



Features

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

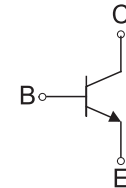
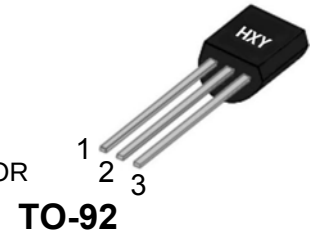
Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
KN4401	TO-92	2N2222A	1000

1. EMITTER

2. BASE

3. COLLECTOR



Maximum Ratings ($T_a = 25^\circ C$ 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	$^\circ C / W$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55 ~ +150	$^\circ C$

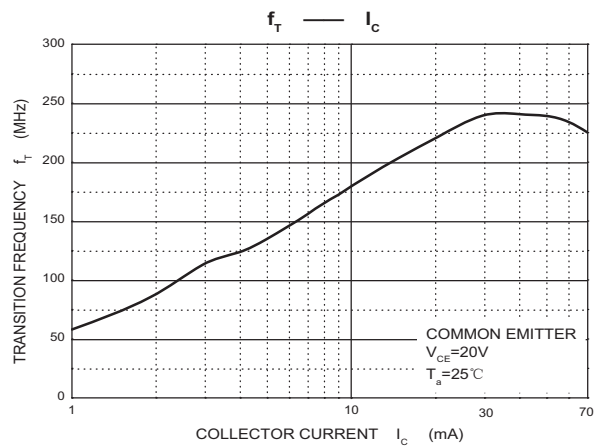
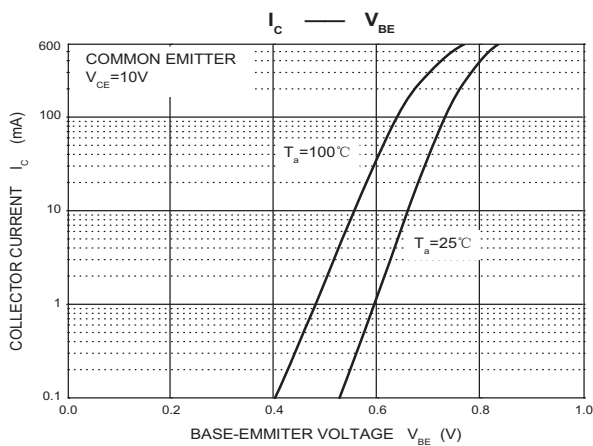
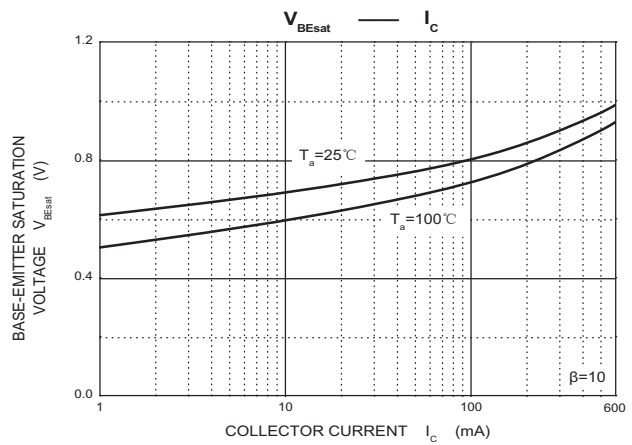
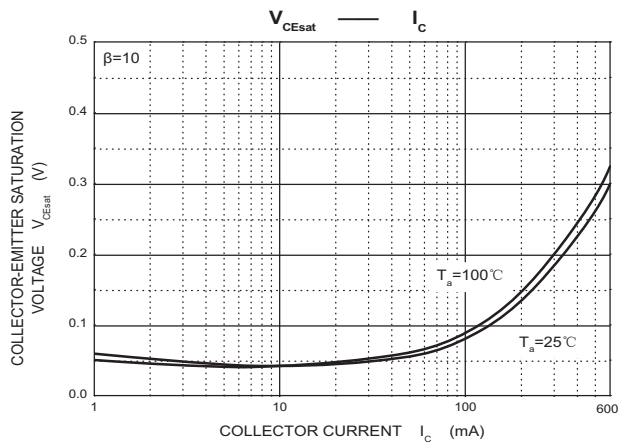
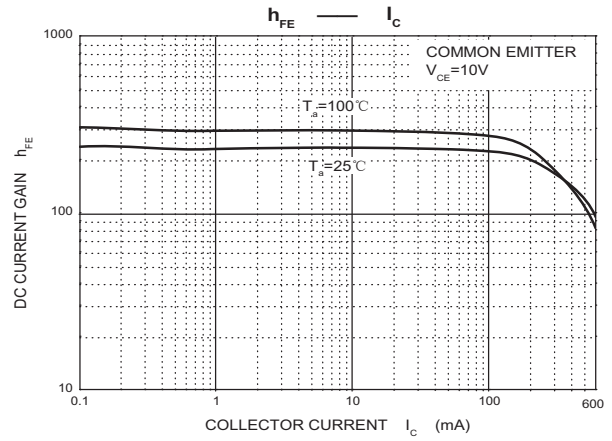
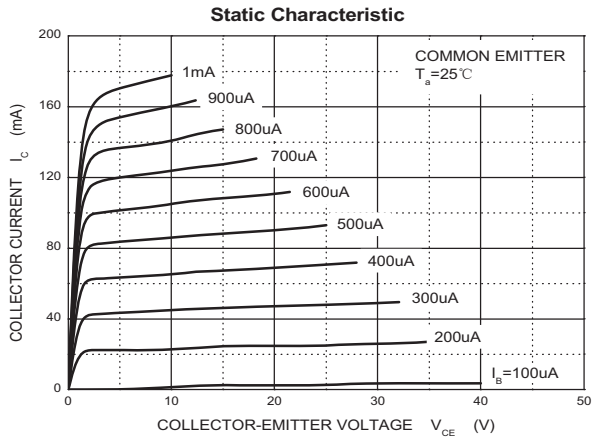
Electrical Characteristics ($T_a = 25^\circ C$ unless otherwise specified)

