

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°C | P_D | 1.0 8.0 | W mW/ $^\circ\text{C}$ |
| Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°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

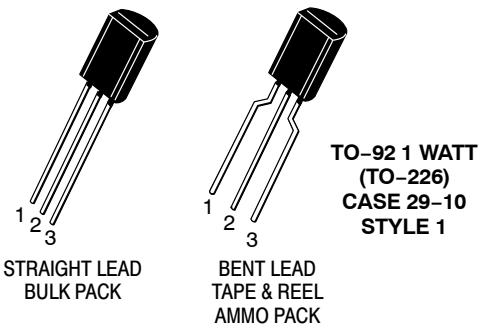
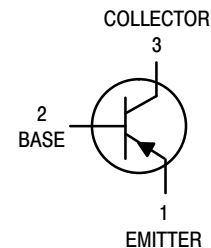
| Characteristic | Symbol | Max | Unit |
|---|-----------------|-----|---------------------------|
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 125 | $^\circ\text{C}/\text{W}$ |
| Thermal Resistance, Junction-to-Case | $R_{\theta JC}$ | 50 | $^\circ\text{C}/\text{W}$ |

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.

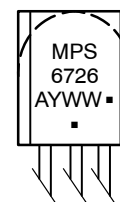


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MARKING DIAGRAM



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

ORDERING INFORMATION

| Device | Package | Shipping [†] |
|----------|-----------------|-----------------------|
| 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.

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

| Characteristic | Symbol | Min | Max | Unit |
|---|---------------|------|------|-----------------|
| OFF CHARACTERISTICS | | | | |
| Collector - Emitter Breakdown Voltage ($I_C = -10\text{ mAdc}$, $I_E = 0$) | $V_{(BR)CEO}$ | -30 | - | Vdc |
| Collector - Base Breakdown Voltage ($I_C = -100\ \mu\text{Adc}$, $I_E = 0$) | $V_{(BR)CBO}$ | -40 | - | Vdc |
| Emitter - Base Breakdown Voltage ($I_E = -100\ \mu\text{Adc}$, $I_C = 0$) | $V_{(BR)EBO}$ | -5.0 | - | Vdc |
| Collector Cutoff Current ($V_{CB} = -40\text{ Vdc}$, $I_E = 0$) | I_{CBO} | - | -0.1 | μAdc |
| Emitter Cutoff Current ($V_{EB} = -5.0\text{ Vdc}$, $I_C = 0$) | I_{EBO} | - | -0.1 | μAdc |

ON CHARACTERISTICS (Note 1)

| | | | | |
|--|---------------|----------|----------|-----|
| DC Current Gain ($I_C = -100\text{ mAdc}$, $V_{CE} = -1.0\text{ Vdc}$) ($I_C = -1000\text{ mAdc}$, $V_{CE} = -1.0\text{ Vdc}$) | h_{FE} | 60 50 | - 250 | - |
| Collector - Emitter Saturation Voltage ($I_C = -1000\text{ mAdc}$, $I_B = -100\text{ mAdc}$) | $V_{CE(sat)}$ | - | -0.5 | Vdc |
| Base - Emitter On Voltage ($I_C = -1000\text{ mAdc}$, $V_{CE} = -1.0\text{ Vdc}$) | $V_{BE(on)}$ | - | -1.2 | Vdc |

SMALL-SIGNAL CHARACTERISTICS

| | | | | |
|--|----------|-----|----|----|
| Collector - Base Capacitance ($V_{CB} = -10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$) | C_{cb} | - | 30 | pF |
| Small-Signal Current Gain ($I_C = -50\text{ mAdc}$, $V_{CE} = -10\text{ Vdc}$, $f = 20\text{ MHz}$) | h_{fe} | 2.5 | 25 | - |

