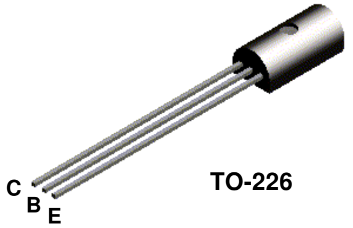

Chipsmall
深圳市津利帝科技有限公司
Geelead Technology Limited
Chipsmall
采购部

FAIRCHILD
SEMICONDUCTOR ™

Discrete POWER & Signal
Technologies

TN6705A



NPN General Purpose Amplifier

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

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	45	V
V_{CBO}	Collector-Base Voltage	60	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
		TN6705a	
P_D	Total Device Dissipation Derate above 25°C	1.0 8.0	W mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	50	°C/W

Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	$I_C = 10$ mA, $I_B = 0$	45		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100$ mA, $I_E = 0$	60		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 1.0$ mA, $I_C = 0$	5.0		V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 60$ V, $I_E = 0$		0.1	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5.0$ V, $I_C = 0$		0.1	μA
ON CHARACTERISTICS*					
h_{FE}	DC Current Gain	$V_{CE} = 2.0$ V, $I_C = 50$ mA $V_{CE} = 2.0$ V, $I_C = 250$ mA $V_{CE} = 2.0$ V, $I_C = 500$ mA	40 40 25	250	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 500$ mA, $I_B = 50$ mA $I_C = 1.0$ A, $I_B = 100$ mA		0.5 1.0	V V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = 2.0$ V, $I_C = 1.0$ A		1.5	V
SMALL SIGNAL CHARACTERISTICS					
C_{cb}	Collector-Base Capacitance	$V_{CB} = 10$ V, f = 1.0 MHz		30	pF
h_{fe}	Small-Signal Current Gain	$I_C = 50$ mA, $V_{CE} = 5.0$ V, f = 20 MHz	2.5	20	

*Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%