

Audio Transistor

NPN Silicon

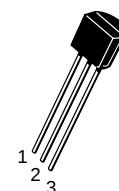
MPS6560

MAXIMUM RATINGS

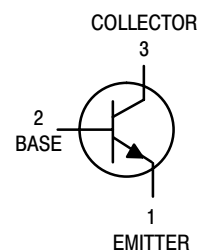
Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	25	Vdc
Collector–Base Voltage	V_{CBO}	25	Vdc
Emitter–Base Voltage	V_{EBO}	5.0	Vdc
Collector Current — Continuous	I_C	500	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	625 5.0	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5 12	Watts 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	$R_{\theta JA}^{(1)}$	200	$^\circ\text{C}/\text{mW}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	$^\circ\text{C}/\text{mW}$



CASE 29-11, 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 ⁽²⁾ ($I_C = 10$ mAdc, $I_B = 0$)	$V_{(BR)CEO}$	25	—	Vdc
Collector–Base Breakdown Voltage ($I_C = 100$ μ Adc, $I_E = 0$)	$V_{(BR)CBO}$	25	—	Vdc
Emitter–Base Breakdown Voltage ($I_E = 100$ μ Adc, $I_C = 0$)	$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current ($V_{CE} = 25$ Vdc, $I_B = 0$)	I_{CES}	—	100	nAdc
Collector Cutoff Current ($V_{CB} = 20$ Vdc, $I_E = 0$)	I_{CBO}	—	100	nAdc
Emitter Cutoff Current ($V_{EB(off)} = 4.0$ Vdc, $I_C = 0$)	I_{EBO}	—	100	nAdc

- $R_{\theta JA}$ is measured with the device soldered into a typical printed circuit board.
- Pulse Test: Pulse Width ≤ 300 μ s; Duty Cycle $\leq 2.0\%$.

MPS6560

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

Characteristic	Symbol	Min	Max	Unit
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ON CHARACTERISTICS⁽²⁾

DC Current Gain ($I_C = 10\text{ mA}$, $V_{CE} = 1.0\text{ Vdc}$) ($I_C = 100\text{ mA}$, $V_{CE} = 1.0\text{ Vdc}$) ($I_C = 500\text{ mA}$, $V_{CE} = 1.0\text{ Vdc}$)	h_{FE}	35 50 50	— — 200	—
Collector–Emitter Saturation Voltage ($I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$)	$V_{CE(sat)}$	—	0.5	Vdc
Base–Emitter On Voltage ($I_C = 500\text{ mA}$, $V_{CE} = 1.0\text{ Vdc}$)	$V_{BE(on)}$	—	1.2	Vdc

SMALL–SIGNAL CHARACTERISTICS

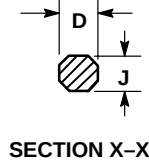
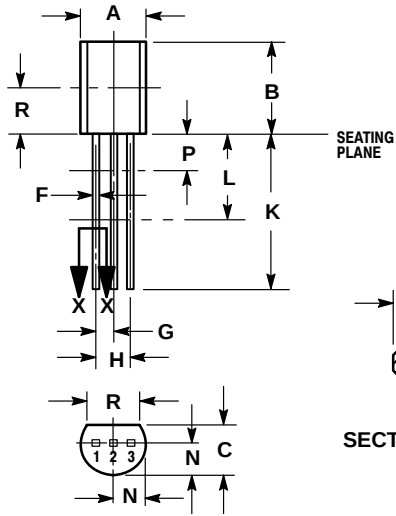
Current–Gain — Bandwidth Product ($I_C = 10\text{ mA}$, $V_{CE} = 10\text{ Vdc}$, $f = 20\text{ MHz}$)	f_T	60	—	MHz
Output Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{obo}	—	30	pF

2. Pulse Test: Pulse Width $\leq 300\text{ }\mu\text{s}$; Duty Cycle $\leq 2.0\%$.

MPS6560

PACKAGE DIMENSIONS

CASE 029-11
(TO-226AA)
ISSUE AD



STYLE 1:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

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. DIMENSIONS 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	4.44	5.21
B	0.290	0.310	7.37	7.87
C	0.125	0.165	3.18	4.19
D	0.018	0.021	0.457	0.533
F	0.016	0.019	0.407	0.482
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.018	0.024	0.46	0.61
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	0.135	---	3.43	---

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