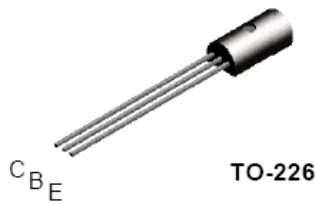


MPSW01

NPN General Purpose Amplifier

Features

- This device is designed for general purpose medium power amplifiers
- Sourced from process 37



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

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	30	V
V_{CBO}	Collector-Base Voltage	40	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current - Continuous	1.0	A
P_D	Total Device Dissipation Derate about 25°C	1.0 8.0	W $\text{mW}/^\circ\text{C}$
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 to +150	$^\circ\text{C}$

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

Note :

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

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case*	50	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient*	125	$^\circ\text{C}/\text{W}$

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

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

Symbol	Parameter	Test Condition	MIN	MAX	Units
--------	-----------	----------------	-----	-----	-------

Off Characteristics

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{ mA}, I_B = 0$	30		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\text{ }\mu\text{A}, I_E = 0$	40		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100\text{ }\mu\text{A}, I_C = 0$	5.0		V
I_{CBO}	Collector-Cutoff Current	$V_{CB} = 30\text{ V}, I_E = 0$		0.1	μA
I_{EBO}	Emitter-Cutoff Current	$V_{EB} = 3.0\text{ V}, I_C = 0$		0.1	μA

On Characteristics

h_{FE}	DC Current Gain	$I_C = 10\text{ mA}, V_{CE} = 1.0\text{ V}$ $I_C = 100\text{ mA}, V_{CE} = 1.0\text{ V}$ $I_C = 1.0\text{ A}, V_{CE} = 1.0\text{ V}$	55 60 50		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage *	$I_C = 1.0\text{ A}, I_B = 100\text{ mA}$		0.5	V
$V_{BE(on)}$	Emitter-Base On Voltage *	$I_C = 1.0\text{ A}, V_{CE} = 1.0\text{ V}$		1.2	V

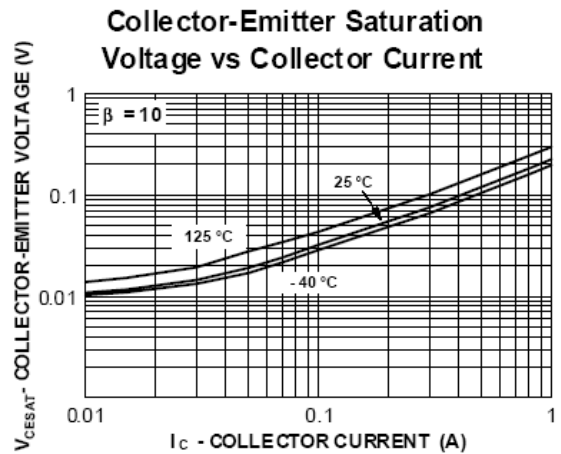
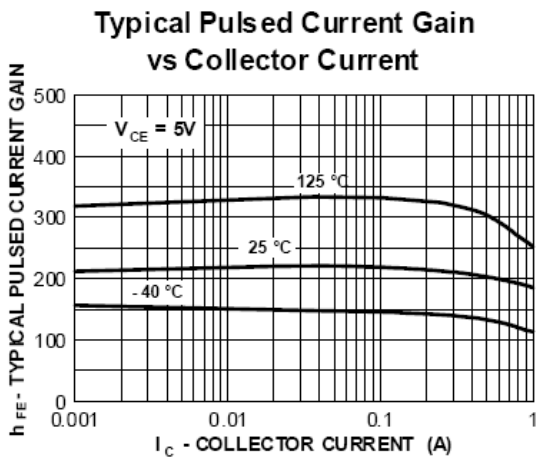
Small Signal Characteristics

f_r	Small-Signal Current Gain	$I_C = 50\text{ mA}, V_{CE} = 10\text{ V}, f = 20\text{ MHz}$	50		MHz
C_{cb}	Collector-Base Capacitance	$V_{CB} = 10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$		20	pF

