



**THE DATASHEET OF  
MPS6727**



# MPS6726

## One Watt Amplifier Transistors

### PNP Silicon

#### Features

- This is a Pb-Free Device\*

#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	$V_{CEO}$	-30	Vdc
Collector - Base Voltage	$V_{CBO}$	-40	Vdc
Emitter - Base Voltage	$V_{EBO}$	-5.0	Vdc
Collector Current - Continuous	$I_C$	-1.0	Adc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	1.0 8.0	W mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	2.5 20	W mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

#### THERMAL CHARACTERISTICS

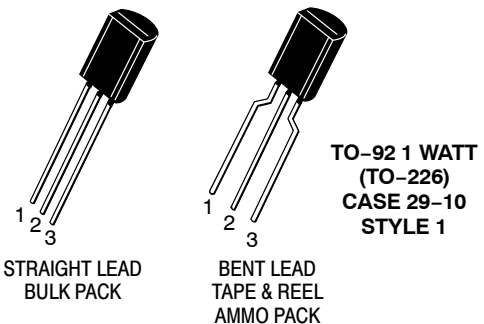
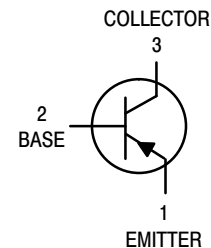
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	125	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	50	$^\circ\text{C}/\text{W}$

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.

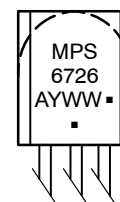


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#### MARKING DIAGRAM



- A = Assembly Location
  - Y = Year
  - WW = Work Week
  - = Pb-Free Package
- (Note: Microdot may be in either location)

#### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
MPS6726G	TO-92 (Pb-Free)	5000 Units / Bulk

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

# MPS6726

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector - Emitter Breakdown Voltage (I <sub>C</sub> = -10 mAdc, I <sub>E</sub> = 0)	V <sub>(BR)CEO</sub>	-30	-	Vdc
Collector - Base Breakdown Voltage (I <sub>C</sub> = -100 μAdc, I <sub>E</sub> = 0)	V <sub>(BR)CBO</sub>	-40	-	Vdc
Emitter - Base Breakdown Voltage (I <sub>E</sub> = -100 μAdc, I <sub>C</sub> = 0)	V <sub>(BR)EBO</sub>	-5.0	-	Vdc
Collector Cutoff Current (V <sub>CB</sub> = -40 Vdc, I <sub>E</sub> = 0)	I <sub>CBO</sub>	-	-0.1	μAdc
Emitter Cutoff Current (V <sub>EB</sub> = -5.0 Vdc, I <sub>C</sub> = 0)	I <sub>EBO</sub>	-	-0.1	μAdc
<b>ON CHARACTERISTICS (Note 1)</b>				
DC Current Gain (I <sub>C</sub> = -100 mAdc, V <sub>CE</sub> = -1.0 Vdc) (I <sub>C</sub> = -1000 mAdc, V <sub>CE</sub> = -1.0 Vdc)	h <sub>FE</sub>	60 50	- 250	-
Collector - Emitter Saturation Voltage (I <sub>C</sub> = -1000 mAdc, I <sub>B</sub> = -100 mAdc)	V <sub>CE(sat)</sub>	-	-0.5	Vdc
Base - Emitter On Voltage (I <sub>C</sub> = -1000 mAdc, V <sub>CE</sub> = -1.0 Vdc)	V <sub>BE(on)</sub>	-	-1.2	Vdc
<b>SMALL-SIGNAL CHARACTERISTICS</b>				
Collector - Base Capacitance (V <sub>CB</sub> = -10 Vdc, I <sub>E</sub> = 0, f = 1.0 MHz)	C <sub>cb</sub>	-	30	pF
Small-Signal Current Gain (I <sub>C</sub> = -50 mAdc, V <sub>CE</sub> = -10 Vdc, f = 20 MHz)	h <sub>fe</sub>	2.5	25	-

