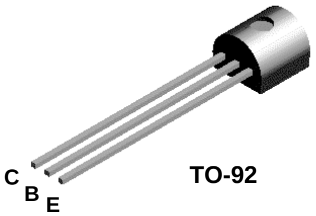
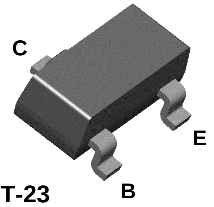
FAIRCHILD
SEMICONDUCTOR™

2N4126 MMBT4126



TO-92



SOT-23
Mark: ZF

PNP General Purpose Amplifier

This device is designed for general purpose amplifier and switching applications at collector currents to 10 µA as a switch and to 100 mA as an amplifier.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	25	V
V_{CBO}	Collector-Base Voltage	25	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Collector Current - Continuous	200	mA
T_J, T_{stg}	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.
3) All voltages (V) and currents (A) are negative polarity for PNP transistors.

Thermal Characteristics

TA= 25°C unless otherwise noted

Symbol	Characteristic	Max		Units
		2N4126	***MMBT4126**	
P_D	Total Device Dissipation Derate above 25°C	625 5.0	350 2.8	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3		°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	357	°C/W

*Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06."

PNP General Purpose Amplifier
(continued)

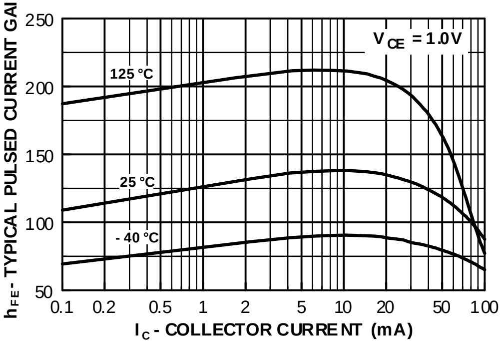
Electrical Characteristics
TA = 25°C unless otherwise noted

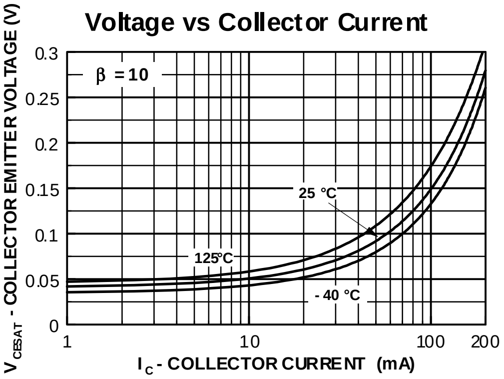
Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C = 1.0 mA, I_B = 0	25		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 10 μA, I_E = 0	25		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_C = 10 μA, I_C = 0	4.0		V
I_{CBO}	Collector Cutoff Current	V_{CB} = 20 V, I_E = 0		50	nA
I_{EBO}	Emitter Cutoff Current	V_{EB} = 3.0 V, I_C = 0		50	nA
ON CHARACTERISTICS*					
h_{FE}	DC Current Gain	I_C = 2.0 mA, V_{CE} = 1.0 V I_C = 50 mA, V_{CE} = 1.0 V	120 60	360	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 50 mA, I_B = 5.0 mA		0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = 50 mA, I_B = 5.0 mA		0.95	V
SMALL SIGNAL CHARACTERISTICS					
f_T	Current Gain - Bandwidth Product	I_C = 10 mA, V_{CE} = 20 V, f = 100 MHz	250		MHz
C_{ibo}	Input Capacitance	V_{EB} = 0.5 V, I_C = 0, f = 1.0 MHz		10	pF
C_{cb}	Collector-Base Capcitance	V_{CB} = 5.0 V, I_E = 0, f = 100 kHz		4.5	pF
h_{fe}	Small-Signal Current Gain	I_C = 2.0 mA, V_{CE} = 10 V, f = 1.0 kHz	120	480	
NF	Noise Figure	I_C = 100 μA, V_{CE} = 5.0 V, R_S=1.0 kΩ, f=10 Hz to 15.7 kHz		4.0	dB

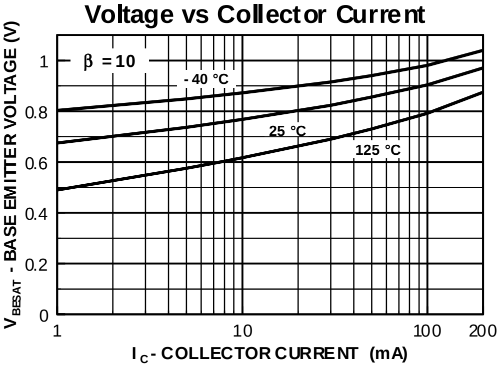
*Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%

