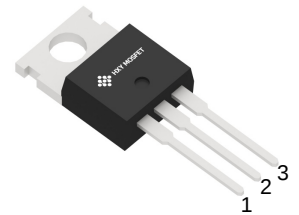




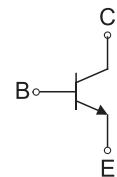
Features

- General Purpose and Switching Applications



1.BASE
2.COLLECTOR
3.EMITTER

TO-220C



Maximum Ratings (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	70	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	10	A
P_C	Collector Power Dissipation	2	W
T_j, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

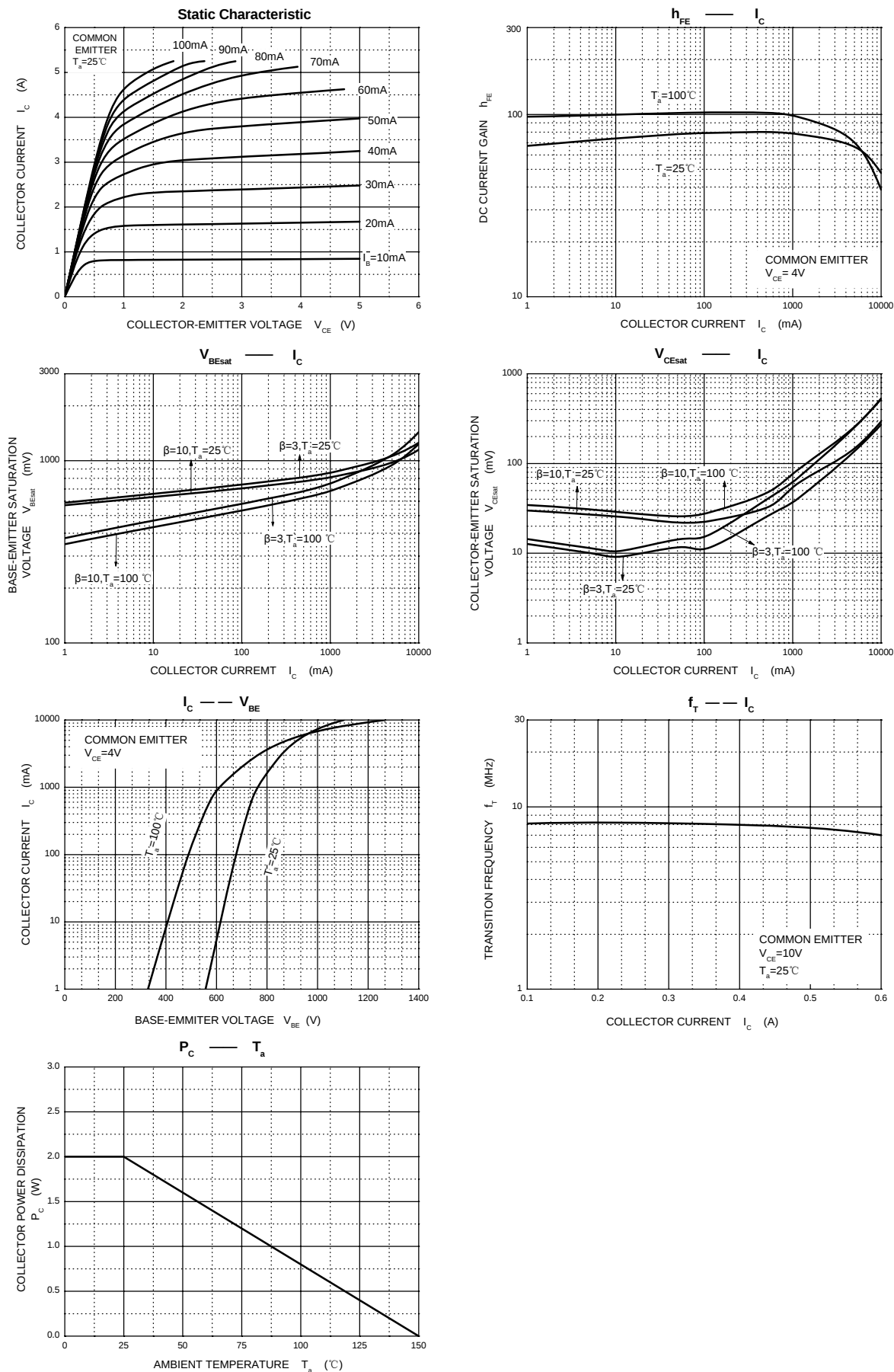
Electrical Characteristics (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	70			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=200mA, I_B=0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=70V, I_E=0$			1	mA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			5	mA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=4V, I_C=4A$	20		100	
	$h_{FE(2)}^*$	$V_{CE}=4V, I_C=10A$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=4A, I_B=0.4A$			1.1	V
	$V_{CE(sat)}^*$	$I_C=10A, I_B=3.3A$			8	V
Base-emitter voltage	V_{BE}^*	$V_{CE}=4V, I_C=4A$			1.8	V
Transition frequency	f_T	$V_{CE}=10V, I_C=0.5A$	2			MHz