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

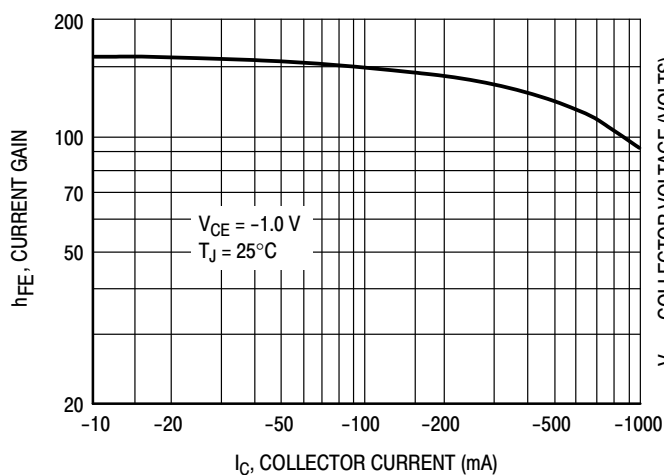


Figure 1. DC Current Gain

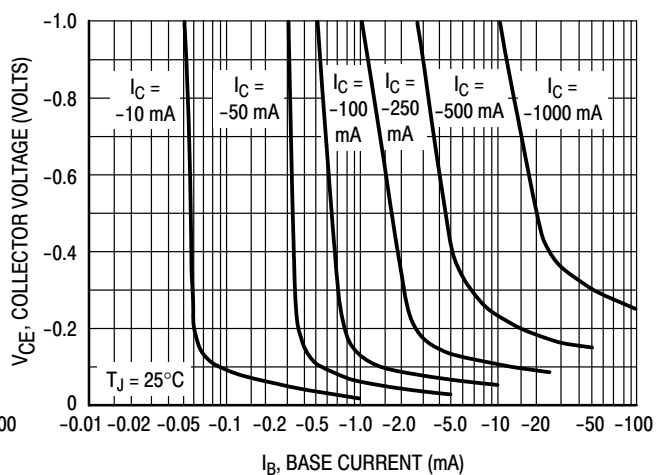


Figure 2. Collector Saturation Region

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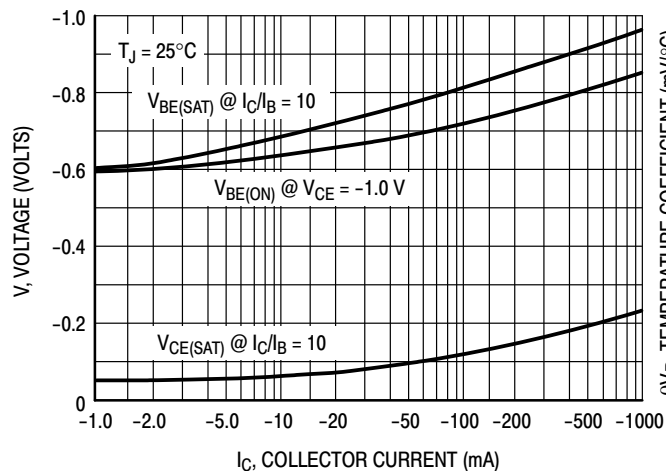