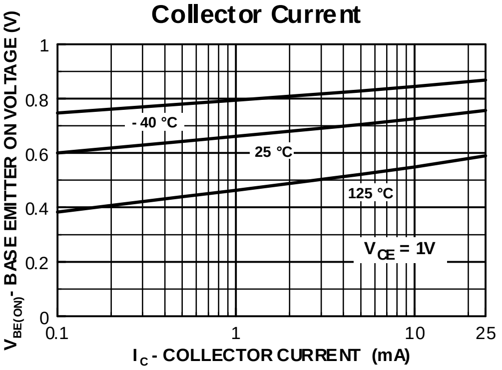
NOTE: All voltages (V) and currents (A) are negative polarity for PNP transistors.

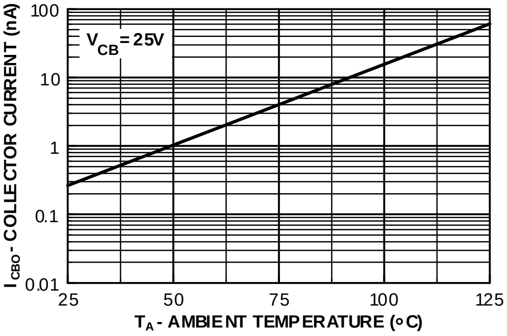
Typical Characteristics

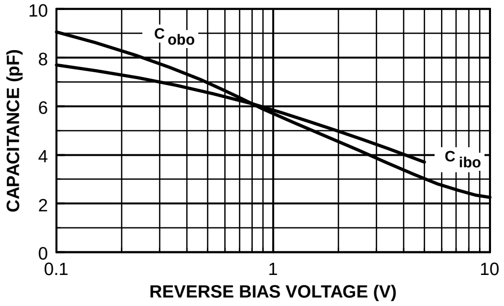

Typical Pulsed Current Gain vs Collector Current


Collector-Emitter Saturation Voltage vs Collector Current


Base-Emitter Saturation Voltage vs Collector Current

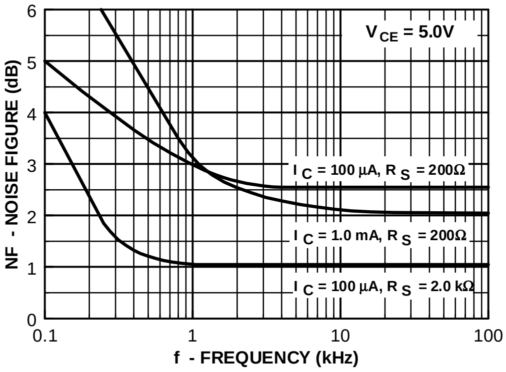

Base Emitter ON Voltage vs Collector Current


Collector-Cutoff Current vs Ambient Temperature

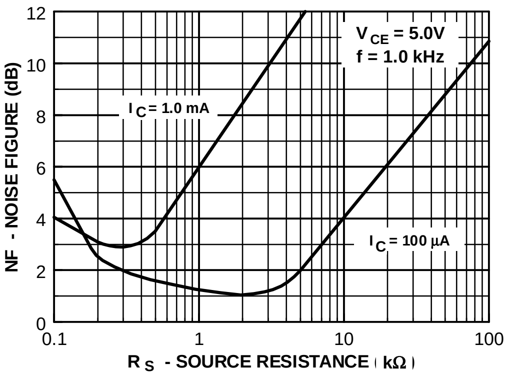

Common-Base Open Circuit Input and Output Capacitance vs Reverse Bias Voltage

Typical Characteristics (continued)

