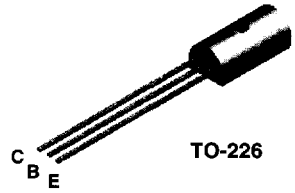
FAIRCHILD
SEMICONDUCTOR TM

TN3467A



TO-226

PNP Switching Transistor

This device is designed for high speed saturated switching applications at currents to 800 mA. Sourced from Process 70.

Absolute Maximum Ratings* TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	40	V
V_{CBO}	Collector-Base Voltage	40	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current - Continuous	1.2	A
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
		TN3467A	
P_D	Total Device Dissipation Derate above 25°C	1.0 8.0	W mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	50	°C/W

PNP Switching Transistor
(continued)

Electrical Characteristics
TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	I_C = 10 mA, I_B = 0	40		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 10 µA, I_E = 0	40		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10 µA, I_C = 0	5.0		V
I_{BEV}	Base-Cutoff Current	V_{CE} = 30 V, V_{BE} = 3.0 V		120	nA
I_{CEX}	Collector-Cutoff Current	V_{CE} = 30 V, V_{BE} = 3.0 V		100	nA
I_{CBO}	Collector-Cutoff Current	V_{CB} = 30 V, I_E = 0 V_{CB} = 30 V, I_E = 0, T_A = 150°C		0.01 15	µA µA
ON CHARACTERISTICS*					
h_{FE}	DC Current Gain	I_C = 150 mA, V_{CE} = 1.0 V I_C = 500 mA, V_{CE} = 1.0 V I_C = 1.0 A, V_{CE} = 5.0 V	40 40 40	 120	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 150 mA, I_B = 15 mA I_C = 500 mA, I_B = 50 mA I_C = 1.0 A, I_B = 100 mA		0.3 0.5 1.0	V V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = 150 mA, I_B = 15 mA I_C = 500 mA, I_B = 50 mA I_C = 1.0 A, I_B = 100 mA	 0.8	1.0 1.2 1.6	V V V
SMALL SIGNAL CHARACTERISTICS					
f_T	Current Gain-Bandwidth Product	I_C = 50 mA, V_{CE} = 10 V, f = 100 MHz	175		MHz
C_{obo}	Output Capacitance	V_{CB} = 10 V, I_E = 0, f = 1.0 kHz		25	pF
C_{ibo}	Input Capacitance	V_{BE} = 0.5 V, I_C = 0, f = 1.0 kHz		100	pF
SWITCHING CHARACTERISTICS					
t_d	Delay Time	V_{CC} = 30 V, V_{BE} = 2.0 V, I_C = 500 mA, I_{B1} = 50 mA		10	ns
t_r	Rise Time			30	ns
t_s	Storage Time	V_{CC} = 30 V, I_C = 500 mA, I_{B1} = I_{B2} = 50 mA		60	ns
t_f	Fall Time			30	ns

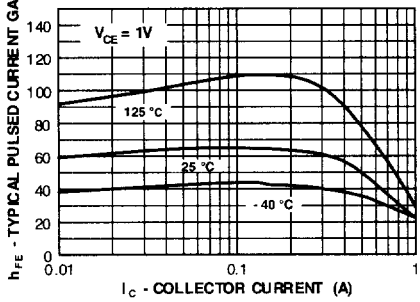
*Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 1.0%

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

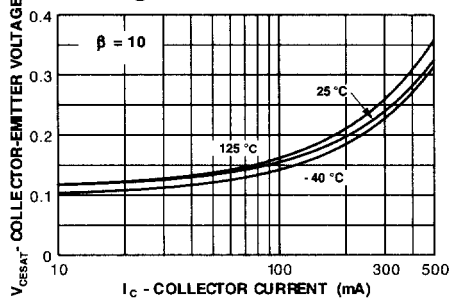
PNP Switching Transistor
(continued)

Typical Characteristics

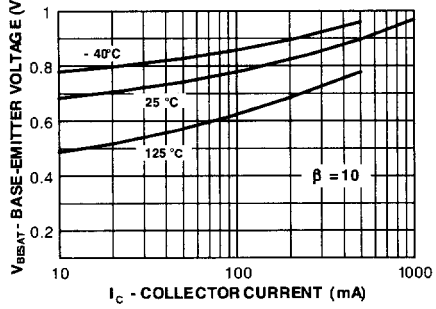
Typical Pulsed Current Gain vs Collector Current



