



TO-92 Plastic-Encapsulate Transistors

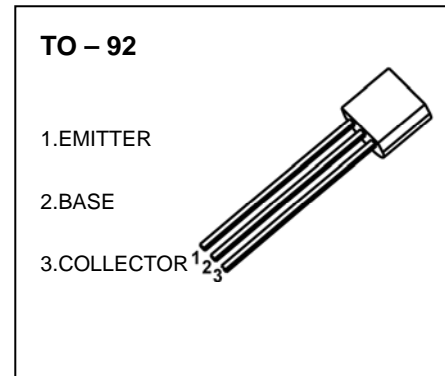
3DK2222A TRANSISTOR(NPN)

FEATURES

- Epitaxial planar die construction

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
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	600	mA
P _C	Collector Power Dissipation	625	mW
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C



ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 10uA , 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 = 10uA, I _C =0	6		V
Collector cut-off current	I _{CBO}	V _{CB} = 60 V , I _E =0		10	nA
Collector cut-off current	I _{CEX}	V _{CE} = 60 V , V _{EB(OFF)} =3V		10	nA
Emitter cut-off current	I _{EBO}	V _{EB} = 3 V , I _C =0		10	nA
DC current gain	h _{FE(1)}	V _{CE} =10 V, I _C = 150mA	100	300	
	h _{FE(2)}	V _{CE} =10 V, I _C = 0.1mA	40		
	h _{FE(3)}	V _{CE} =10 V, 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, I _C =150mA		10	ns
Rise time	t _r	V _{BE(off)} =-0.5V, I _{B1} =15mA		25	
Storage time	t _s	V _{CC} =30V, I _C =150mA		225	
Fall time	t _f	I _{B1} =- I _{B2} = 15mA		60	
Transition frequency	f _T	V _{CE} =20 V, I _C =20mA, f =100MHz	300		MHz

* pulse test

CLASSIFICATION OF h_{FE(1)}

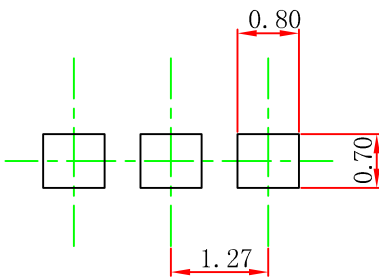
Rank	L	H
Range	100-200	200-300

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

TO-92 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

TO-92 PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter								
A1	A	T	P	P0	P2	F1	F2	W
4.5	4.5	3.5	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0 MAX.	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250