

MPS6726, MPS6727

One Watt Amplifier Transistors

PNP Silicon

Features

- Pb-Free Packages are Available*

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage MPS6726 MPS6727	V_{CEO}	-30 -40	Vdc
Collector-Base Voltage MPS6726 MPS6727	V_{CBO}	-40 -50	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	$^\circ\text{C}/\text{W}$

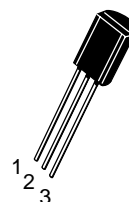
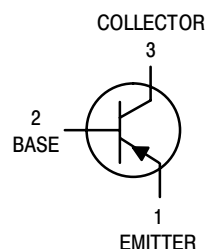
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

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



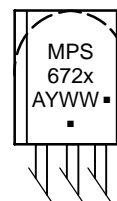
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TO-92 (TO-226)
CASE 29-10
STYLE 1

MARKING DIAGRAM



MPS672x = Device Code
x = 6 or 7

A = Assembly Location

Y = Year

WW = Work Week

▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
MPS6726	TO-92	5000 Units / Bulk
MPS6726G	TO-92 (Pb-Free)	5000 Units / Bulk
MPS6727	TO-92	5000 Units / Bulk
MPS6727G	TO-92 (Pb-Free)	5000 Units / Bulk

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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 ($I_C = -10\text{ mAdc}$, $I_B = 0$)	MPS6726 MPS6727	$V_{(BR)CEO}$	-30 -40	- -	Vdc
Collector-Base Breakdown Voltage ($I_C = -100\ \mu\text{Adc}$, $I_E = 0$)	MPS6726 MPS6727	$V_{(BR)CBO}$	-40 -50	- -	Vdc
Emitter-Base Breakdown Voltage ($I_E = -100\ \mu\text{Adc}$, $I_C = 0$)		$V_{(BR)EBO}$	-5.0	-	Vdc
Collector Cutoff Current ($V_{CB} = -40\text{ Vdc}$, $I_E = 0$) ($V_{CB} = -50\text{ Vdc}$, $I_E = 0$)	MPS6726 MPS6727	I_{CBO}	- -	-0.1 -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 $\leq 2.0\%$.

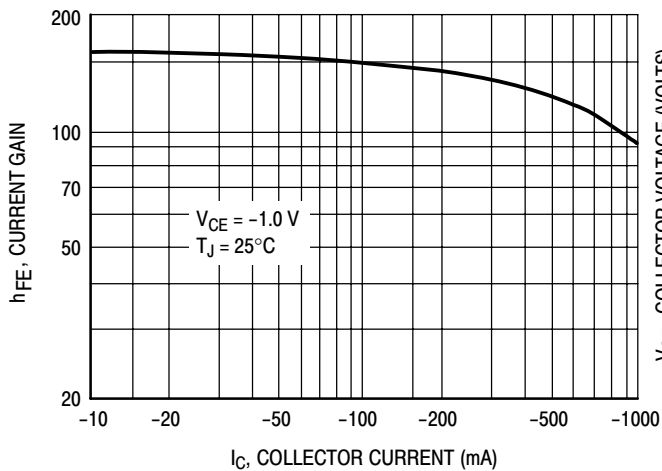


Figure 1. DC Current Gain

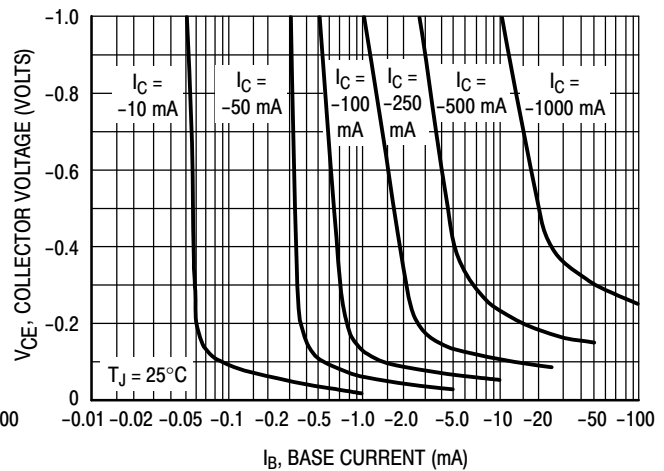


Figure 2. Collector Saturation Region

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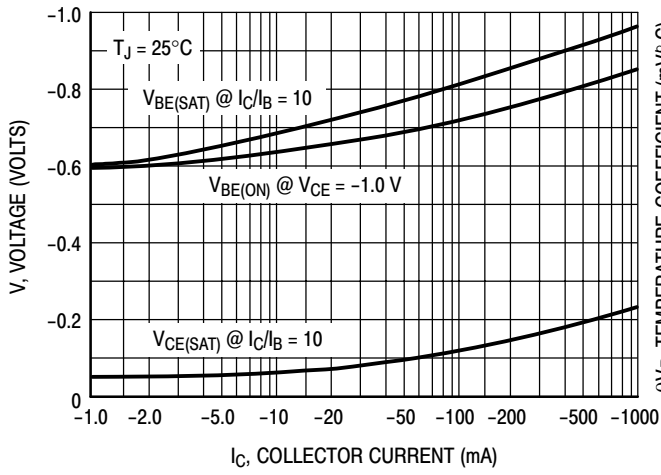


