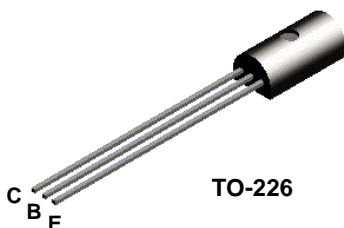
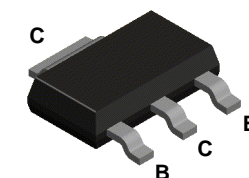


TN6715A



TO-226

NZT6715



SOT-223

NPN General Purpose Amplifier

This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 1.2 A. Sourced from Process 38.

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 | 50 | V |
| V _{EBO} | Emitter-Base Voltage | 5.0 | V |
| I _C | Collector Current - Continuous | 1.5 | 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 |
|------------------|---|------------|------------|------------|
| | | TN6715A | *NZT6715 | |
| P _D | Total Device Dissipation Derate above 25°C | 1.0 8.0 | 1.0 8.0 | W 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)

TN6715A / NZT6715

Electrical Characteristics

TA = 25°C unless otherwise noted

| Symbol | Parameter | Test Conditions | Min | Max | Units |
|---------------------|--------------------------------------|--|-----|-----|---------------|
| OFF CHARACTERISTICS | | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage* | $I_C = 10\text{ mA}$, $I_B = 0$ | 40 | | V |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C = 100\text{ }\mu\text{A}$, $I_E = 0$ | 50 | | 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 | $V_{CB} = 50\text{ V}$, $I_E = 0$ | | 0.1 | μA |
| I_{EBO} | Emitter-Cutoff Current | $V_{EB} = 5.0\text{ V}$, $I_C = 0$ | | 0.1 | μA |

ON CHARACTERISTICS

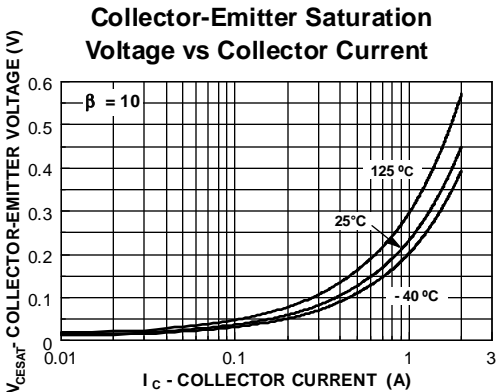
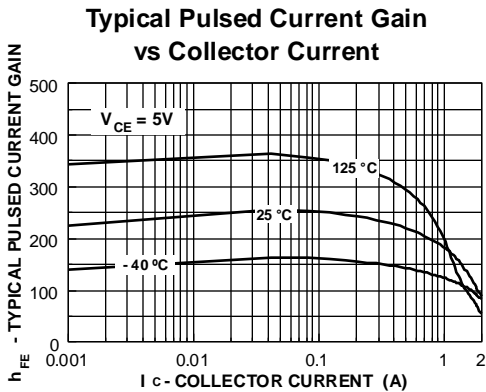
| | | | | | |
|---------------|--------------------------------------|---|----------------|-----|---|
| h_{FE} | DC Current Gain | $I_C = 10\text{ mA}$, $V_{CE} = 1.0\text{ V}$ $I_C = 100\text{ mA}$, $V_{CE} = 1.0\text{ V}$ $I_C = 1.0\text{ A}$, $V_{CE} = 1.0\text{ V}$ | 55 60 50 | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 1.0\text{ A}$, $I_B = 100\text{ mA}$ | | 0.5 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C = 1.0\text{ A}$, $V_{CE} = 1.0\text{ V}$ | | 1.2 | V |

SMALL SIGNAL CHARACTERISTICS

| | | | | | |
|----------|----------------------------|--|-----|----|----|
| h_{fe} | Small-Signal Current Gain | $I_C = 50\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 20\text{ MHz}$ | 2.5 | 20 | |
| 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 $\leq 1.0\%$

