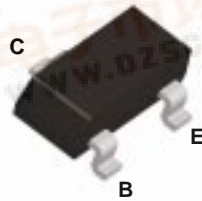




*Discrete POWER & Signal Technologies*

## FSBCW30



SuperSOT™-3

### PNP General Purpose Amplifier

This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 300 mA. Sourced from Process 68. See BC857A for characteristics.

#### Absolute Maximum Ratings\* TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CEO</sub>	Collector-Emitter Voltage	32	V
V <sub>CBO</sub>	Collector-Base Voltage	32	V
V <sub>EBO</sub>	Emitter-Base Voltage	5.0	V
I <sub>C</sub>	Collector Current - Continuous	500	mA
T <sub>J</sub> , T <sub>stg</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 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
		FSBCW30	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	500	mW
		4	mW/°C
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	250	°C/W

\* Device mounted on FR-4 PCB 4.5" x 5"; mounting pad 0.02 in<sup>2</sup> of 2oz copper.



**PNP General Purpose Amplifier**

(continued)

**Electrical Characteristics**

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
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**OFF CHARACTERISTICS**

BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 2.0 mA, I <sub>B</sub> = 0	32		V
BV <sub>CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 10 μA, I <sub>E</sub> = 0	32		V
BV <sub>CES</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 10 μA, I <sub>E</sub> = 0	32		V
BV <sub>EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 10 μA, I <sub>C</sub> = 0	5.0		V
I <sub>CBO</sub>	Collector-Cutoff Current	V <sub>CB</sub> = 32 V, I <sub>E</sub> = 0 V <sub>CB</sub> = 32 V, I <sub>E</sub> = 0, T <sub>A</sub> = +100 °C		100 10	nA μA

**ON CHARACTERISTICS**

h <sub>FE</sub>	DC Current Gain	V <sub>CE</sub> = 5.0 V, I <sub>C</sub> = 2.0 mA	215	500	
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0.5 mA		0.30	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	V <sub>CE</sub> = 5.0 V, I <sub>C</sub> = 2.0 mA	0.60	0.75	V

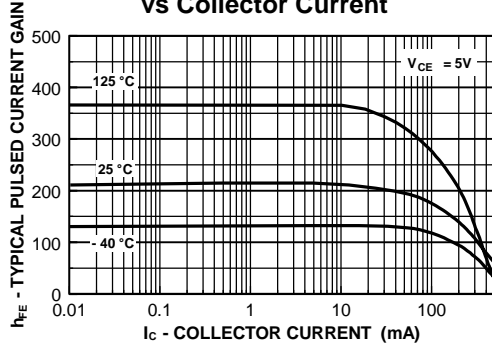
**SMALL SIGNAL CHARACTERISTICS**

NF	Noise Figure	V <sub>CE</sub> = 5.0 V, I <sub>C</sub> = 200 μA, R <sub>S</sub> = 2.0 kΩ, f = 1.0 kHz, B <sub>W</sub> = 200 Hz		10	dB
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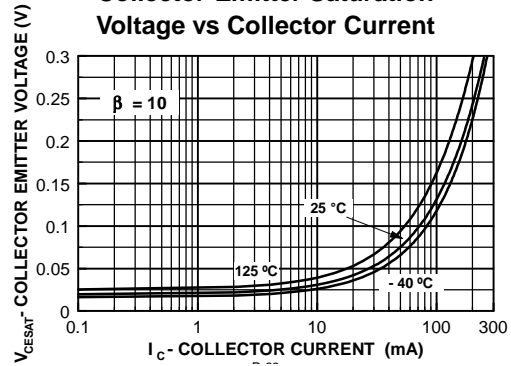
**PNP General Purpose Amplifier**  
(continued)

**Typical Characteristics**

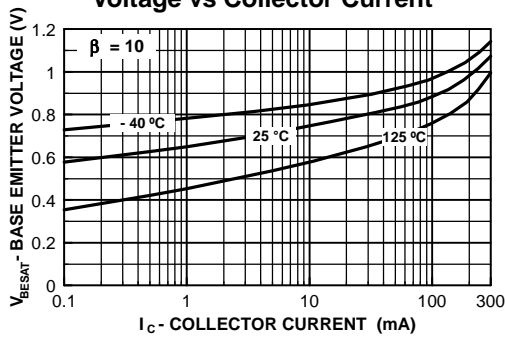
**Typical Pulsed Current Gain vs Collector Current**



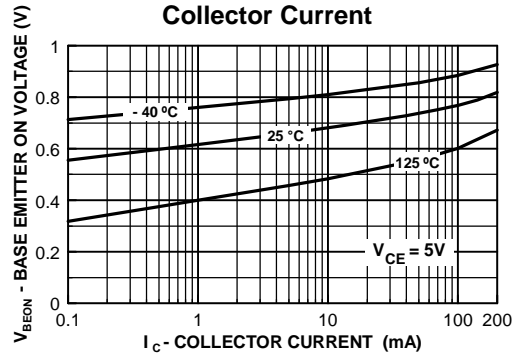
**Collector-Emitter Saturation Voltage vs Collector Current**