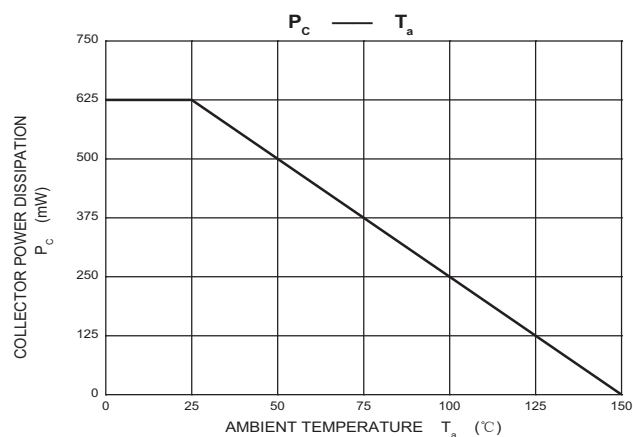
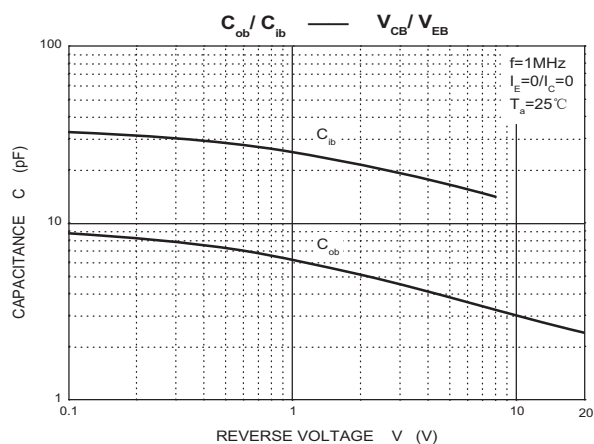
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	75		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	6		V
Collector cut-off current	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	$V_{CC} = 30V, V_{EB(Off)} = -0.5V,$ $I_C = 150mA, I_{B1} = 15mA$		10	nS
Rise time	t_r			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

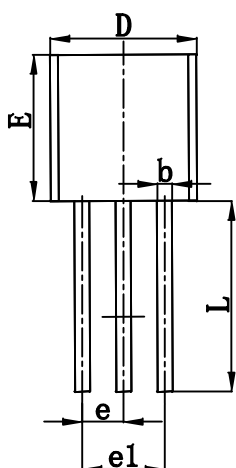
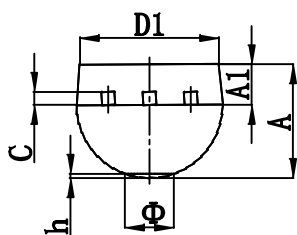


Typical Characteristics





TO-92(TO-92-3) 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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