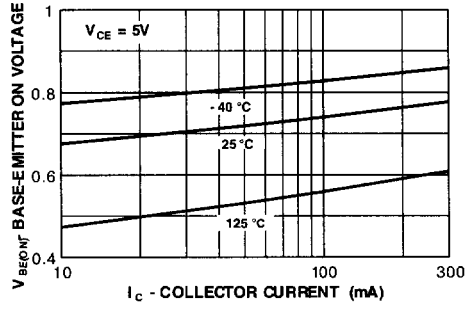
Collector-Emitter Saturation Voltage vs Collector Current



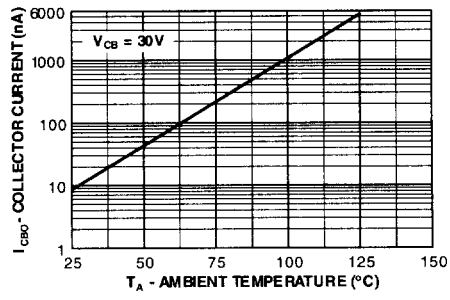
Base-Emitter Saturation Voltage vs Collector Current



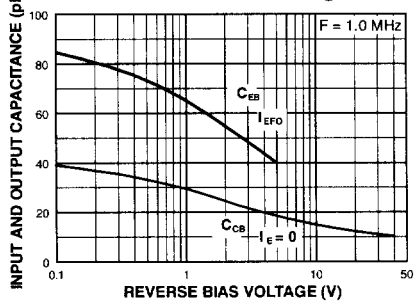
Base-Emitter ON Voltage vs Collector Current



Collector-Cutoff Current vs Ambient Temperature

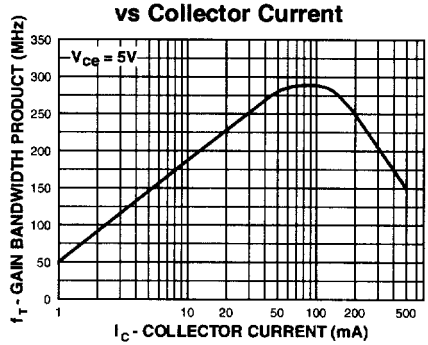


Input / Output Capacitance vs Reverse Bias Voltage

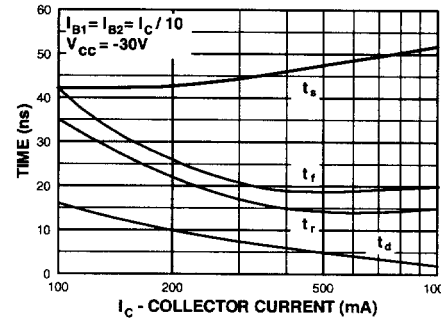


Typical Characteristics (continued)

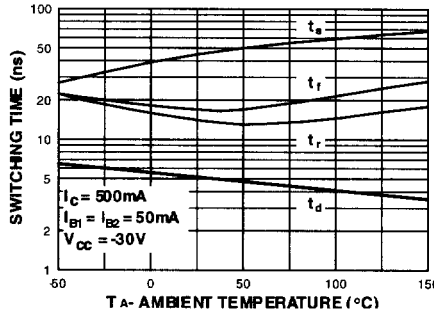
Gain Bandwidth Product vs Collector Current



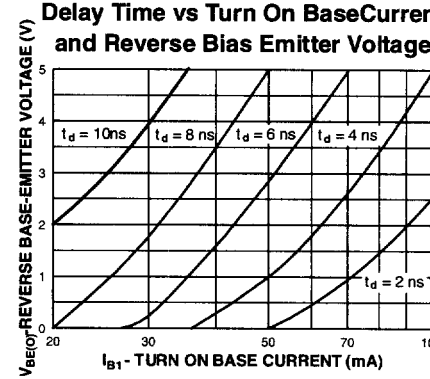
Switching Times vs Collector Current



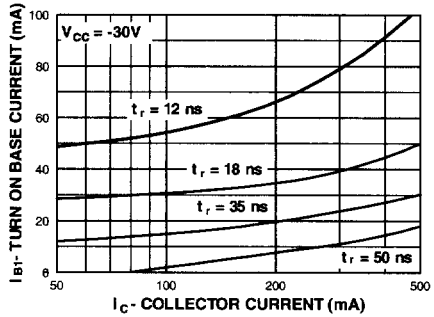
Switching Times vs Ambient Temperature



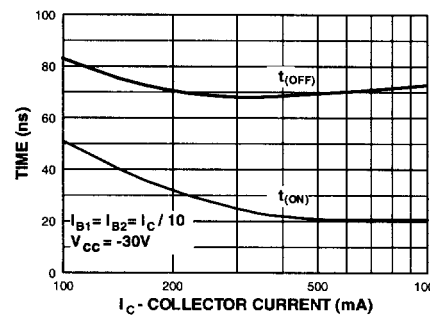
Delay Time vs Turn On BaseCurrent and Reverse Bias Emitter Voltage