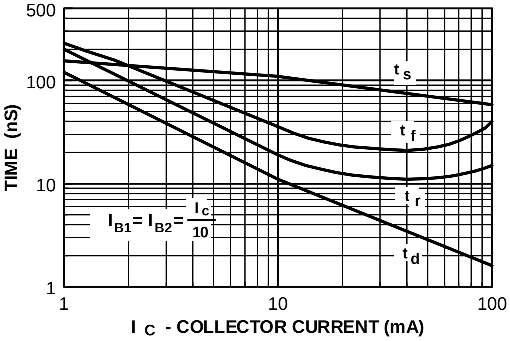
Noise Figure vs Frequency



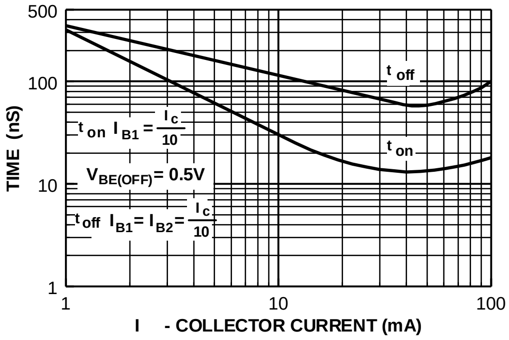
Noise Figure vs Source Resistance



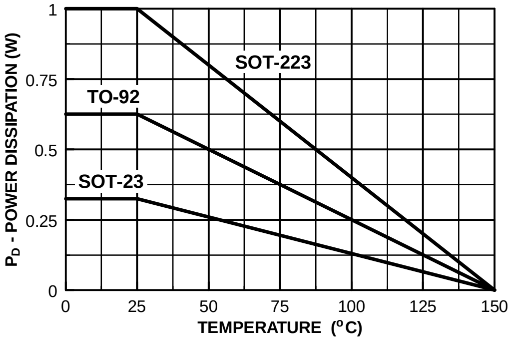
Switching Times vs Collector Current



Turn On and Turn Off Times vs Collector Current

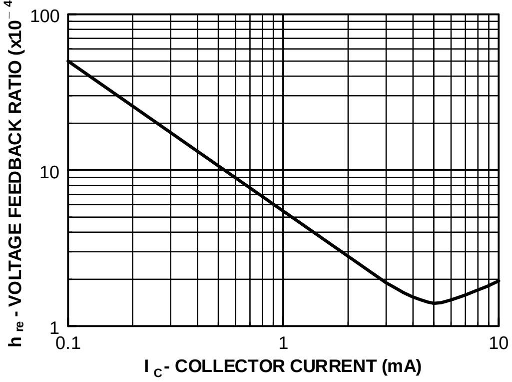


Power Dissipation vs Ambient Temperature

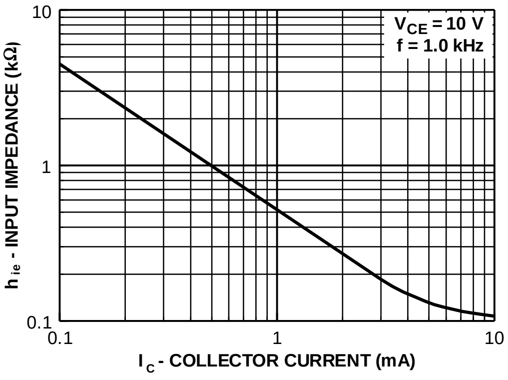


Typical Characteristics (continued)

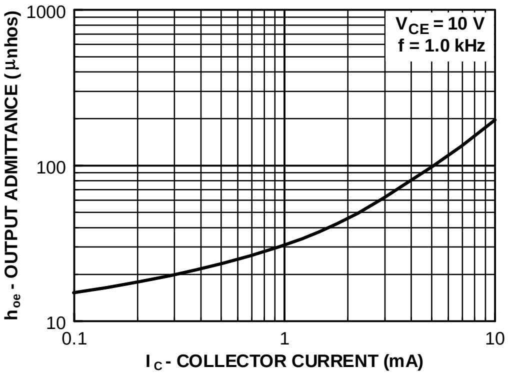
Voltage Feedback Ratio



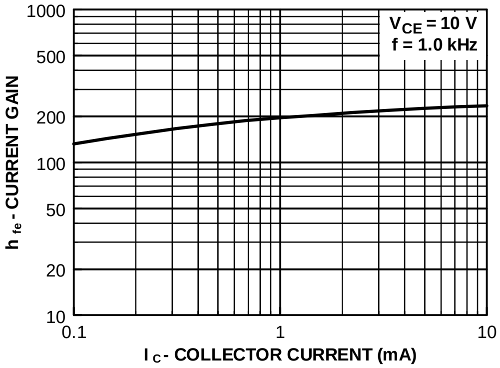
Input Impedance



Output Admittance



Current Gain



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