

MPS6729

Preferred Device

One Watt Amplifier Transistor

PNP Silicon



ON Semiconductor™

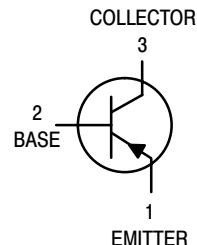
<http://onsemi.com>

MAXIMUM RATINGS

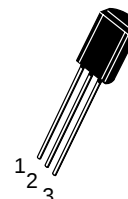
Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	–80	Vdc
Collector–Base Voltage	V_{CBO}	–80	Vdc
Emitter–Base Voltage	V_{EBO}	–4.0	Vdc
Collector Current – Continuous	I_C	–500	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0 8.0	Watt mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	2.5 20	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	$R_{\theta JA}$	125	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	50	$^\circ\text{C/W}$



TO–92 (TO–226)
CASE 29–10
STYLE 1



MARKING DIAGRAM



Y = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping
MPS6729	TO–92	Bulk

Preferred devices are recommended choices for future use and best overall value.

MPS6729

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 (Note 1.) ($I_C = -1.0\text{ mA}$, $I_E = 0$)	$V_{(BR)CEO}$	-80	–	Vdc
Collector–Base Breakdown Voltage ($I_C = 0.1\text{ mA}$, $I_E = 0$)	$V_{(BR)CBO}$	-80	–	Vdc
Emitter–Base Breakdown Voltage ($I_E = -10\text{ }\mu\text{A}$, $I_C = 0$)	$V_{(BR)EBO}$	-5.0	–	Vdc
Collector Cutoff Current ($V_{CB} = -60\text{ Vdc}$, $I_E = 0$)	I_{CBO}	–	-0.1	μA dc
Emitter Cutoff Current ($V_{EB} = -5.0\text{ Vdc}$, $I_C = 0$)	I_{EBO}	–	-10	μA dc

ON CHARACTERISTICS (Note 1.)

DC Current Gain ($I_C = -50\text{ mA}$, $V_{CE} = -1.0\text{ Vdc}$) ($I_C = -250\text{ mA}$, $V_{CE} = -1.0\text{ Vdc}$)	h_{FE}	80 50	– 250	–
Collector–Emitter Saturation Voltage ($I_C = -250\text{ mA}$, $I_B = -10\text{ mA}$)	$V_{CE(sat)}$	–	-0.5	Vdc
Base–Emitter On Voltage ($I_C = -250\text{ mA}$, $V_{CE} = -1.0\text{ Vdc}$)	$V_{BE(on)}$	–	-1.2	Vdc

SMALL–SIGNAL CHARACTERISTICS

Collector–Base Capacitance ($V_{CB} = -10\text{ Vdc}$, $f = 1.0\text{ MHz}$)	C_{cb}	–	30	pF
Small–Signal Current Gain ($I_C = 200\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $f = 20\text{ MHz}$)	h_{fe}	2.5	25	

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

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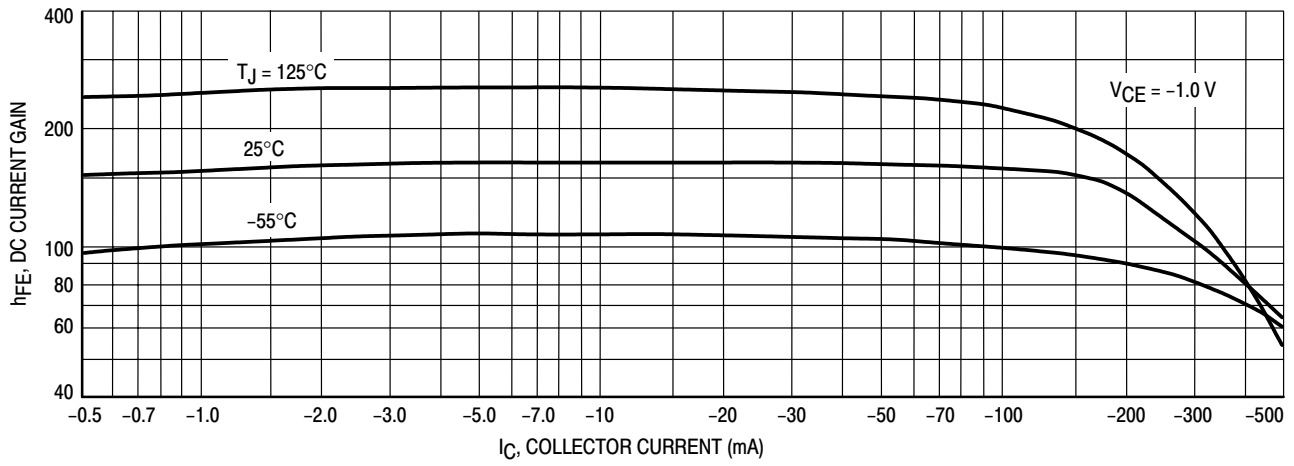