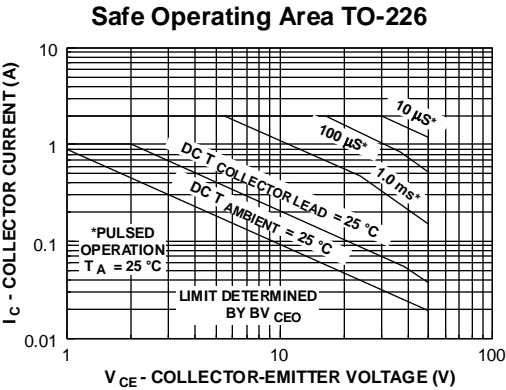
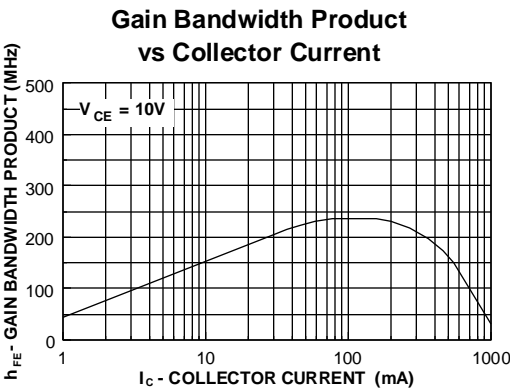
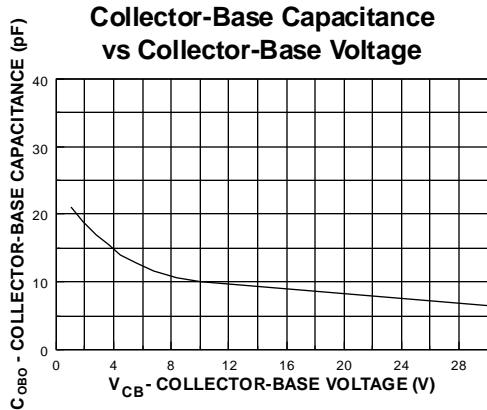
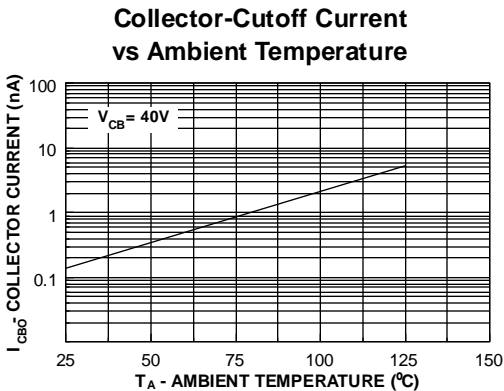
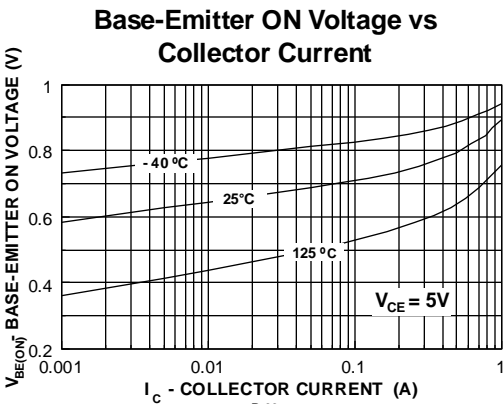
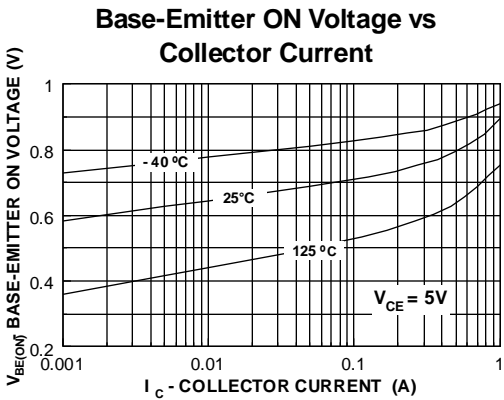
Typical Characteristics



NPN General Purpose Amplifier
(continued)

TN6715A / NZT6715

Typical Characteristics (continued)



Typical Characteristics (continued)

