA}, I_C=0$
Collector cut-off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

*pulse test: $t_p \leq 300\mu\text{S}$, $\delta \leq 0.02$

BIPOLAR TRANSISTOR (NPN)

Typical Characteristics



BIPOLAR TRANSISTOR (NPN)
TO-220 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