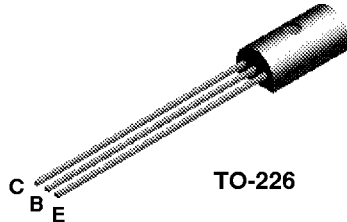
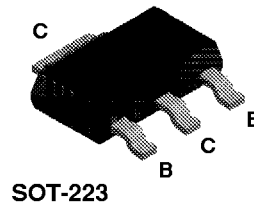


TN6717A



NZT6717



NPN General Purpose Amplifier

This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 1.0 A. Sourced from Process 39.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CEO}	Collector-Emitter Voltage	80	V
V _{CBO}	Collector-Base Voltage	80	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.

Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max		Units
		TN6717A	*NZT6717	
P _D	Total Device Dissipation Derate above 25°C	1.0	1.0	W
		8.0	8.0	mW/°C
R _{θJC}	Thermal Resistance, Junction to Case	50		°C/W
R _{θJA}	Thermal Resistance, Junction to Ambient	125	125	°C/W

* Device mounted on FR-4 PCB 36 mm X 18 mm X 1.5 mm; mounting pad for the collector lead min. 6 cm².

NPN General Purpose Amplifier

(continued)

TN6717A / NZT6717

Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	$I_C = 1.0 \text{ mA}, I_B = 0$	80		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100 \text{ } \mu\text{A}, I_E = 0$	80		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100 \text{ } \mu\text{A}, I_C = 0$	5.0		V
I_{CBO}	Collector-Cutoff Current	$V_{CB} = 60 \text{ V}, I_E = 0$		0.1	μA
I_{EBO}	Emitter-Cutoff Current	$V_{EB} = 5.0 \text{ V}, I_C = 0$		0.1	μA

ON CHARACTERISTICS*

h_{FE}	DC Current Gain	$I_C = 50 \text{ mA}, V_{CE} = 1.0 \text{ V}$ $I_C = 250 \text{ mA}, V_{CE} = 1.0 \text{ V}$	80 50	250	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 250 \text{ mA}, I_B = 100 \text{ mA}$		0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 250 \text{ mA}, V_{CE} = 1.0 \text{ V}$		1.2	V

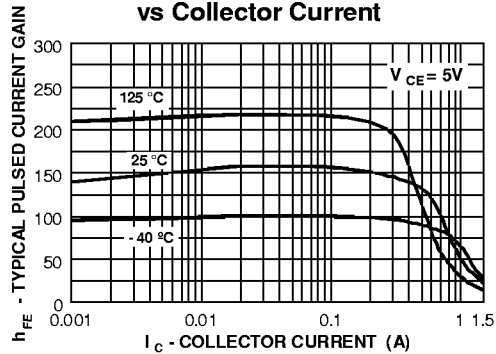
SMALL SIGNAL CHARACTERISTICS

h_{fe}	Small-Signal Current Gain	$I_C = 200 \text{ mA}, V_{CE} = 5.0 \text{ V},$ $f = 20 \text{ MHz}$	2.5	25	
C_{cb}	Collector-Base Capacitance	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$		30	pF

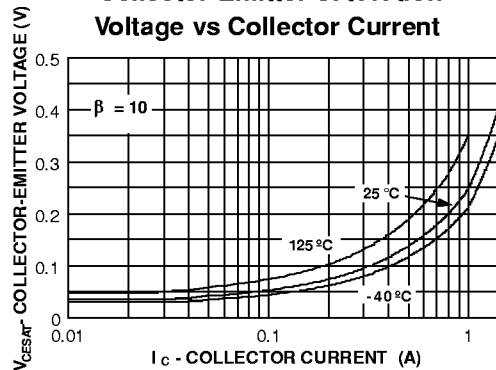
*Pulse Test: Pulse Width $\leq 300 \text{ } \mu\text{s}$, Duty Cycle $\leq 1.0\%$

