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.

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
		2N4126	*MMBT4126	
P _D	Total Device Dissipation Derate above 25°C	625 5.0	350 2.8	mW mW/°C
R _{θJC}	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)

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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 $\leq 300~\mu\text{s},~\text{Duty Cycle} \leq 2.0\%$