Figure 3. "ON" Voltages

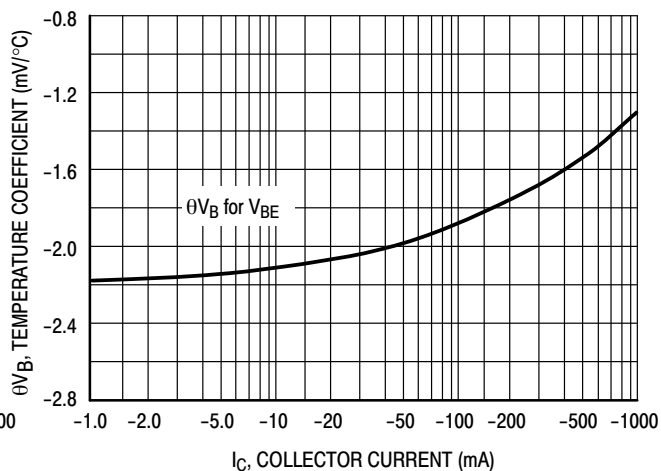


Figure 4. Temperature Coefficient

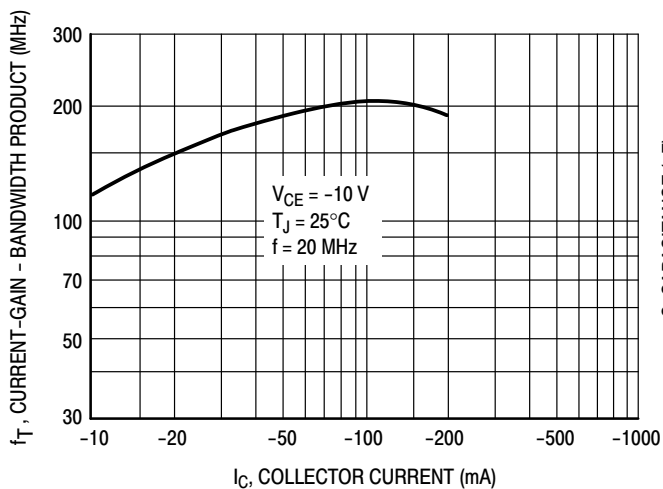


Figure 5. Current Gain — Bandwidth Product

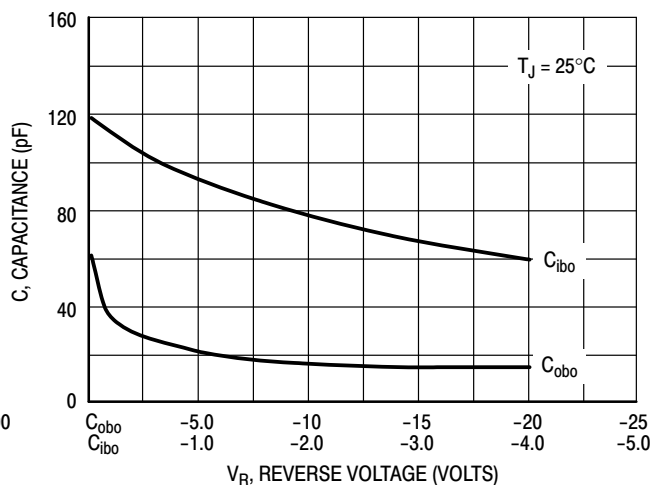


Figure 6. Capacitance

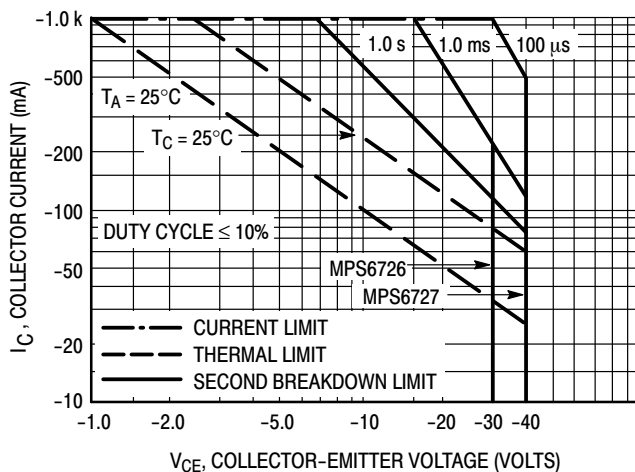
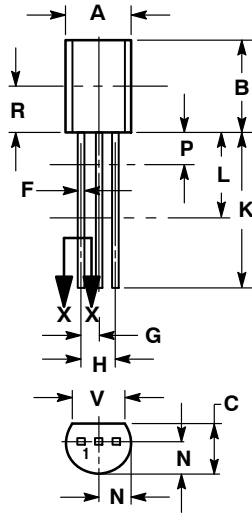


Figure 7. Active Region — Safe Operating Area

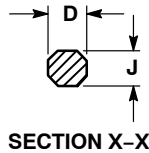
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PACKAGE DIMENSIONS

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



STRAIGHT LEAD
BULK PACK



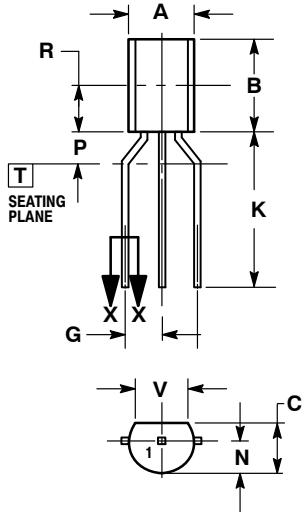
SECTION X-X

NOTES:

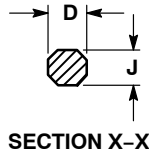
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCHES.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. DIMENSION F APPLIES BETWEEN DIMENSIONS P AND L. DIMENSIONS D AND J APPLY BETWEEN DIMENSIONS L AND K MINIMUM. THE LEAD DIMENSIONS ARE UNCONTROLLED IN DIMENSION 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:

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| 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 |
| 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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