

TO-92 Plastic-Encapsulate Transistors

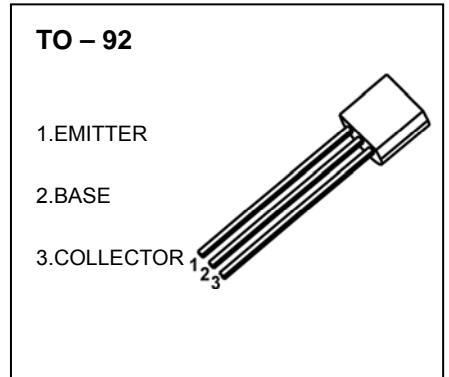
MPS2222 TRANSISTOR (NPN)

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

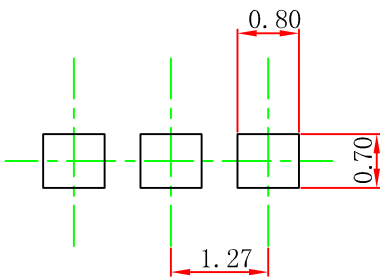
*Pulse test: pulse width ≤300μs, duty cycle ≤ 2.0%.

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.

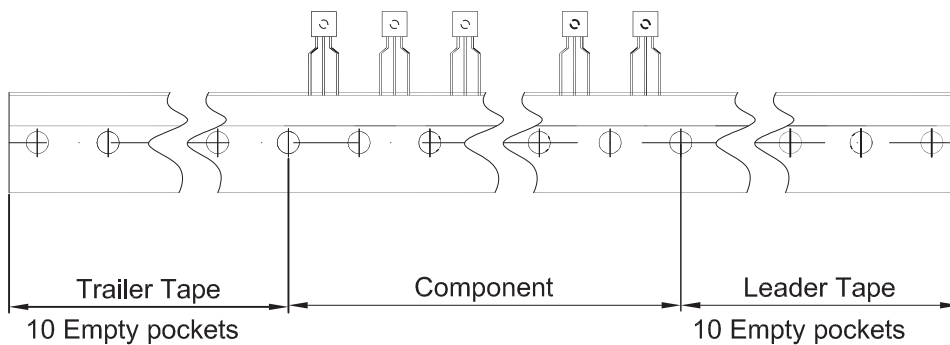
NOTICE

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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