



Features

- Collector Current: $I_C=0.6A$
- Power Dissipation of 625mw

Package Marking and Ordering Information

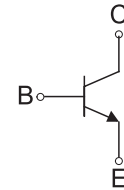
Product ID	Pack	Marking	Qty(PCS)
2N4400	TO-92	2N2222A	1000

1. EMITTER

2. BASE

3. COLLECTOR

TO-92



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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	0.6	A
P_D	Collector Power Dissipation	625	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	200	°C /W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

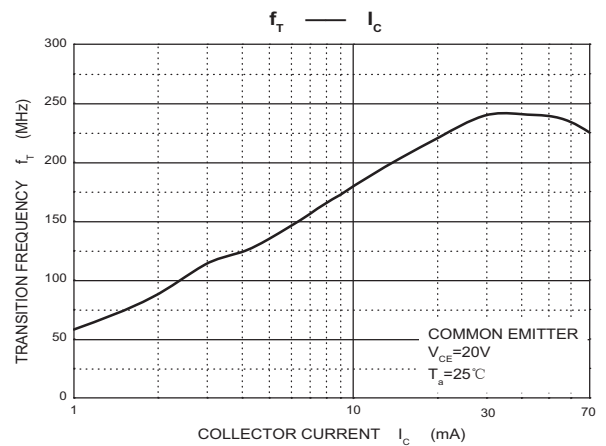
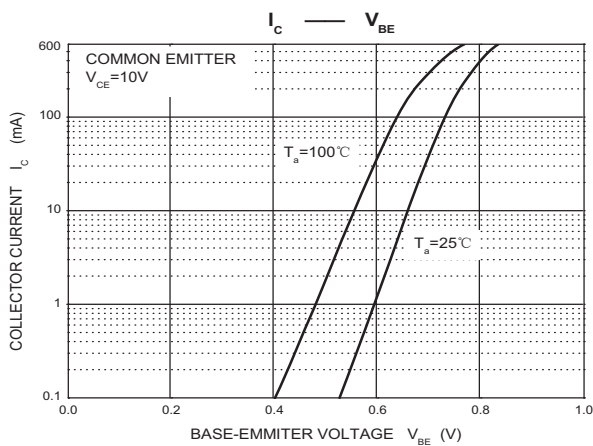
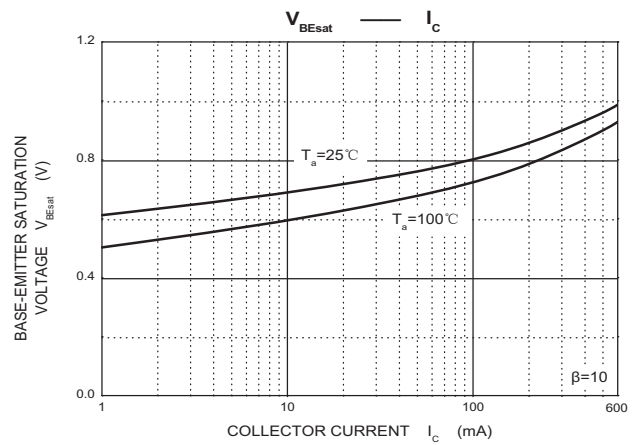
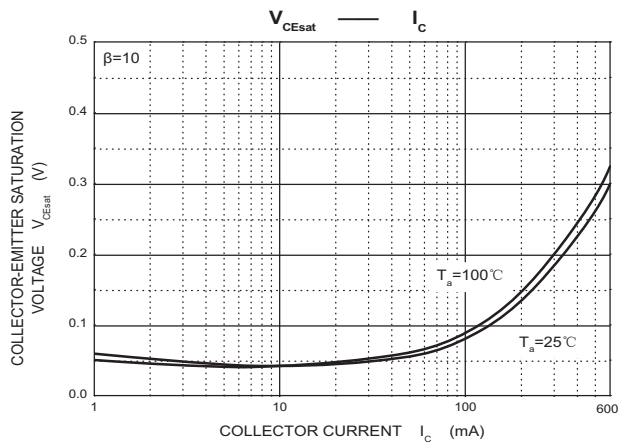
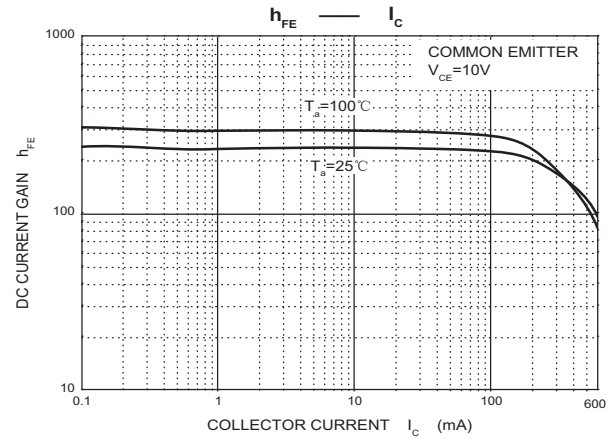
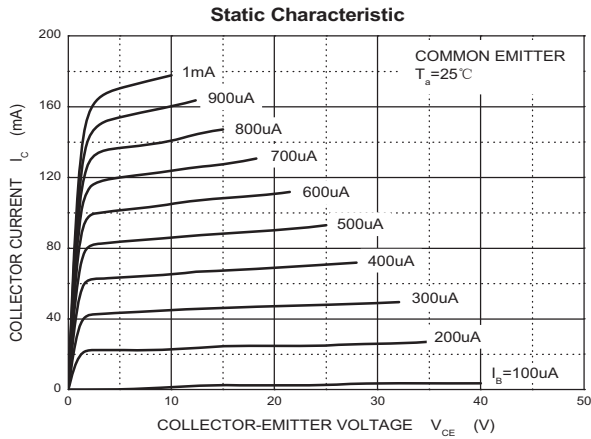
Electrical Characteristics (Ta=25°C unless otherwise specified)