Figure 3. "ON" Voltages

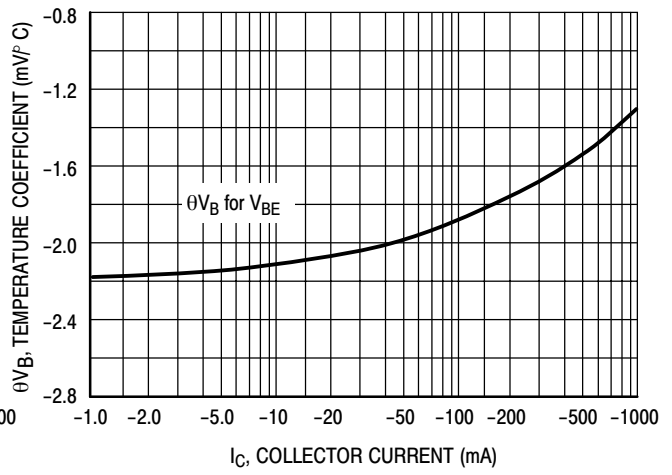


Figure 4. Temperature Coefficient

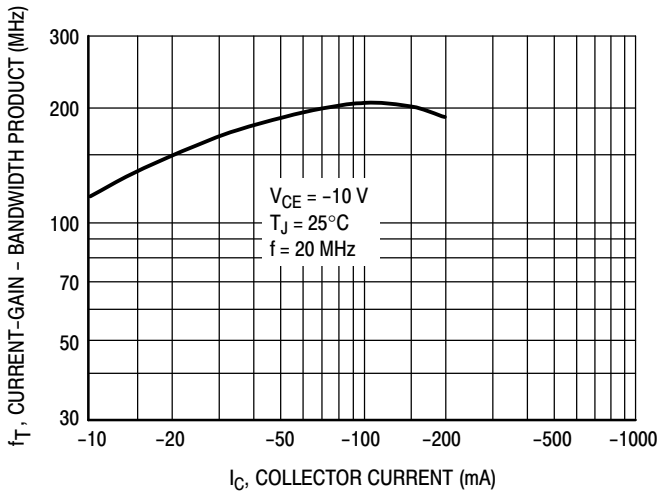


Figure 5. Current Gain — Bandwidth Product

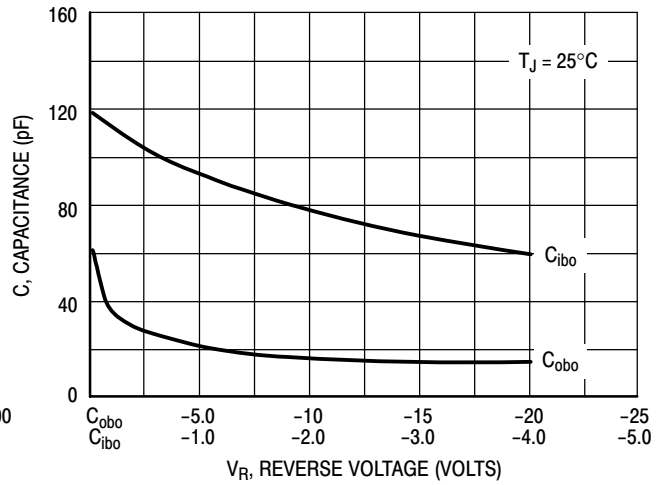


Figure 6. Capacitance

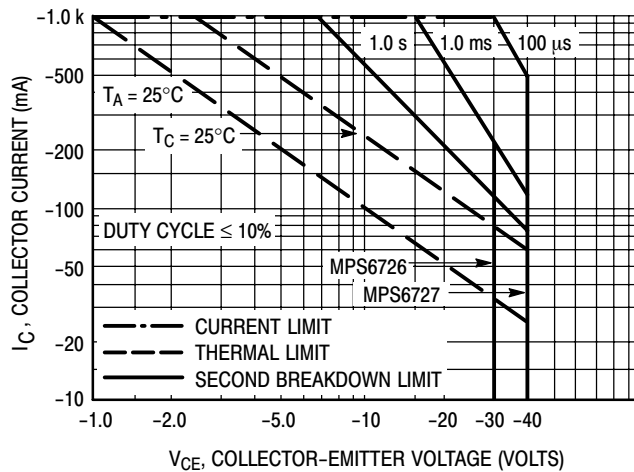
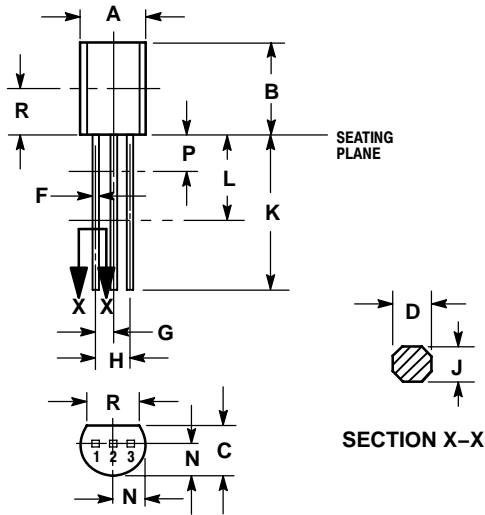


Figure 7. Active Region — Safe Operating Area

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PACKAGE DIMENSIONS

TO-92 (TO-226)
CASE 29-10
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. 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	---

STYLE 1:

- PIN 1. EMITTER
- BASE
- COLLECTOR

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