Typical Characteristics

Typical Pulsed Current Gain vs Collector Current



Collector-Emitter Saturation Voltage vs Collector Current



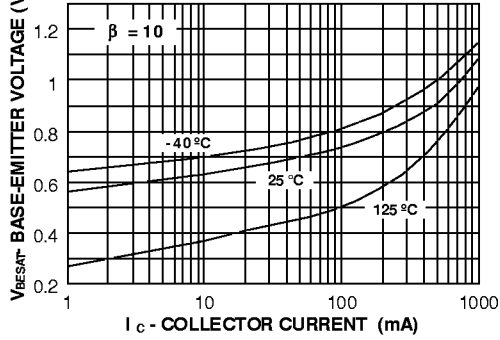
NPN General Purpose Amplifier

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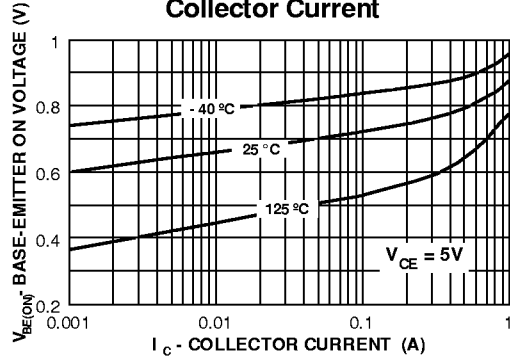
TN6717A / NZT6717

Typical Characteristics (continued)

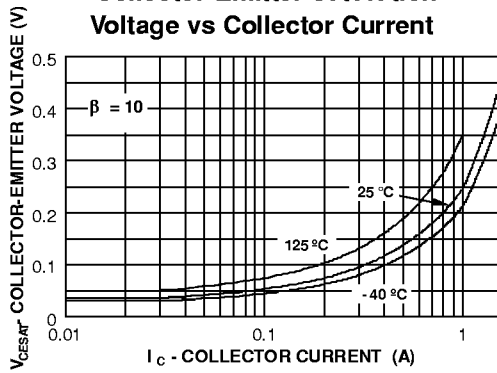
Base-Emitter Saturation Voltage vs Collector Current



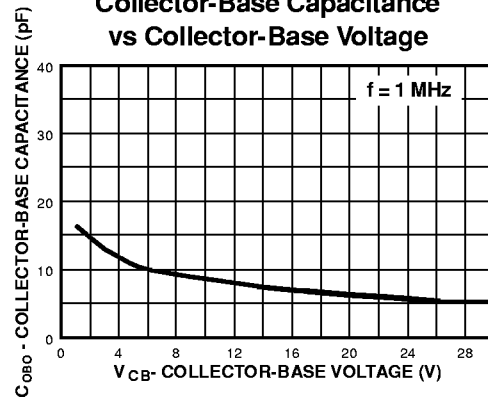
Base-Emitter ON Voltage vs Collector Current



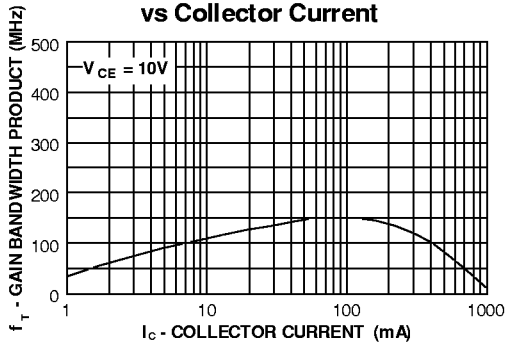
Collector-Emitter Saturation Voltage vs Collector Current



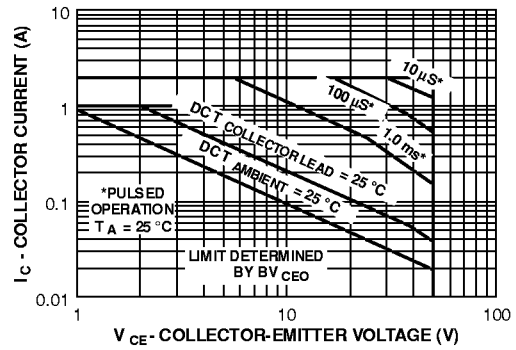
Collector-Base Capacitance vs Collector-Base Voltage



Gain Bandwidth Product vs Collector Current



Safe Operating Area TO-226



Typical Characteristics (continued)