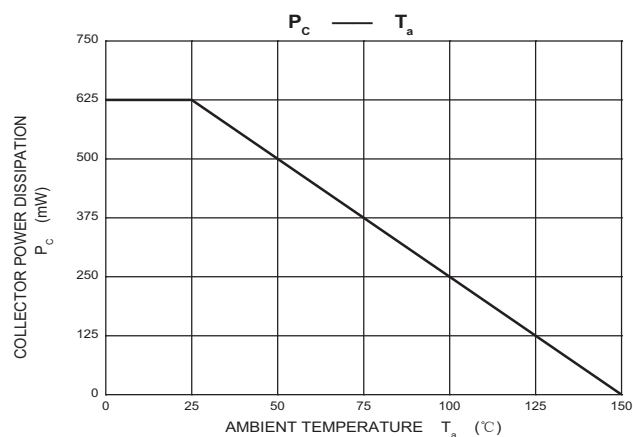
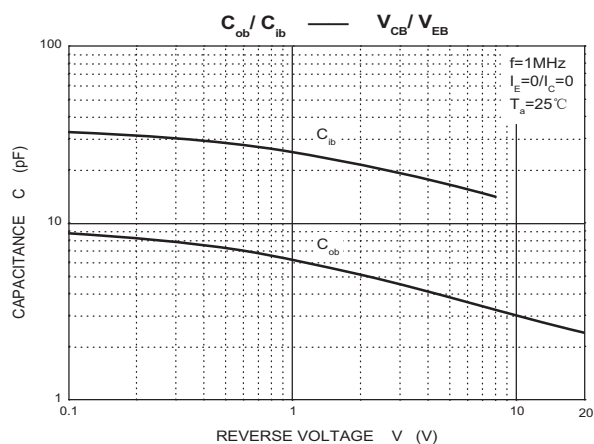
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	75		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6		V
Collector cut-off current	I_{CBO}	$V_{CB}=60V, I_E=0$		10	nA
Collector cut-off current	I_{CEX}	$V_{CE}=60V, V_{EB(Off)}=3V$		10	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=3V, I_C=0$		100	nA
DC current gain	$h_{FE(1)}$	$V_{CE}=10V, I_C=150mA$	100	300	
	$h_{FE(2)}$	$V_{CE}=10V, I_C=0.1mA$	40		
	$h_{FE(3)}$	$V_{CE}=10V, I_C=500mA$	42		
Collector-emitter saturation voltage	$V_{CE(sat)(1)}$	$I_C=500mA, I_B=50mA$		0.6	V
	$V_{CE(sat)(2)}$	$I_C=150mA, I_B=15mA$		0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500mA, I_B=50mA$		1.2	V
Delay time	t_d	$V_{CC}=30V, V_{EB(Off)}=-0.5V,$		10	nS
Rise time	t_r	$I_C=150mA, I_{B1}=15mA$		25	nS
Storage time	t_s	$V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA$		225	nS
Fall time	t_f			60	nS
Transition frequency	f_T	$V_{CE}=20V, I_C=20mA, f=100MHz$	300		MHz

* pulse test

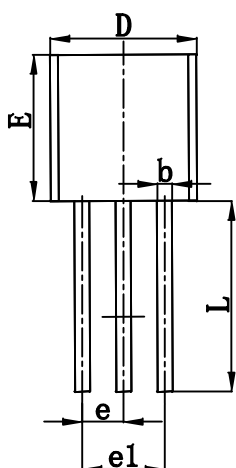
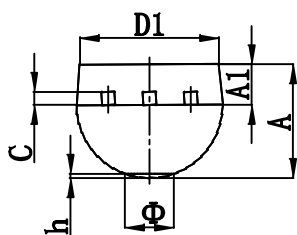


Typical Characteristics





TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015



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