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

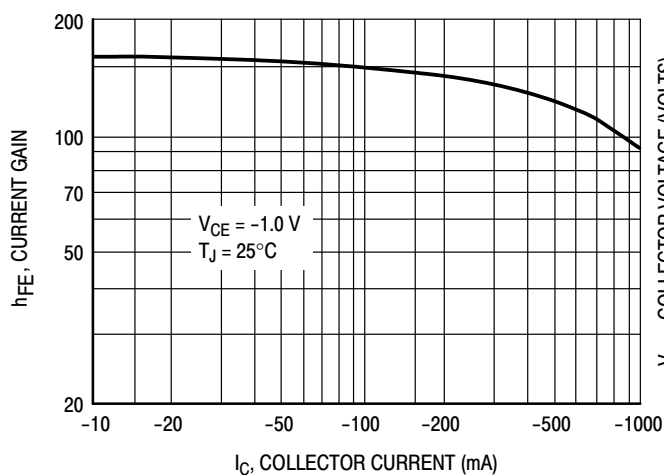


Figure 1. DC Current Gain

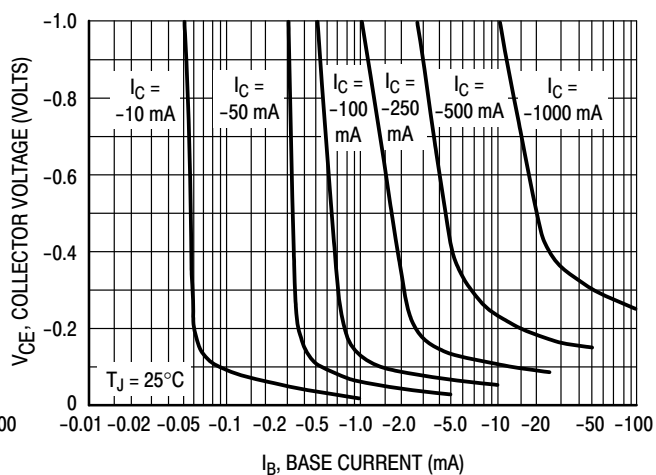


Figure 2. Collector Saturation Region

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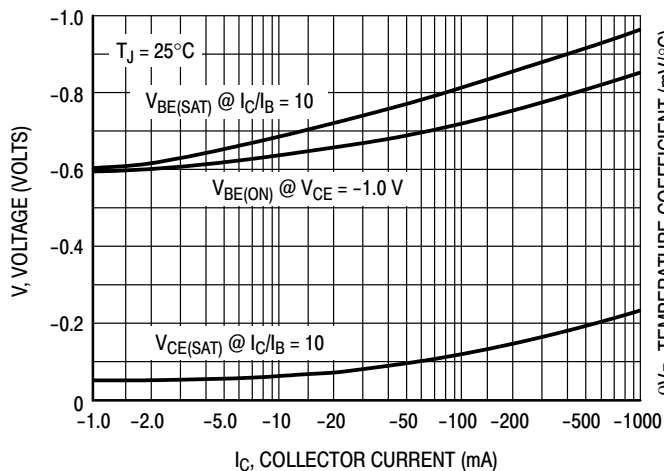