Figure 1. DC Current Gain

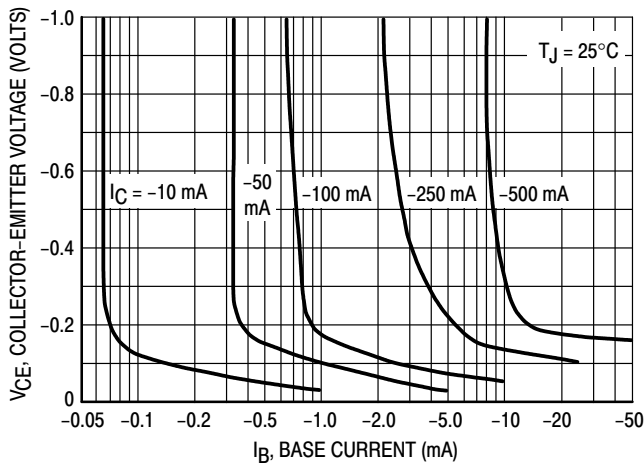


Figure 2. Collector Saturation Region

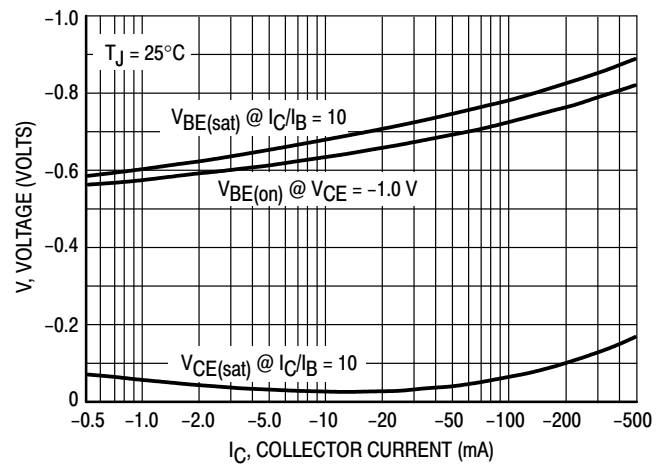


Figure 3. "On" Voltages

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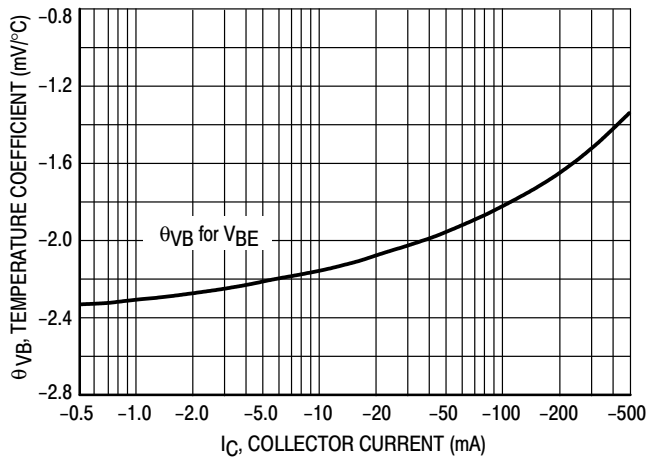


