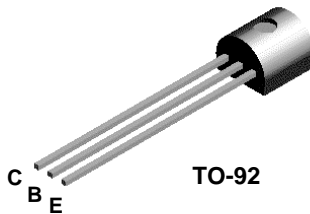
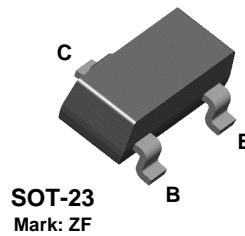


## 2N4126



## MMBT4126



### PNP General Purpose Amplifier

This device is designed for general purpose amplifier and switching applications at collector currents to 10  $\mu$ A 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	625	350	mW
	Derate above 25°C	5.0	2.8	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)

2N4126 / MMBT4126

### Electrical Characteristics TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
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#### OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 1.0 \text{ mA}, I_B = 0$	25		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10 \text{ } \mu\text{A}, I_E = 0$	25		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_C = 10 \text{ } \mu\text{A}, I_C = 0$	4.0		V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 20 \text{ V}, I_E = 0$		50	nA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 3.0 \text{ V}, I_C = 0$		50	nA

#### ON CHARACTERISTICS\*

$h_{FE}$	DC Current Gain	$I_C = 2.0 \text{ mA}, V_{CE} = 1.0 \text{ V}$ $I_C = 50 \text{ mA}, V_{CE} = 1.0 \text{ V}$	120 60	360	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$		0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$		0.95	V

#### SMALL SIGNAL CHARACTERISTICS

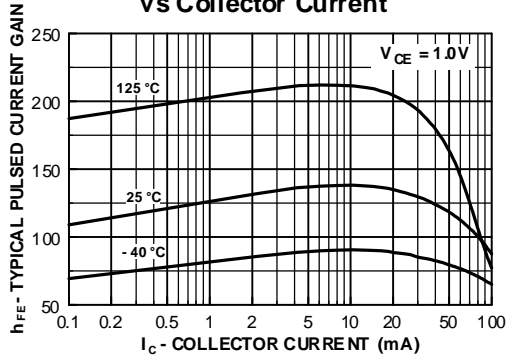
$f_T$	Current Gain - Bandwidth Product	$I_C = 10 \text{ mA}, V_{CE} = 20 \text{ V},$ $f = 100 \text{ MHz}$	250		MHz
$C_{ibo}$	Input Capacitance	$V_{EB} = 0.5 \text{ V}, I_C = 0,$ $f = 1.0 \text{ MHz}$		10	pF
$C_{cb}$	Collector-Base Capacitance	$V_{CB} = 5.0 \text{ V}, I_E = 0,$ $f = 100 \text{ kHz}$		4.5	pF
$h_{fe}$	Small-Signal Current Gain	$I_C = 2.0 \text{ mA}, V_{CE} = 10 \text{ V},$ $f = 1.0 \text{ kHz}$	120	480	
NF	Noise Figure	$I_C = 100 \text{ } \mu\text{A}, V_{CE} = 5.0 \text{ V},$ $R_S = 1.0 \text{ k}\Omega, f = 10 \text{ Hz to } 15.7 \text{ kHz}$		4.0	dB

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

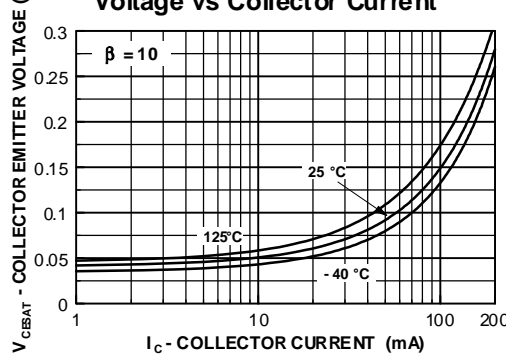
**NOTE:** All voltages (V) and currents (A) are negative polarity for PNP transistors.