Figure 3. "ON" Voltages

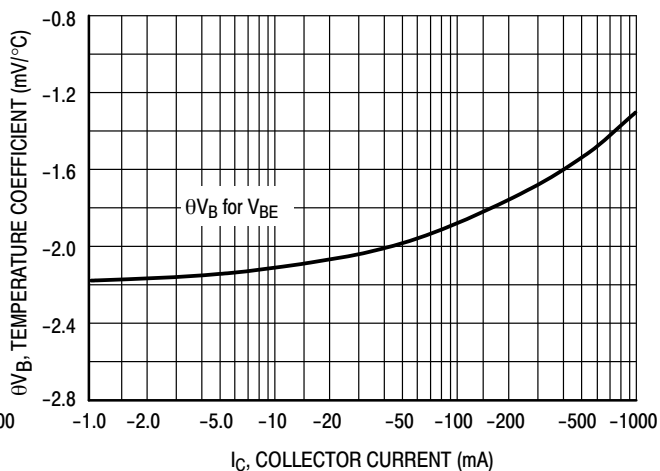


Figure 4. Temperature Coefficient

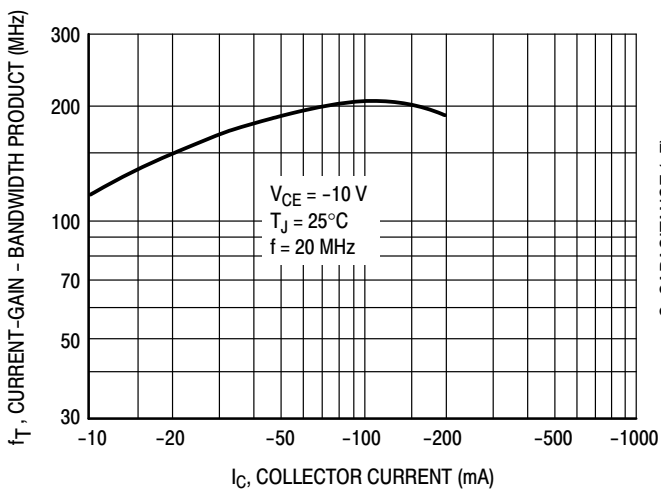


Figure 5. Current Gain — Bandwidth Product

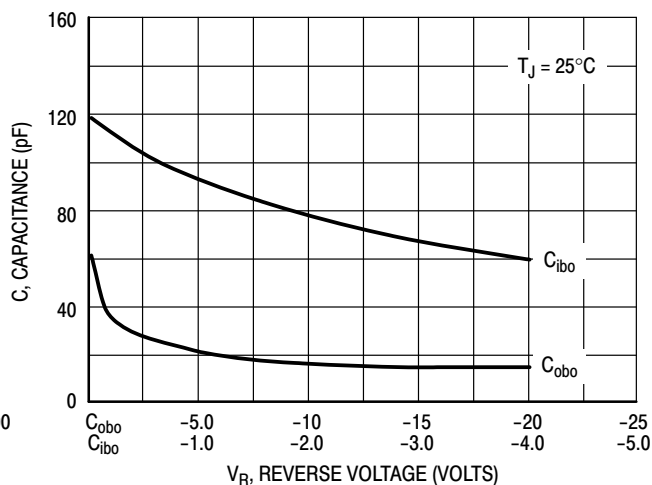


Figure 6. Capacitance

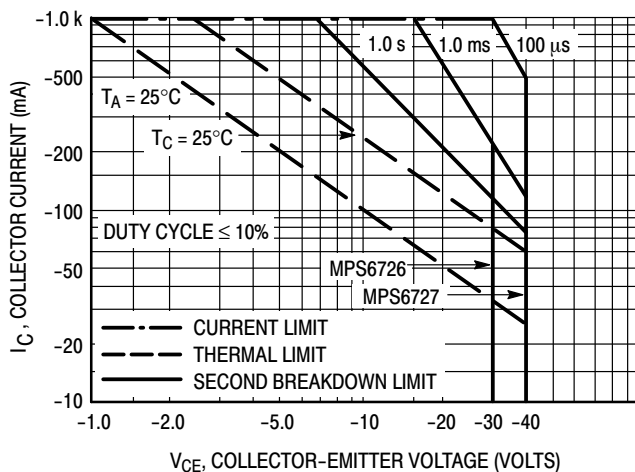
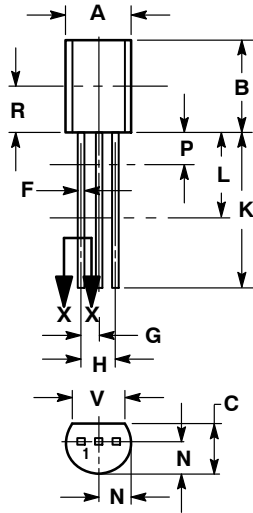


Figure 7. Active Region — Safe Operating Area

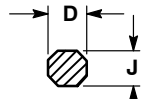
# MPS6726

## PACKAGE DIMENSIONS

TO-92 (TO-226) 1 WATT  
CASE 29-10  
ISSUE O



STRAIGHT LEAD  
BULK PACK



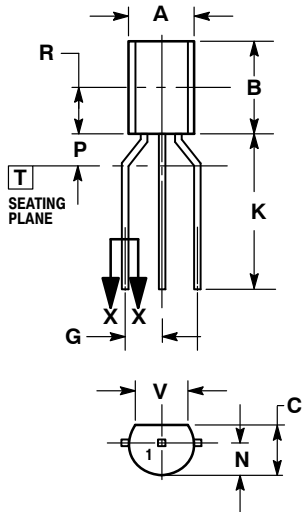
SECTION X-X

NOTES:

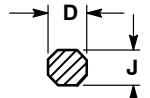
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2. CONTROLLING DIMENSION: INCHES.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. DIMENSION F APPLIES BETWEEN DIMENSIONS P AND L. DIMENSIONS D AND J APPLY BETWEEN DIMENSIONS L AND K MINIMUM. THE LEAD DIMENSIONS ARE UNCONTROLLED IN DIMENSION 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	0.46	0.53
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	0.018	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	---
V	0.135	---	3.43	---

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



BENT LEAD  
TAPE & REEL  
AMMO PACK



SECTION X-X

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
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DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
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B	0.290	0.310	7.37	7.87
C	0.125	0.165	3.18	4.19
D	0.018	0.021	0.46	0.53
G	0.094	0.102	2.40	2.80
J	0.018	0.024	0.46	0.61
K	0.500	---	12.70	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.135	---	3.43	---
V	0.135	---	3.43	---

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