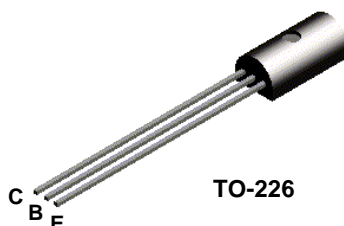




# THE DATASHEET OF MPSW56



## MPSW56



### PNP General Purpose Amplifier

This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 800 mA. Sourced from Process 79.

#### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CEO</sub>	Collector-Emitter Voltage	80	V
V <sub>CBO</sub>	Collector-Base Voltage	80	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>C</sub>	Collector Current - Continuous	1.0	A
T <sub>J</sub> , T <sub>stg</sub>	Operating and Storage Junction Temperature Range	-55 to +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

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		MPSW56	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	1.0	W
		8.0	mW/°C
R <sub>θJC</sub>	Thermal Resistance, Junction to Case	50	°C/W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	125	°C/W

\*Device mounted on FR-4 PCB 36 mm X 18 mm X 1.5 mm; mounting pad for the collector lead min. 6 cm<sup>2</sup>.

# PNP General Purpose Amplifier

(continued)

MPSW56

## Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
<b>OFF CHARACTERISTICS</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 1.0 \text{ mA}, I_B = 0$	80		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100 \text{ } \mu\text{A}, I_E = 0$	80		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 1.0 \text{ mA}, I_C = 0$	4.0		V
$I_{CBO}$	Collector-Cutoff Current	$V_{CB} = 60 \text{ V}, I_E = 0$		0.1	$\mu\text{A}$
$I_{CEO}$	Collector-Cutoff Current	$V_{CE} = 60 \text{ V}$		0.5	$\mu\text{A}$
$I_{EBO}$	Emitter-Cutoff Current	$V_{EB} = 3.0 \text{ V}, I_C = 0$		0.10	$\mu\text{A}$

## ON CHARACTERISTICS\*

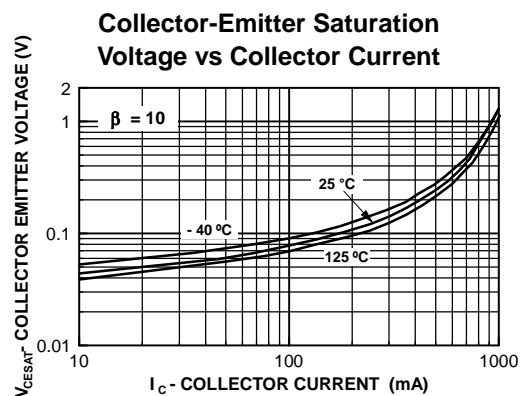
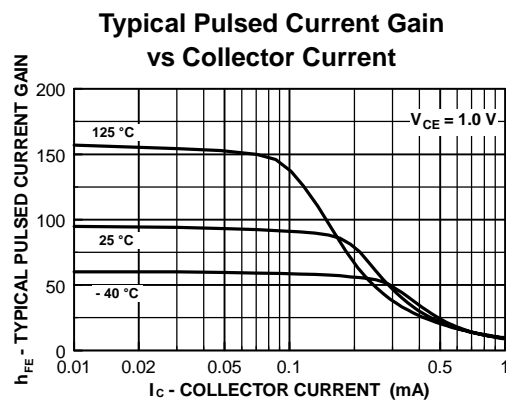
$h_{FE}$	DC Current Gain	$I_C = 50 \text{ mA}, V_{CE} = 1.0 \text{ V}$ $I_C = 250 \text{ mA}, V_{CE} = 1.0 \text{ V}$	100 50		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 250 \text{ mA}, I_B = 10 \text{ mA}$		0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 250 \text{ mA}, V_{CE} = 5.0 \text{ V}$		1.2	V