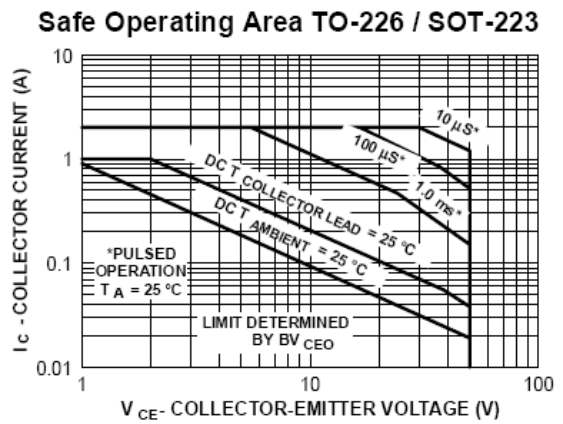
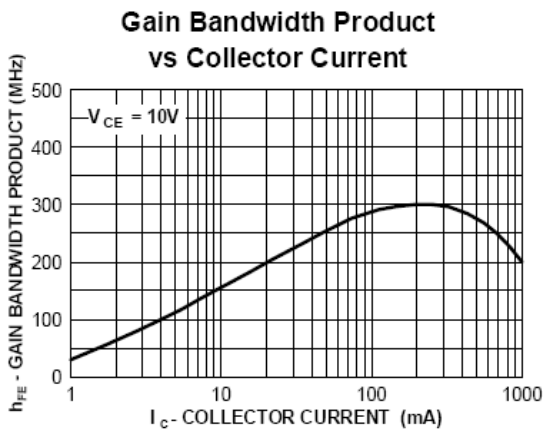
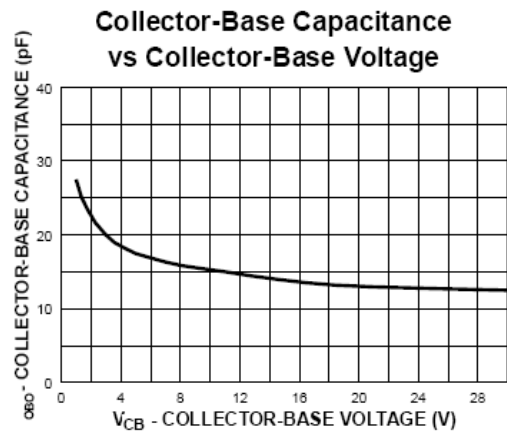
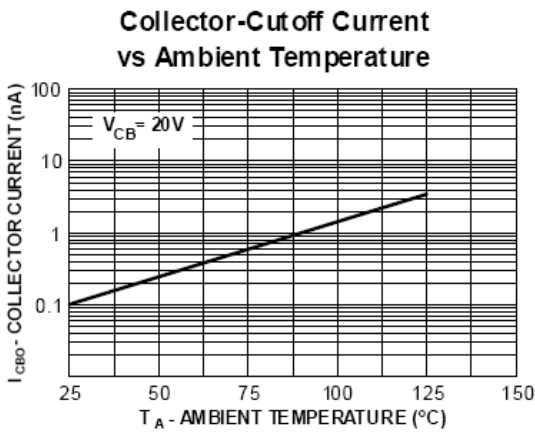
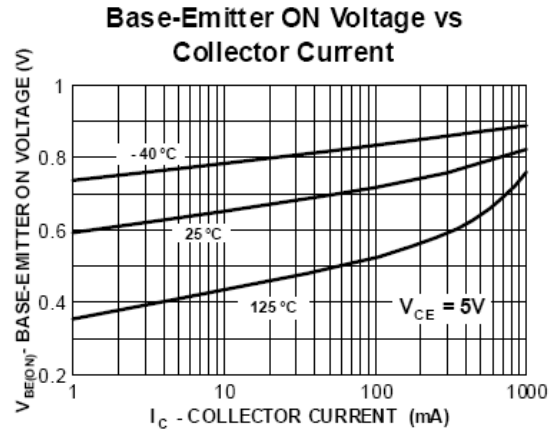
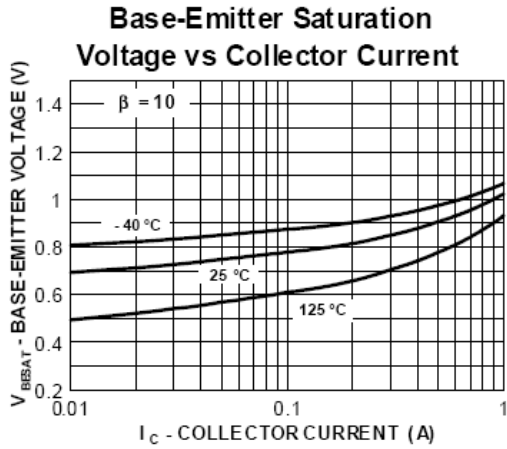
Note:

- 1) These ratings are based on a maximum junction temperature 150°C
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations
- 3) *Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 1.0\%$

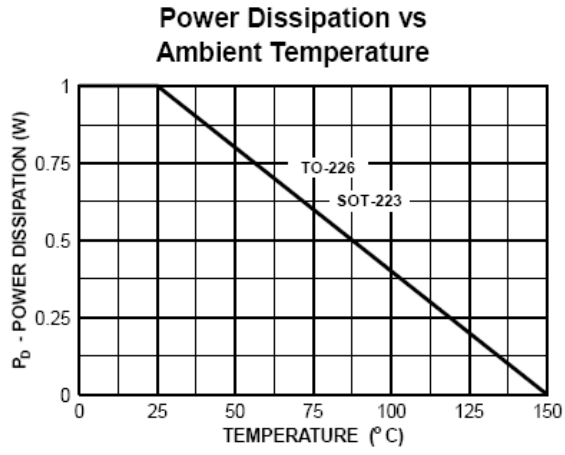
Typical Characteristics



Typical Characteristics (continued)



Typical Characteristics (continued)



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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

Rev. I17

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MPSW01

NPN General Purpose Amplifier

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Features

- This device is designed for general purpose medium power amplifiers
- Sourced from process 37

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Product status/pricing/packageing

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BUY

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Product	Product status	Pb-free Status	Pricing*	Package type	Leads	Packing method	Package Marking Convention**
MPSW01	Full Production	Full Production	\$0.179	TO-226	3	BULK	Line 1: \$Y (Fairchild logo) &Z (Asm. Plant Code) &3 (3-Digit Date Code) Line 2: MPS Line 3: W01
MPSW01_D27Z	Full Production	Full Production	N/A	TO-226	3	TAPE REEL	Line 1: \$Y (Fairchild logo) &Z (Asm. Plant Code) &3 (3-Digit Date Code) Line 2: MPS Line 3: W01
MPSW01_D74Z	Full Production	Full Production	N/A	TO-226	3	AMMO	Line 1: \$Y (Fairchild logo) &Z (Asm. Plant Code) &3 (3-Digit Date Code) Line 2: MPS Line 3: W01
MPSW01_D75Z	Full Production		N/A	TO-226	3	AMMO	Line 1: \$Y (Fairchild logo) &Z (Asm. Plant Code)

							&3 (3-Digit Date Code) Line 2: MPS Line 3: W01
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* Fairchild 1,000 piece Budgetary Pricing

** A sample button will appear if the part is available through Fairchild's on-line samples program. If there is no sample button, please contact a [Fairchild distributor](#) to obtain samples



Indicates product with Pb-free second-level interconnect. For more information [click here](#).

Package marking information for product MPSW01 is available. [Click here for more information](#).

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Models

Package & leads	Condition	Temperature range	Software version	Revision date
PSPICE				
TO-226-3	Electrical	25°C	N/A	N/A

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Qualification Support

Click on a product for detailed qualification data

Product
MPSW01
MPSW01_D27Z
MPSW01_D74Z
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