



September 2007

# TN5320A

## PNP High Voltage Amplifier

- This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 1.5 A.
- Sourced from Process 34.



TO-226

1. Collector 2. Base 3. Emitter

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	75	V
$V_{CEO}$	Collector-Emitter Voltage	75	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current - Continuous	500	mA
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range	-55 ~ +150	$^{\circ}\text{C}$

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

#### NOTES:

- 1) These rating are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady 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 $T_a=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Max.	Units
$P_D$	Total Device Dissipation	1.0	mW
	Derate above $25^{\circ}\text{C}$	8.0	mW/ $^{\circ}\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	$^{\circ}\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	50	$^{\circ}\text{C}/\text{W}$

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

Symbol	Parameter	Test Condition	Min.	Max.	Units
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**Off Characteristics**

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 100\text{mA}$ , $I_B = 0$	75		V
$I_{CEX}$	Collector Cut-off Current	$V_{CE} = 100\text{ V}$ , $V_{BE} = 1.5\text{ V (rev.)}$		100	$\mu\text{A}$
		$V_{CE} = 70\text{ V}$ , $V_{BE} = 1.5\text{ V (rev.)}$ $T = +150^{\circ}\text{C}$		5	mA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 7.0\text{ V}$		100	$\mu\text{A}$

**On Characteristics**

$h_{FE}$	DC Current Gain	$V_{CE} = 4.0\text{ V}$ , $I_C = 0.5\text{ mA}$ , $V_{CE} = 2.0\text{ V}$ , $I_C = 1.0\text{ mA}$ ,	30 10	130	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$		0.5	V
$V_{BE(on)}$	Base-Emitter Voltage	$V_{CE} = 4.0\text{ V}$ , $I_C = 500\text{ mA}$		1.1	V

\* Pulse Test: Pulse Width  $\leq 300\text{ms}$ , Duty Cycle = 2%**NOTES:**

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



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Rev. I30