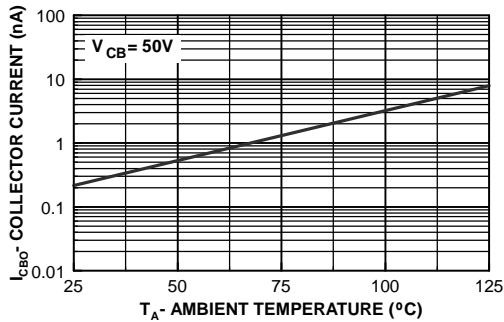
**Base-Emitter Saturation Voltage vs Collector Current**



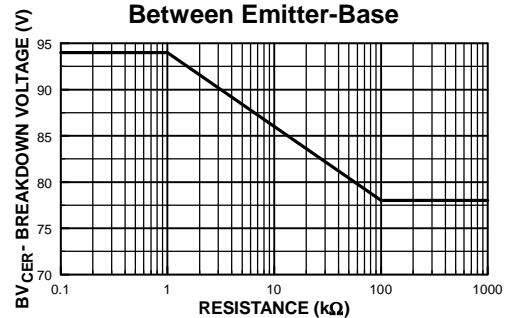
**Base Emitter ON Voltage vs Collector Current**



**Collector-Cutoff Current vs. Ambient Temperature**

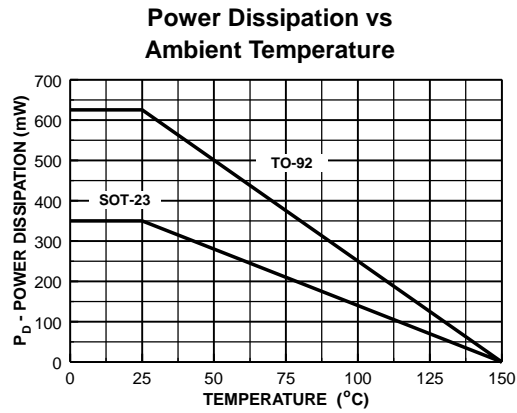
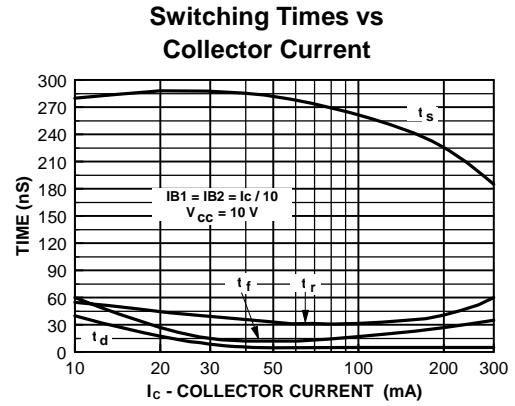
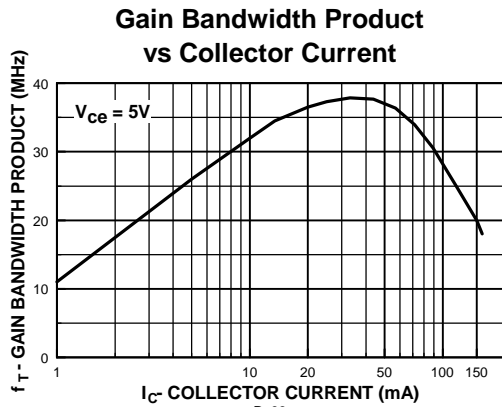
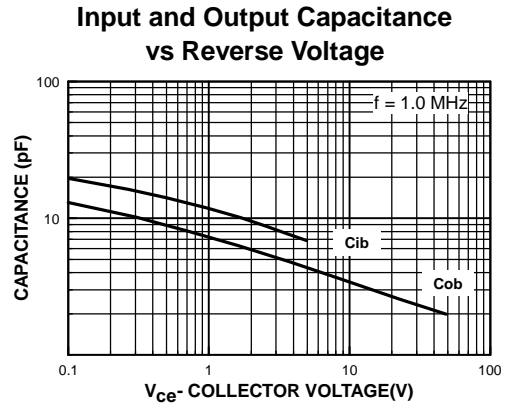
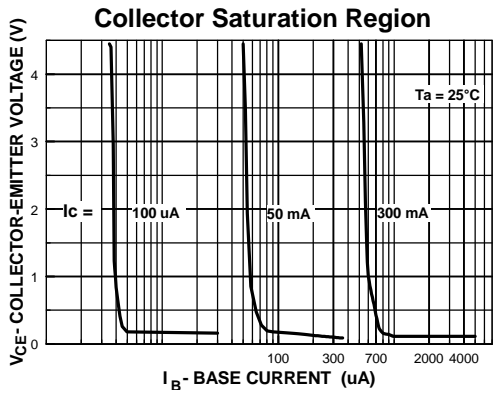


**Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base**



## PNP General Purpose Amplifier (continued)

### Typical Characteristics (continued)



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FACT™	QS™
FACT Quiet Series™	Quiet Series™
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FASTr™	SuperSOT™-6
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