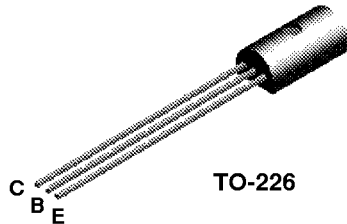


TN5415A



PNP High Voltage Amplifier

This device is designed for use as high voltage drivers requiring collector currents to 100 mA. Sourced from Process 76. See MPSA92 for characteristics.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CEO}	Collector-Emitter Voltage	200	V
V _{CBO}	Collector-Base Voltage	200	V
V _{EBO}	Emitter-Base Voltage	4.0	V
I _C	Collector Current - Continuous	100	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.

Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		TN5415A	
P _D	Total Device Dissipation Derate above 25°C	1.0	W
		8.0	mW/°C
R _{θJC}	Thermal Resistance, Junction to Case	125	°C/W
R _{θJA}	Thermal Resistance, Junction to Ambient	50	°C/W

PNP High Voltage Amplifier

(continued)

TN5415A

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*	$I_C = 50 \text{ mA}, I_B = 0$	200		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100 \text{ } \mu\text{A}, I_E = 0$	200		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100 \text{ } \mu\text{A}, I_C = 0$	4.0		V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 175 \text{ V}$		50	μA
I_{CEX}	Collector Cutoff Current	$V_{CE} = 200 \text{ V}, V_{BE} = 1.5 \text{ V (rev)}$		50	μA
I_{CEO}	Collector Cutoff Current	$V_{CE} = 150 \text{ V}$		50	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 4.0 \text{ V}, I_C = 0$		20	μA

ON CHARACTERISTICS*

h_{FE}	DC Current Gain	$V_{CE} = 10 \text{ V}, I_C = 50 \text{ mA}$	30	150	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$		2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 50 \text{ mA}, V_{CE} = 10 \text{ V}$		1.5	V

SMALL SIGNAL CHARACTERISTICS

C_{ob}	Output Capacitance	$V_{CB} = 10 \text{ V}, f = 1.0 \text{ MHz}$		15	pF
C_{ib}	Input Capacitance	$V_{EB} = 5.0 \text{ V}, f = 1.0 \text{ MHz}$		75	pF
h_{fe}	Small-Signal Current Gain	$I_C = 5.0 \text{ mA}, V_{CE} = 10 \text{ V},$ $f = 5.0 \text{ MHz}$ $I_C = 5.0 \text{ mA}, V_{CE} = 10 \text{ V},$ $f = 1.0 \text{ kHz}$	3.0 25		
$R_{\theta(hie)}$	Input Resistance	$V_{CE} = 10 \text{ V}, I_C = 5.0 \text{ mA}$		300	Ω
IS / I_b	Safe Operating Area	$V_{CE} = 100 \text{ V}, t = 100 \text{ mS}$	100		mA

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