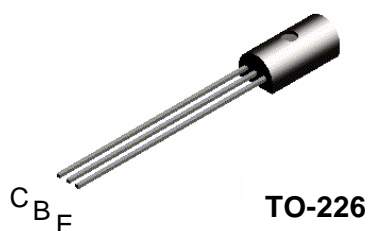




TN6716A



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°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°C	1	W
		8	mW/ $^\circ\text{C}$
$R_{\theta JC}$	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
OFF CHARACTERISTICS					
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 1\text{ mA}$	60		V
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 100\text{ }\mu\text{A}$	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	μA
ON CHARACTERISTICS					
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
SMALL SIGNAL CHARACTERISTICS					
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 $\leq 300\text{ }\mu\text{s}$, Duty Cycle $\leq 1.0\%$

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