## SMALL SIGNAL CHARACTERISTICS

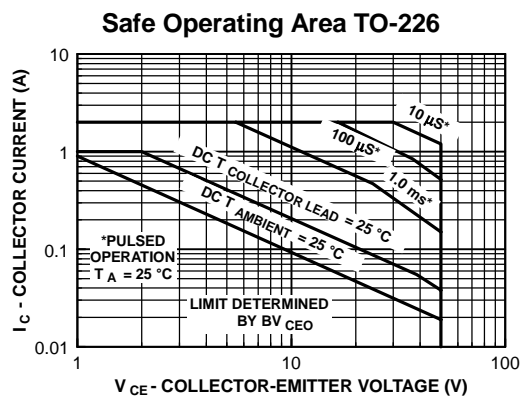
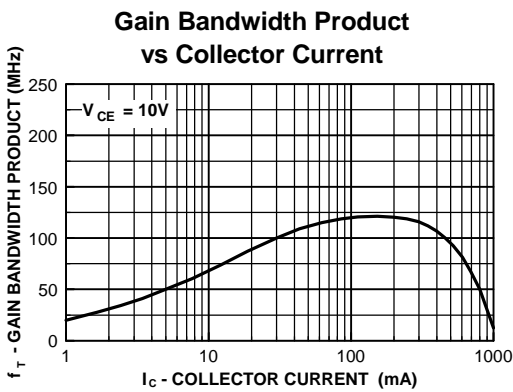
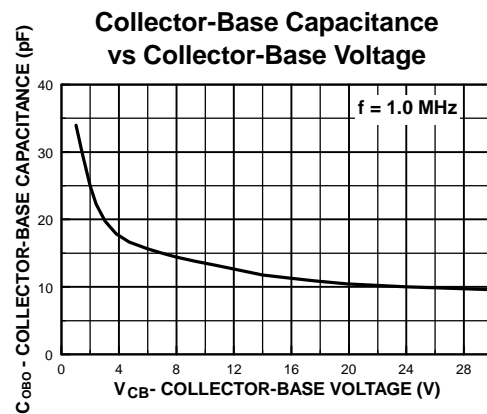
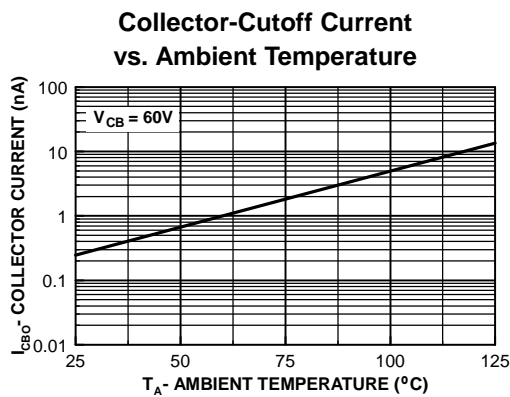
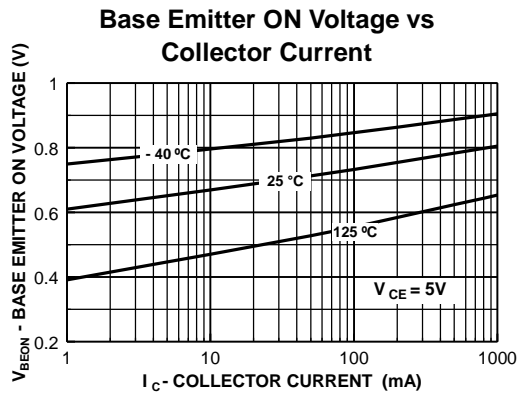
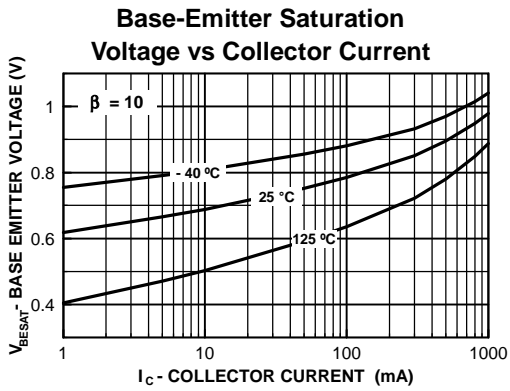
$f_T$	Current Gain-Bandwidth Product	$I_C = 250 \text{ mA}, V_{CE} = 5.0 \text{ V},$ $f = 20 \text{ MHz}$	50		MHz
$C_{ob}$	Collector-Base Capacitance	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$		15	pF

\*Pulse Test: Pulse Width  $\leq 300 \text{ } \mu\text{s}$ , Duty Cycle  $\leq 1.0\%$

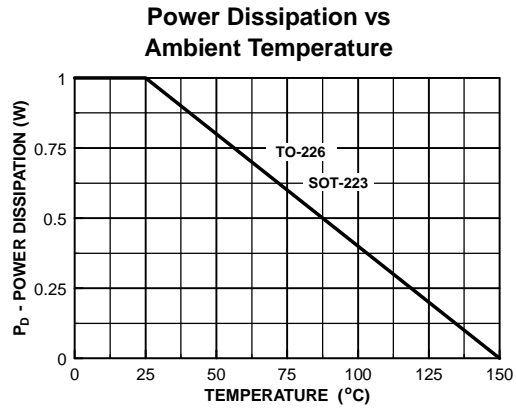
## Typical Characteristics



Typical Characteristics (continued)



Typical Characteristics (continued)



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