Typical Characteristics

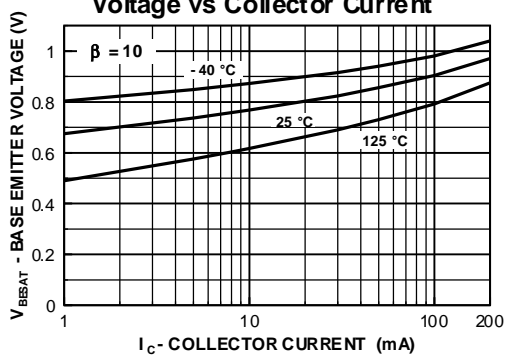
Typical Pulsed Current Gain vs Collector Current



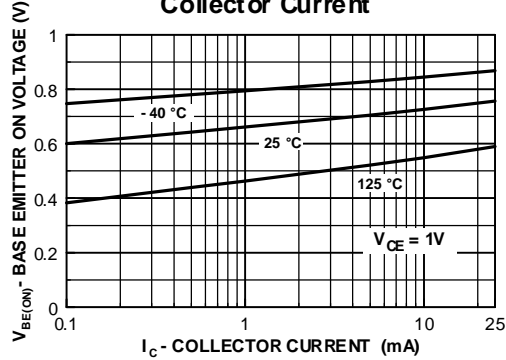
Collector-Emitter Saturation Voltage vs Collector Current



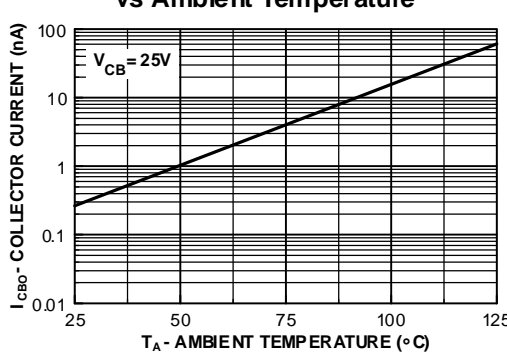
Base-Emitter Saturation Voltage vs Collector Current



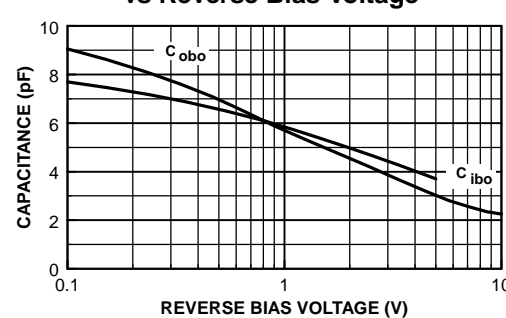
Base Emitter ON Voltage vs Collector Current



Collector-Cutoff Current vs Ambient Temperature



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



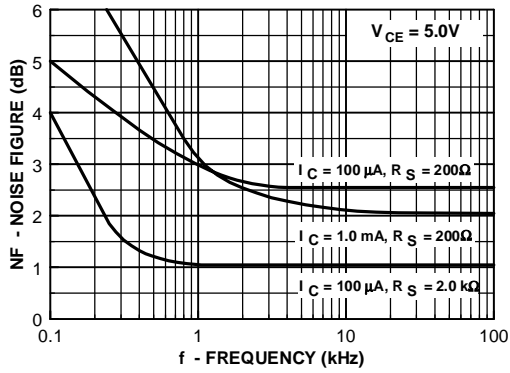
# PNP General Purpose Amplifier

(continued)

