

Transistor

PNP Silicon

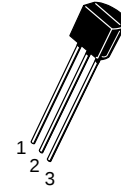
MPS4250

MAXIMUM RATINGS

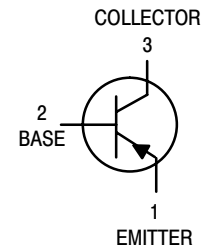
Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	–40	Vdc
Collector–Emitter Voltage	V_{CES}	–40	Vdc
Collector–Base Voltage	V_{CBO}	–40	Vdc
Emitter–Base Voltage	V_{EBO}	–5.0	Vdc
Collector Current — Continuous	I_C	—	mA dc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	625 5.0	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5 12	mW mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	$^\circ\text{C/W}$



CASE 29–04, STYLE 1
TO–92 (TO–226AA)



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ($I_C = -5.0\text{ mA}$)	$V_{(BR)CES}$	–40	—	Vdc
Collector–Emitter Sustaining Voltage ⁽¹⁾ ($I_C = -5.0$)	$V_{(BR)CEO(sus)}$	–40	—	Vdc
Collector–Base Breakdown Voltage ($I_C = -10\text{ }\mu\text{A}$)	$V_{(BR)CBO}$	–40	—	Vdc
Emitter–Base Breakdown Voltage ($I_E = -10\text{ }\mu\text{A}$)	$V_{(BR)EBO}$	–5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = -50\text{ V}$) ($V_{CB} = -40\text{ V}$, $T_A = 65^\circ\text{C}$)	I_{CBO}	— —	–10 –3.0	nA μA
Emitter Cutoff Current ($V_{EB} = -3.0\text{ V}$)	I_{EBO}	—	–20	nA

1. Pulse Test: Pulse Width = 300 μs ; Duty Cycle = 2.0%.

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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Continued)

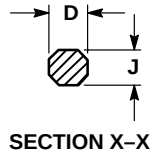
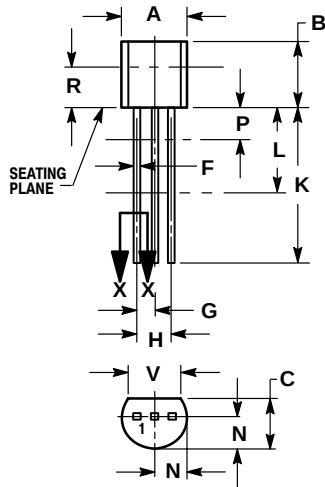
Characteristic	Symbol	Min	Max	Unit
ON CHARACTERISTICS				
DC Current Gain ($I_C = -1.0\text{ mA}$, $V_{CE} = -5.0\text{ V}$) ($I_C = -10\text{ mA}$, $V_{CE} = -5.0\text{ V}$)	h_{FE}	250 250	— —	—
Collector–Emitter Saturation Voltage ⁽¹⁾ ($I_C = -10\text{ mA}$, $I_B = -0.5\text{ mA}$)	$V_{CE(sat)}$	—	–0.25	Vdc
Base–Emitter Saturation Voltage ⁽¹⁾ ($I_C = -10\text{ mA}$, $I_B = -0.5\text{ mA}$)	$V_{BE(sat)}$	—	–0.9	Vdc
SMALL–SIGNAL CHARACTERISTICS				
Output Capacitance ($V_{CB} = -5.0\text{ V}$, $f = 1.0\text{ MHz}$)	C_{obo}	—	6.0	pF
Input Capacitance ($V_{EB} = -0.5\text{ V}$, $f = 1.0\text{ MHz}$)	C_{ibo}	—	16	pF
Small–Signal Current Gain ($I_C = -1.0\text{ mA}$, $V_{CE} = -5.0\text{ V}$, $f = 1.0\text{ kHz}$) ($I_C = -0.5\text{ mA}$, $V_{CE} = -5.0\text{ V}$, $f = 20\text{ MHz}$)	h_{fe}	250 2.0	800 —	—
Noise Figure ($I_C = -20\text{ }\mu\text{A}$, $V_{CE} = -5.0\text{ V}$, $R_S = 10\text{ k}\Omega$, $f = 1.0\text{ kHz}$, $P_{BW} = 150\text{ Hz}$) ($I_C = -250\text{ }\mu\text{A}$, $V_{CE} = -5.0\text{ V}$, $R_S = 1.0\text{ k}\Omega$, $f = 1.0\text{ kHz}$, $P_{BW} = 150\text{ Hz}$)	NF	— —	2.0 2.0	dB

1. Pulse Test: Pulse Width = 300 μs ; Duty Cycle = 2.0%.

MPS4250

PACKAGE DIMENSIONS

CASE 029-04
(TO-226AA)
ISSUE AD



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. DIMENSION F APPLIES BETWEEN P AND L. DIMENSION D AND J APPLY BETWEEN L AND K MINIMUM. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.022	0.41	0.55
F	0.016	0.019	0.41	0.48
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	----	12.70	----
L	0.250	----	6.35	----
N	0.080	0.105	2.04	2.66
P	----	0.100	----	2.54
R	0.115	----	2.93	----
V	0.135	----	3.43	----

STYLE 1:

- PIN 1. EMITTER
- BASE
- COLLECTOR

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