

Discrete POWER & Signal **Technologies**

2N4126

MMBT4126





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. Sourced from Process 66. See 2N3906 for characteristics.

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.

Thermal Characteristics

TA= 25°C unless otherwise noted

Symbol	Characteristic	Max		x Units	
		2N4126	*MMBT4126		
P _D	Total Device Dissipation Derate above 25°C	625 5.0	350 2.8	mW mW/°C	
R _{UC}	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."

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.

PNP General Purpose Amplifier (continued)

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TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHA	RACTERISTICS				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 1.0 \text{ mA}, I_B = 0$	25		V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	$I_{\rm C} = 10 \ \mu \text{A}, I_{\rm E} = 0$	25		V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	$I_C = 10 \mu A, I_C = 0$	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 CHAF	RACTERISTICS*				
	RACTERISTICS*	$I_{C} = 2.0 \text{ mA}, V_{CE} = 1.0 \text{ V}$	120	360	<u> </u>
h _{FE}	DC Current Gain	$I_C = 50 \text{ mA}, V_{CE} = 1.0 \text{ V}$	120 60		V
h _{FE}		. 52		360 0.4 0.95	V
h _{FE}	DC Current Gain Collector-Emitter Saturation Voltage	I _C = 50 mA, V _{CE} = 1.0 V I _C = 50 mA, I _B = 5.0 mA		0.4	
$\begin{array}{c} h_{\text{FE}} \\ \\ V_{\text{CE(sat)}} \\ V_{\text{BE(sat)}} \end{array}$	DC Current Gain Collector-Emitter Saturation Voltage	I _C = 50 mA, V _{CE} = 1.0 V I _C = 50 mA, I _B = 5.0 mA		0.4	

ΙŢ	Current Gain - Dandwidth Froduct	$I_C = 10 \text{ IIIA}, V_{CE} = 20 \text{ V},$	230		IVII IZ
		f = 100 MHz			
Cibo	Input Capacitance	$V_{EB} = 0.5 \text{ V}, I_{C} = 0,$		10	pF
		f = 1.0 MHz			
C _{cb}	Collector-Base Capcitance	$V_{CB} = 5.0 \text{ V}, I_{E} = 0,$		4.5	pF
	-	f = 100 kHz			
	Carall Cianal Compant Cala	1 00 1 1/ 40 1/	400	400	

 $I_C = 2.0$ mA, $V_{CE} = 10$ V, f = 1.0 kHz Small-Signal Current Gain 120 480 h_{fe} I_C = 100 μA, V_{CE} = 5.0 V, R_S =1.0 kΩ, f=10 Hz to 15.7 kHz NF Noise Figure 4.0 dB

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