Figure 4. Base-Emitter Temperature Coefficient

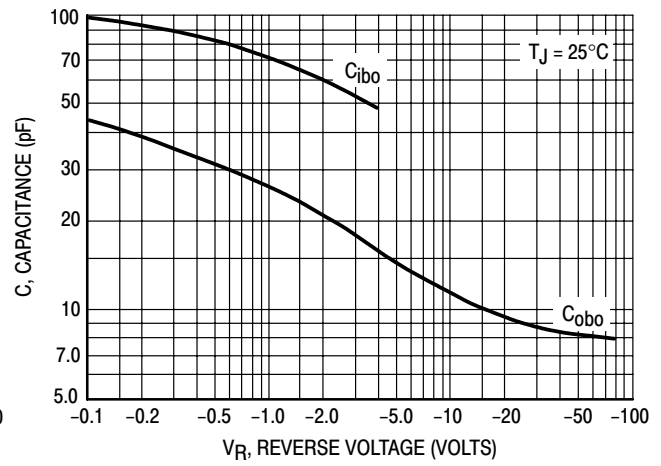


Figure 5. Capacitance

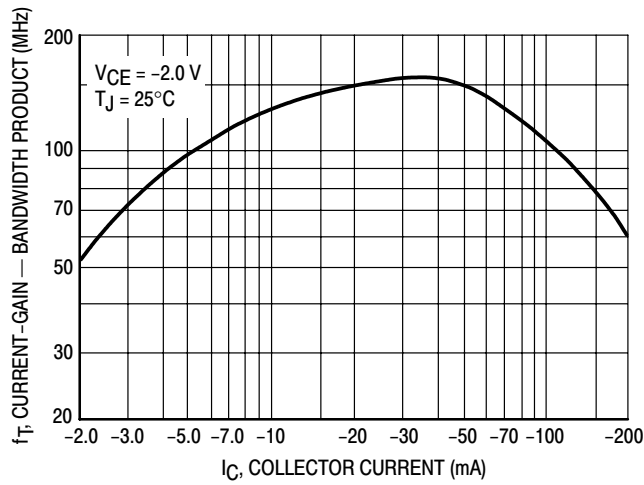


Figure 6. Current-Gain – Bandwidth Product

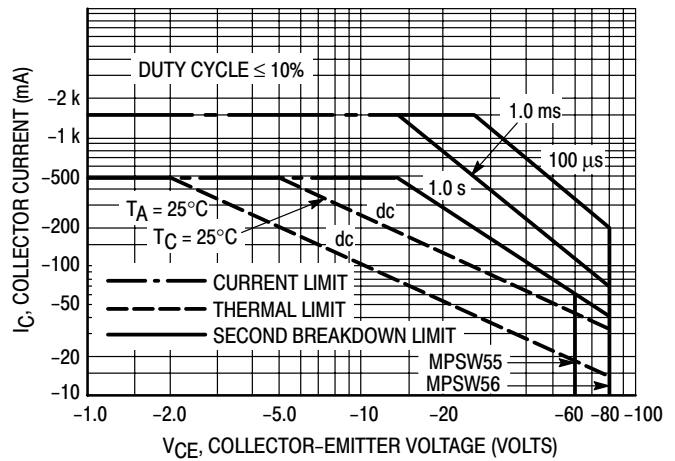
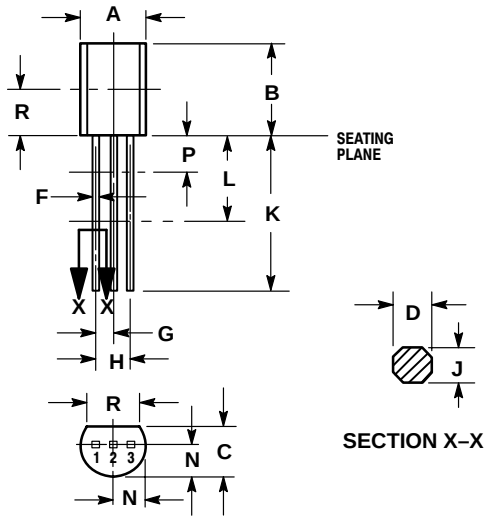


Figure 7. Active Region – Safe Operating Area

PACKAGE DIMENSIONS

MPS6729

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

Notes

Notes

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