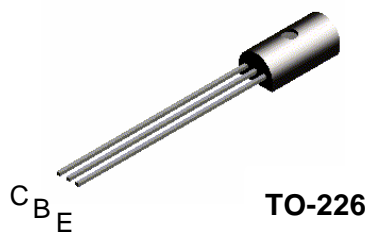


## TN6716A



### 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\*

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

Symbol	Parameter	Value	Units
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current - Continuous	2	A
$T_J, T_{stg}$	Operating and Storage Junction Temperature Range	-55 to +150	$^\circ\text{C}$

\*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  $150^\circ\text{C}$ .
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

#### Thermal Characteristics

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

Symbol	Characteristic	Max	Units
		$T_A = 25^\circ\text{C}$	
$P_D$	Total Device Dissipation Derate above $25^\circ\text{C}$	1	W
		8	
$R_{\theta JC}$	Thermal Resistance, Junction to Case	50	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	125	$^\circ\text{C}/\text{W}$

**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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