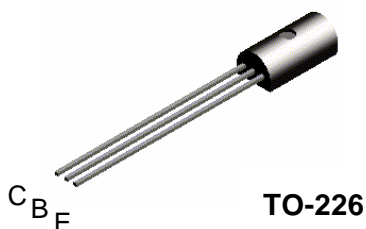


# TN6716A



TO-226

## NPN General Purpose Amplifier

This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 1.2A. Sourced from Process 38. See TN6715A for characteristics.

### Absolute Maximum Ratings\*

T<sub>A</sub> = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CEO</sub>	Collector-Emitter Voltage	60	V
V <sub>CBO</sub>	Collector-Base Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current - Continuous	2	A
T <sub>J, Tstg</sub>	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°C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Thermal Characteristics

T<sub>A</sub> = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		T <sub>A</sub> =25°C	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	1	W
		8	
R <sub>θJC</sub>	Thermal Resistance, Junction to Case	50	°C/W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	125	°C/W

**NPN General Purpose Amplifier**

(continued)

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

Symbol	Parameter	Test Conditions	Min	Max	Units
<b>OFF CHARACTERISTICS</b>					
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 1\text{ mA}$	60		V
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\ \mu\text{A}$	60		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 1\text{ mA}$	5		V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 40\text{ V}$		100	nA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 5\text{ V}$		10	$\mu\text{A}$
<b>ON CHARACTERISTICS</b>					
$h_{FE}$	DC Current Gain	$I_C = 50\text{ mA}, V_{CE} = 1\text{ V}$ $I_C = 250\text{ mA}, V_{CE} = 1\text{ V}$ $I_C = 500\text{ mA}, V_{CE} = 1\text{ V}$	80 50 20	250	-
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 250\text{ mA}, I_B = 10\text{ mA}$ $I_C = 250\text{ mA}, I_B = 25\text{ mA}$		0.5 0.35	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 250\text{ mA}, V_{CE} = 1.0\text{ V}$		1.2	V
<b>SMALL SIGNAL CHARACTERISTICS</b>					
$C_{cb}$	Output Capacitance	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		30	pF
$h_{fe}$	Small Signal Current Gain	$I_C = 200\text{ mA}, V_{CE} = 5\text{ V}, f = 20\text{ MHz}$	2.5	25	MHz

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

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