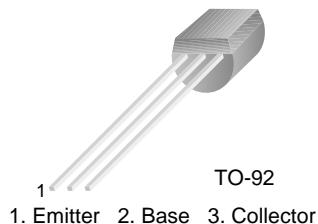


MPSA77

PNP Darlington Transistor

- This device is designed for applications requiring extremely high current gain at currents to 800mA.
- Sourced from process 61.



Absolute Maximum Ratings * $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter		Value	Units
V_{CES}	Collector-Emitter Voltage		-60	V
V_{CBO}	Collector-Base Voltage		-60	V
V_{EBO}	Emitter-Base Voltage		-10	V
I_C	Collector Current	- Continuous	-1.2	A
T_J, T_{STG}	Operating and Storage Junction Temperature Range		-55 ~ +150	°C

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

1. These ratings are based on a maximum junction temperature of 150 degrees C.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

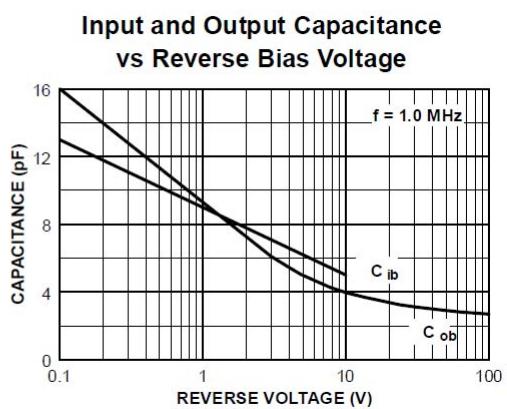
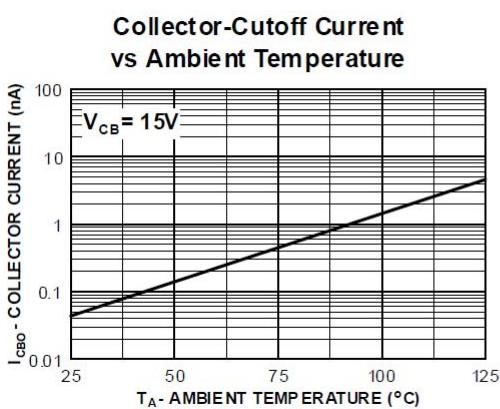
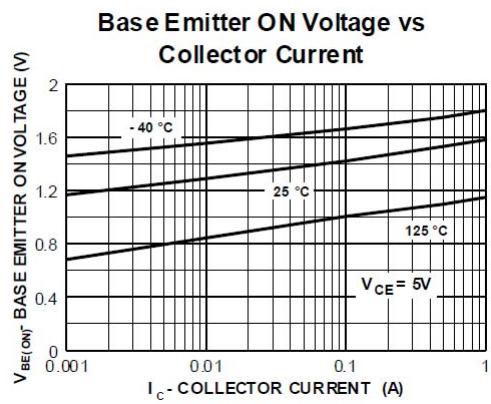
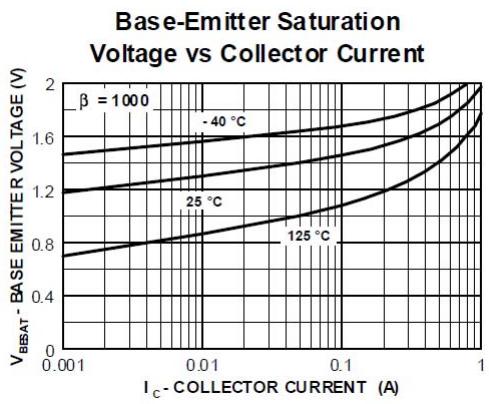
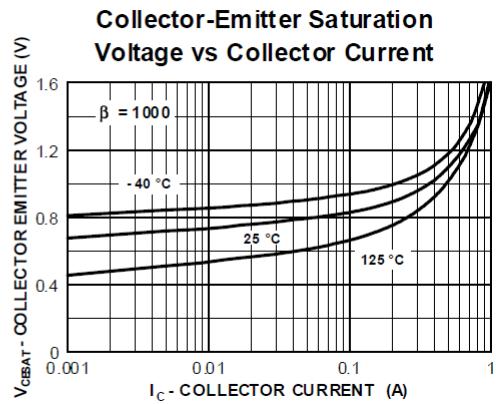
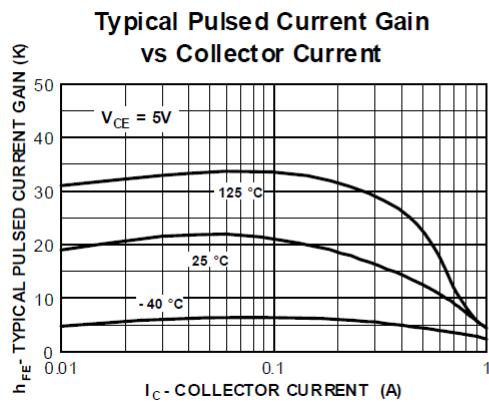
Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above 25°C	625 5.0	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	°C/W

Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
Off Characteristics					
$V_{(\text{BR})\text{CES}}$	Collector-Emitter Breakdown Voltage	$I_C = -100\mu\text{A}$, $I_B = 0$	-60		V
I_{CBO}	Collector Cutoff Current	$V_{\text{CB}} = -30\text{V}$, $I_E = 0$		-100	nA
I_{EBO}	Emitter Cutoff Current	$V_{\text{EB}} = -10\text{V}$, $I_C = 0$		-100	nA
On Characteristics *					
h_{FE}	DC Current Gain	$I_C = -10\text{mA}$, $V_{\text{CE}} = -5.0\text{V}$ $I_C = -100\text{mA}$, $V_{\text{CE}} = -5.0\text{V}$	10,000 10,000		
$V_{\text{CE}(\text{sat})}$	Collector-Emitter Saturation Voltage	$I_C = -100\text{mA}$, $I_B = -0.1\text{mA}$		-1.5	V
$V_{\text{BE}(\text{on})}$	Base-Emitter On Voltage	$I_C = -100\text{mA}$, $V_{\text{CE}} = -5.0\text{mA}$		-2.0	V
Small Signal Characteristics *					
f_T	Current Gain Bandwidth Product	$I_C = -10\text{mA}$, $V_{\text{CE}} = -5.0\text{V}$ $f = 100\text{MHz}$	100		MHz

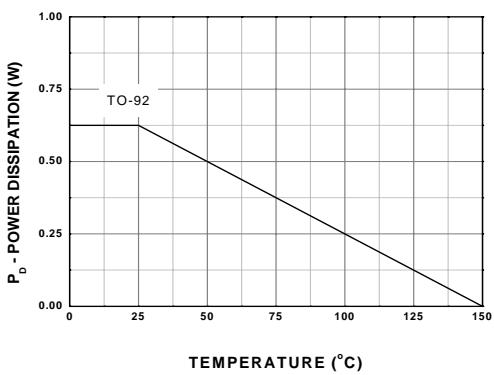
* Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$

Typical Performance Characteristics

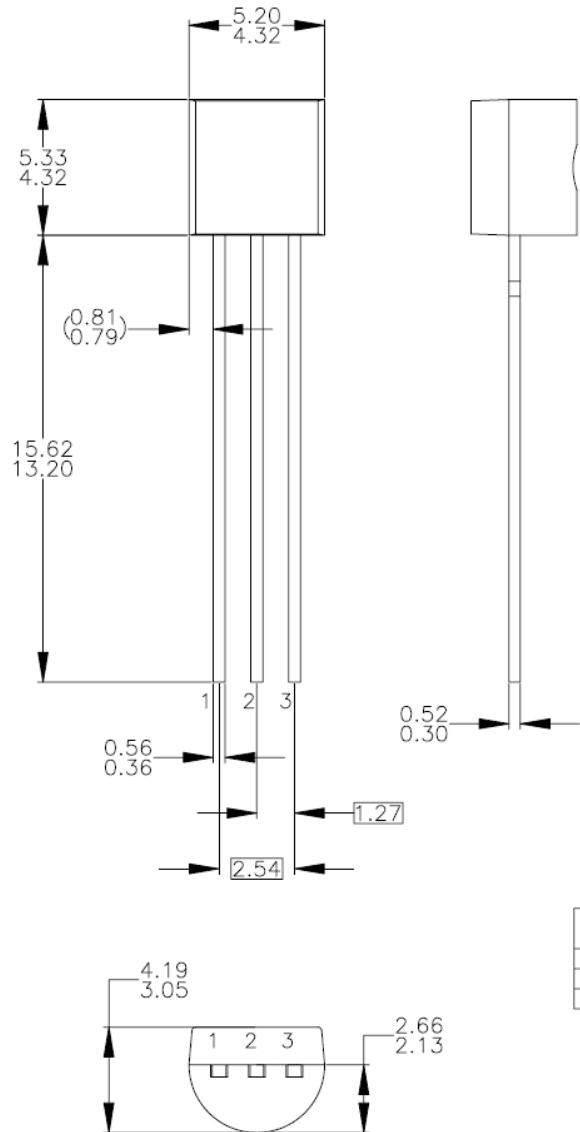


Typical Performance Characteristics (Continued)

Power Dissipation vs Ambient Temperature



Mechanical Dimensions (TO-92)



NOTES: UNLESS OTHERWISE SPECIFIED

- A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DRAWING CONFORMS TO ASME Y14.5M-1994.
- D) TO-92 (92,94,96,97,98) PIN CONFIGURATION:

Pin	92					94					96					97					98				
	P	F	M	P	F	M	B	F	M	P	F	M	P	F	M	P	F	M	P	F	M				
1	E	S	S	E	S	S	B	D	G	C	G	D	C	G	D	E	S	S	B	D	G				
2	B	D	G	C	G	D	E	S	S	B	D	G	E	S	S	B	D	G	E	S	S				
3	C	G	D	B	D	G	C	G	D	E	S	S	B	D	G	E	S	S	B	D	G				

LEGEND:

P — BIPOLAR	E — Emitter	D — Drain
F — JFET	B — Base	S — Source
M — DMOS	C — Collector	G — Gate

- E) FOR PACKAGE 92, 94, 96, 97 AND 98: PIN CONFIGURATION DRAIN "D" AND SOURCE "S" ARE INTERCHANGEABLE AT JFET "F" OPTION.
- F) DRAWING FILENAME: MKT-ZA03DREV3.

Dimensions in Millimeters



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