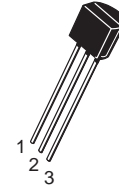
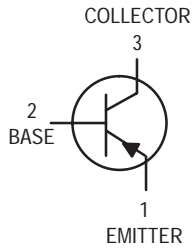


Transistor

PNP Silicon

MPS4250



CASE 29-04, STYLE 1
TO-92 (TO-226AA)

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	—	mAdc
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	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	$^\circ\text{C}/\text{W}$

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 ($I_C = -10 \mu\text{A}$)	$V_{(BR)CBO}$	–40	—	Vdc
Emitter–Base Breakdown Voltage ($I_E = -10 \mu\text{A}$)	$V_{(BR)EBO}$	–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%.

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%.