

FPN330 FPN330A



NPN Low Saturation Transistor

These devices are designed for high current gain and low saturation voltage with collector currents up to 3.0 A continuous. Sourced from Process NB.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CEO}	Collector-Emitter Voltage	30	V
V _{CBO}	Collector-Base Voltage	50	V
V _{EBO}	Emitter-Base Voltage	5.0	V
I _C	Collector Current - Continuous	3.0	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
		FPN330 / FPN330A	
P _D	Total Device Dissipation	1.0	W
R _{θJC}	Thermal Resistance, Junction to Case	50	°C/W
R _{θJA}	Thermal Resistance, Junction to Ambient	125	°C/W

NPN Low Saturation Transistor

(continued)

FPN330 / FPN330A

Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
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OFF CHARACTERISTICS

BV _{CEO}	Collector-Emitter Breakdown Voltage	I _C = 10 mA, I _B = 0	30		V
BV _{CBO}	Collector-Base Breakdown Voltage	I _C = 100 μA, I _E = 0	50		V
BV _{EBO}	Emitter-Base Breakdown Voltage	I _E = 100 μA, I _C = 0	5.0		V
I _{CBO}	Collector Cutoff Current	V _{CB} = 30 V, I _E = 0		100	nA
		V _{CB} = 30 V, I _E = 0, T _A = 100°C		10	μA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 4.0 V, I _C = 0		100	nA

ON CHARACTERISTICS*

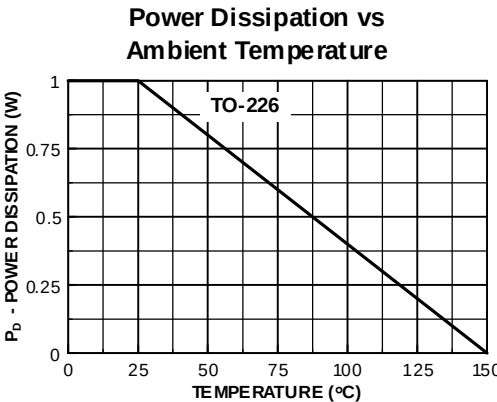
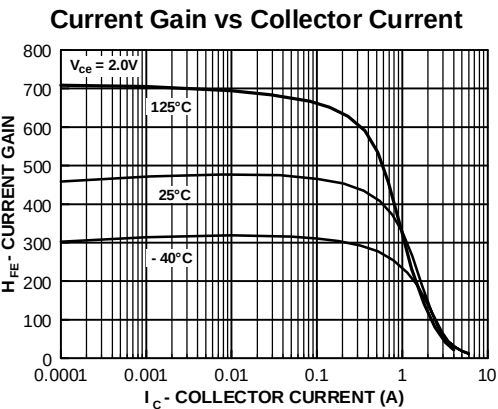
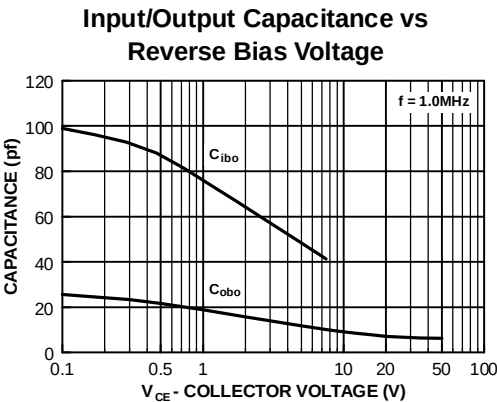
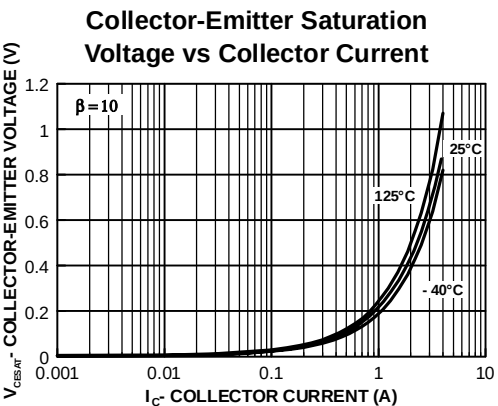
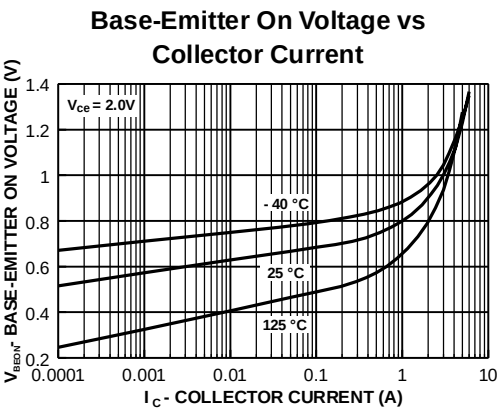
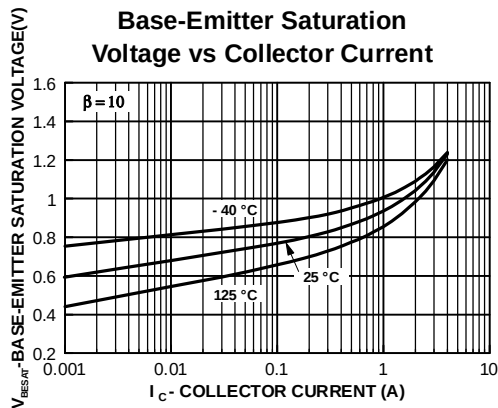
h _{FE}	DC Current Gain	I _C = 100 mA, V _{CE} = 2.0 V	330 330A	100 250 120 50	
		I _C = 1.0 A, V _{CE} = 2.0 V			
		I _C = 2.0 A, V _{CE} = 2.0 V			
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 1.0 A, I _B = 100 mA	330 330A		500 450 1.0 mV mV V
		I _C = 2.0 A, I _B = 200 mA			
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 1.0 A, I _B = 100 mA		1.25	V
V _{BE(on)}	Base-Emitter Saturation Voltage	I _C = 1.0 A, V _{CE} = 2.0 V		1.0	V

SMALL SIGNAL CHARACTERISTICS

C _{obo}	Output Capacitance	V _{CB} = 10 V, I _E = 0, f = 1.0 MHz		30	pF
F _T	Transition Frequency	I _C = 100 mA, V _{CE} = 5.0 V, f = 100 MHz	100		MHz

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

Typical Characteristics



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