MPS6560

Audio Transistor

NPN Silicon

ON Semiconductor®

http://onsemi.com

Features

- Pb−Free Package is Available*

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°C Derate above 25°C	P_D	625 5.0	W mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	1.5 12	W mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +150	°C

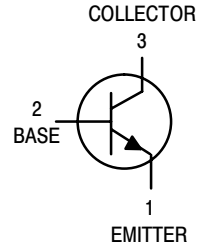
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction−to−Ambient (Note 1)	$R_{\theta JA}$	200	°C/W
Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	83.3	°C/W

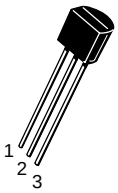
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. $R_{\theta JA}$ is measured with the device soldered into a typical printed circuit board.

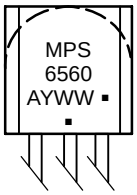
*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



MARKING DIAGRAM



TO−92
CASE 29−11
STYLE 1



MPS6560 = Device Code
A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb−Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
MPS6560	TO−92	5,000 Units/Box
MPS6560G	TO−92 (Pb−Free)	5,000 Units/Box

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

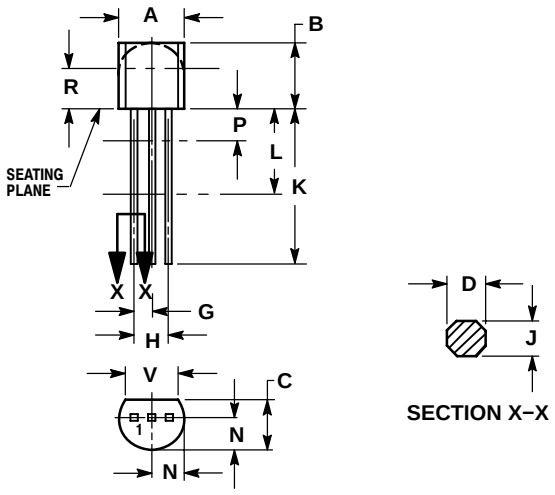
Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector−Emitter Breakdown Voltage (Note 2) (I_C = 10 mAdc, I_B = 0)	$V_{(BR)CEO}$	25	−	Vdc
Collector−Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)	$V_{(BR)CBO}$	25	−	Vdc
Emitter−Base Breakdown Voltage (I_E = 100 μAdc, I_C = 0)	$V_{(BR)EBO}$	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
ON CHARACTERISTICS (Note 2)				
DC Current Gain (I_C = 10 mAdc, V_{CE} = 1.0 Vdc) (I_C = 100 mAdc, V_{CE} = 1.0 Vdc) (I_C = 500 mAdc, V_{CE} = 1.0 Vdc)	h_{FE}	 35 50 50	 − − 200	−
Collector−Emitter Saturation Voltage (I_C = 500 mAdc, I_B = 50 mAdc)	$V_{CE(sat)}$	−	0.5	Vdc
Base−Emitter On Voltage (I_C = 500 mAdc, V_{CE} = 1.0 Vdc)	$V_{BE(on)}$	−	1.2	Vdc
SMALL−SIGNAL CHARACTERISTICS				
Current−Gain — Bandwidth Product (I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 20 MHz)	f_T	60	−	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz)	C_{obo}	−	30	pF

2. Pulse Test: Pulse Width ≤ 300 μs; Duty Cycle ≤ 2.0%.

MPS6560

PACKAGE DIMENSIONS

TO−92 (TO−226)
CASE 29−11
ISSUE AL



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

	INCHES		MILLIMETERS	
DIM	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	0.021	0.407	0.533
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
2. BASE
3. COLLECTOR

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 61312, Phoenix, Arizona 85082−1312 USA
Phone: 480−829−7710 or 800−344−3860 Toll Free USA/Canada
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Email: orderlit@onsemi.com

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Japan: ON Semiconductor, Japan Customer Focus Center
2−9−1 Kamimeguro, Meguro−ku, Tokyo, Japan 153−0051
Phone: 81−3−5773−3850

ON Semiconductor Website: http://onsemi.com

Order Literature: http://www.onsemi.com/litorder

For additional information, please contact your local Sales Representative.

MPS6560/D