

TO-92 Plastic-Encapsulate Transistors

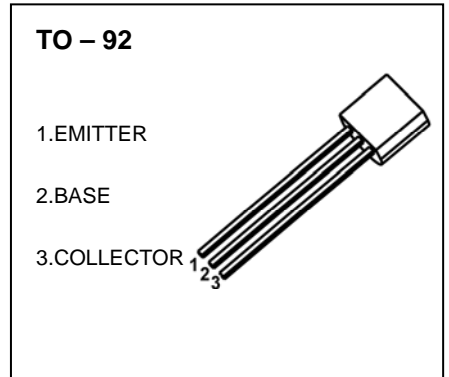
MPS2222 TRANSISTOR (NPN)

FEATURES

- General Purpose Switching and Amplification

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

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	60	V
V _{CEO}	Collector-Emitter Voltage	30	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current -Continuous	0.6	A
P _C	Collector Power Dissipation	625	mW
R _{θJA}	Thermal Resistance From Junction To Ambient	200	°C/W
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	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 0.01mA, I _E =0	60			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =10mA, I _B =0	30			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =0.01mA, I _C =0	5			V
Collector cut-off current	I _{CBO}	V _{CB} =50V, I _E =0			0.01	μA
Collector cut-off current	I _{CEX}	V _{CE} =60V, V _{EB(off)} =3V			0.01	μA
Emitter cut-off current	I _{EBO}	V _{EB} =3V, I _C =0			0.1	μA
DC current gain	h _{FE(1)} *	V _{CE} =10V, I _C =150mA	100		300	
	h _{FE(2)}	V _{CE} =10V, I _C =0.1mA	35			
	h _{FE(3)}	V _{CE} =10V, I _C =500mA	30			
Collector-emitter saturation voltage	V _{CE(sat)} *	I _C =500mA, I _B =50mA			1	V
Base-emitter saturation voltage	V _{BE (sat)} *	I _C =500mA, I _B =50mA			2	V
Collector output capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=100MHz			8	pF
Transition frequency	f _T	V _{CE} =20V, I _C = 20mA, f=100MHz	250			MHz
Delay time	t _d	V _{CC} =30V, V _{BE(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			225	nS
Fall time	t _f	I _{B1} =I _{B2} =15mA			60	nS

*Pulse test: pulse width ≤300μs, duty cycle ≤ 2.0%.

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