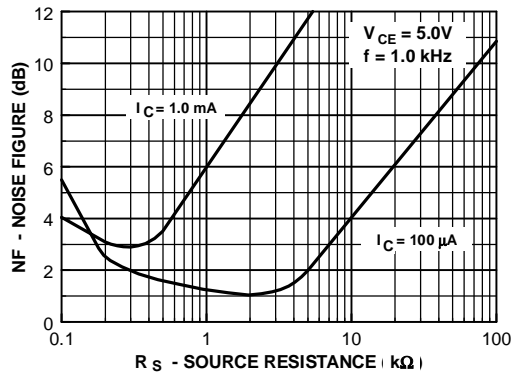
2N4126 / MMBT4126

## Typical Characteristics (continued)

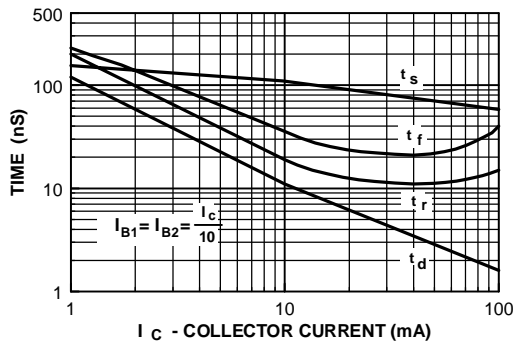
### Noise Figure vs Frequency



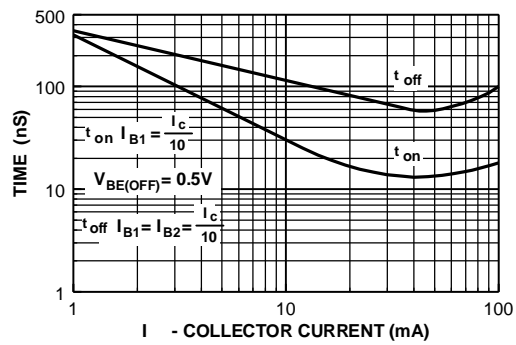
### Noise Figure vs Source Resistance



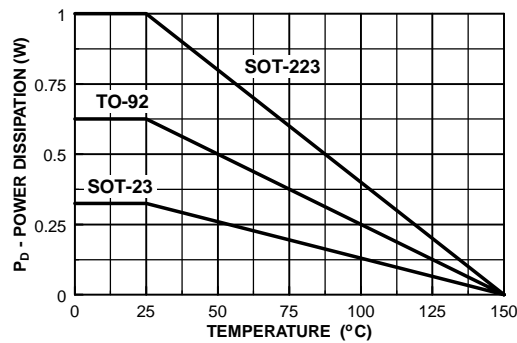
### Switching Times vs Collector Current



### Turn On and Turn Off Times vs Collector Current

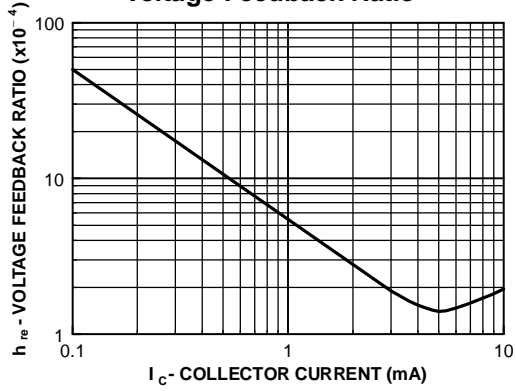


### Power Dissipation vs Ambient Temperature

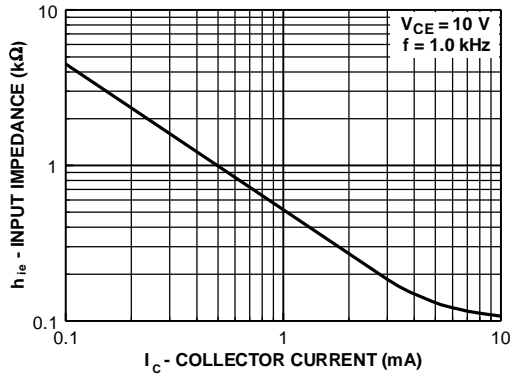


Typical Characteristics (continued)

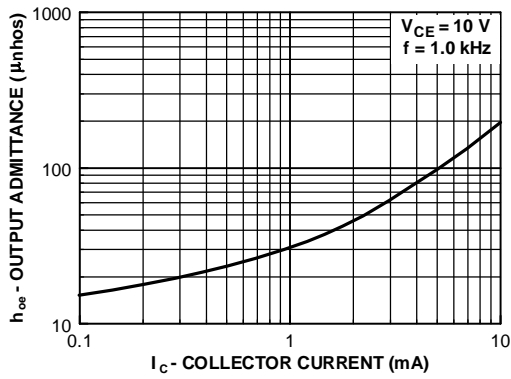
Voltage Feedback Ratio



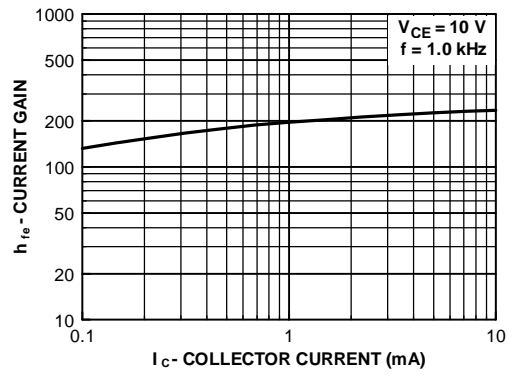
Input Impedance



Output Admittance



Current Gain



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DOME™	ISOPLANAR™	Quiet Series™	
E <sup>2</sup> CMOS™	MICROWIRE™	SILENT SWITCHER®	
EnSigna™	OPTOLOGIC™	SMART START™	
FACT™	OPTOPLANAR™	SuperSOT™-3	
FACT Quiet Series™	PACMAN™	SuperSOT™-6	
FAST®	POP™	SuperSOT™-8	

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