Note:*Pulse test: $t_p \leq 300\mu s$, $\delta \leq 0.02$.

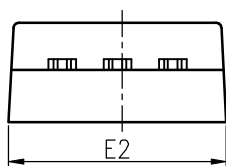
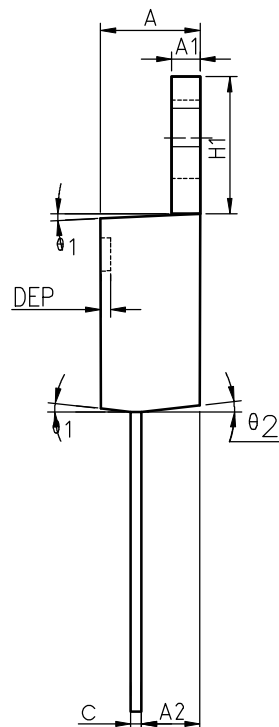
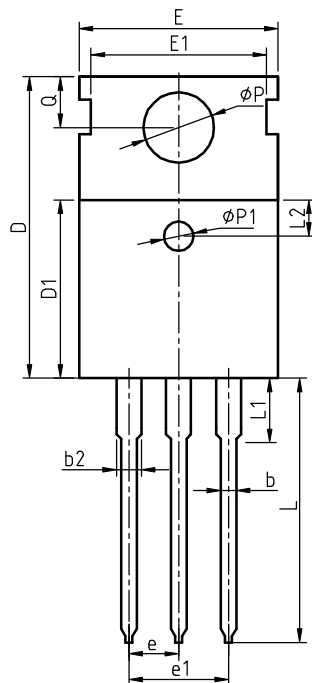


Typical Characteristics





Package Information TO-220C



COMMON DIMENSIONS

SYMBOL	MIN	NOM	MAX	MIN	NOM	MAX
A	4.40	4.57	4.70	0.173	0.180	0.185
A1	1.27	1.30	1.33	0.050	0.051	0.052
A2	2.35	2.40	2.50	0.093	0.094	0.098
b	0.77	0.80	0.90	0.030	0.031	0.035
b2	1.17	1.27	1.36	0.046	0.050	0.054
c	0.48	0.50	0.56	0.019	0.020	0.022
D	15.40	15.60	15.80	0.606	0.614	0.622
D1	9.00	9.10	9.20	0.354	0.358	0.362
DEP	0.05	0.10	0.20	0.002	0.004	0.008
E	9.80	10.00	10.20	0.386	0.394	0.402
E1	-	8.70	-	-	0.343	-
E2	9.80	10.00	10.20	0.386	0.394	0.402
e		2.54	BSC		0.100	BSC
e1		5.08	BSC		0.200	BSC
H1	6.40	6.50	6.60	0.252	0.256	0.260
L	12.75	13.50	13.65	0.502	0.531	0.537
L1	-	3.10	3.30	-	0.122	0.130
L2		2.50	REF		0.098	REF
P	3.50	3.60	3.63	0.138	0.142	0.143
P1	3.50	3.60	3.63	0.138	0.142	0.143
Q	2.73	2.80	2.87	0.107	0.110	0.113
θ 1	5°	7°	9°	5°	7°	9°
θ 2	1°	3°	5°	1°	3°	5°
θ 3	1°	3°	5°	1°	3°	5°



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