Rise Time vs Collector Current and Turn On Base Current



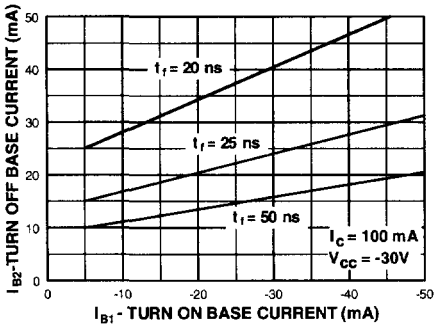
Turn On / Turn Off Times vs Collector Current



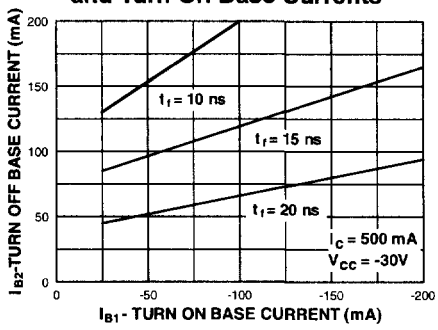
PNP Switching Transistor
(continued)

Typical Characteristics (continued)

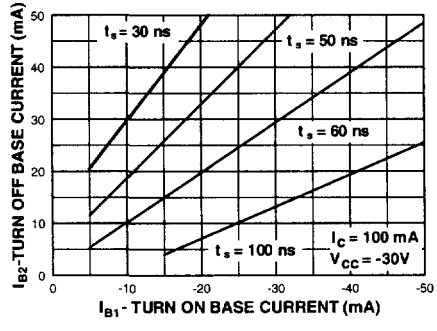
Fall Time vs Turn On and Turn Off Base Currents



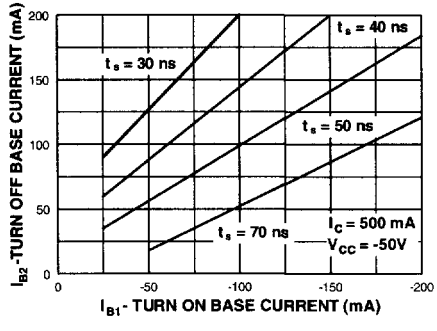
Fall Time vs Turn On and Turn Off Base Currents



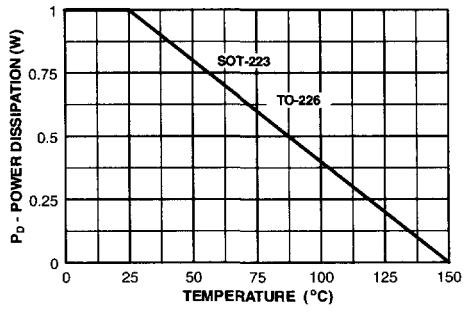
Storage Time vs Turn On and Turn Off Base Currents



Storage Time vs Turn On and Turn Off Base Currents



Power Dissipation vs Ambient Temperature



Test Circuits

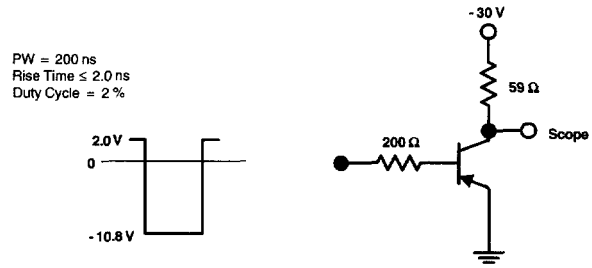


FIGURE 1: t_{ON} Equivalent Test Circuit

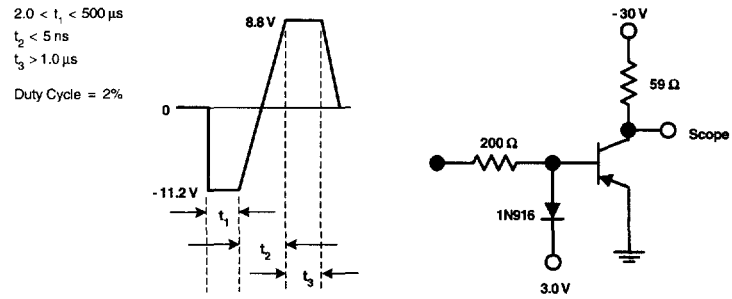


FIGURE 2: t_{OFF} Equivalent Test Circuit