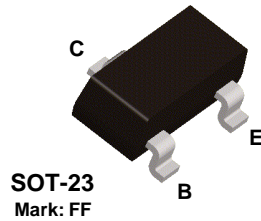


## BCV27



### NPN Darlington Transistor

This device is designed for applications requiring extremely high current gain at collector currents to 1.0 A. Sourced from Process 05.

#### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CEO</sub>	Collector-Emitter Voltage	30	V
V <sub>CB0</sub>	Collector-Base Voltage	40	V
V <sub>EB0</sub>	Emitter-Base Voltage	10	V
I <sub>C</sub>	Collector Current - Continuous	1.2	A
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
		*BCV27	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	350	mW
		2.8	mW/°C
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	357	°C/W

\*Device mounted on FR-4 PCB 40 mm X 40 mm X 1.5 mm.

# NPN Darlington Transistor

(continued)

BCV27

## Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>OFF CHARACTERISTICS</b>						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10 \text{ mA}, I_B = 0$	30			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10 \text{ }\mu\text{A}, I_E = 0$	40			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100 \text{ nA}, I_C = 0$	10			V
$I_{CBO}$	Collector-Cutoff Current	$V_{CB} = 30 \text{ V}, I_E = 0$			0.1	$\mu\text{A}$
$I_{EBO}$	Emitter-Cutoff Current	$V_{EB} = 10 \text{ V}, I_C = 0$			0.1	$\mu\text{A}$

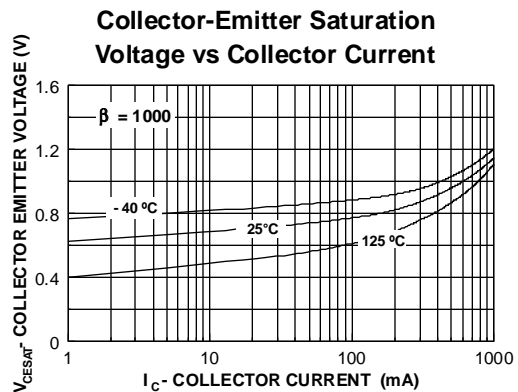
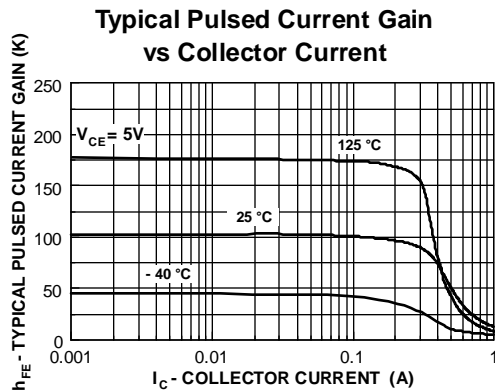
## ON CHARACTERISTICS

$h_{FE}$	DC Current Gain	$I_C = 1.0 \text{ mA}, V_{CE} = 5.0 \text{ V}$ $I_C = 10 \text{ mA}, V_{CE} = 5.0 \text{ V}$ $I_C = 100 \text{ mA}, V_{CE} = 5.0 \text{ V}$	4,000 10,000 20,000			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100 \text{ mA}, I_B = 0.1 \text{ mA}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 100 \text{ mA}, I_B = 0.1 \text{ mA}$			1.5	V

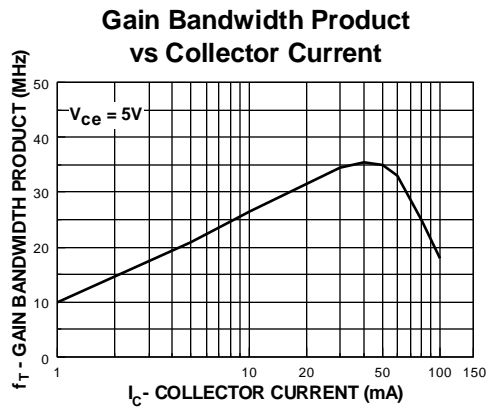
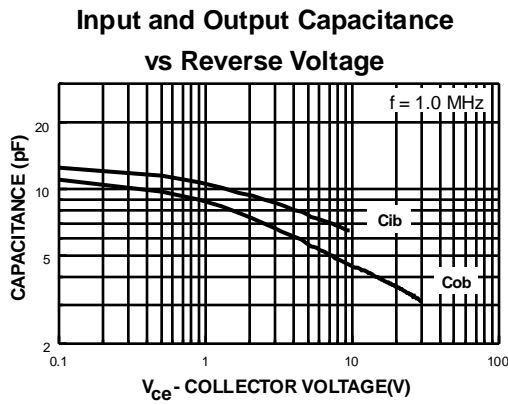
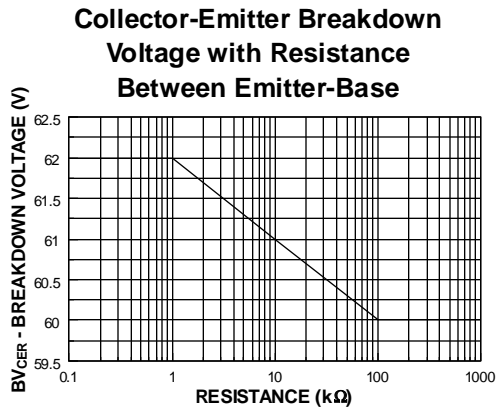
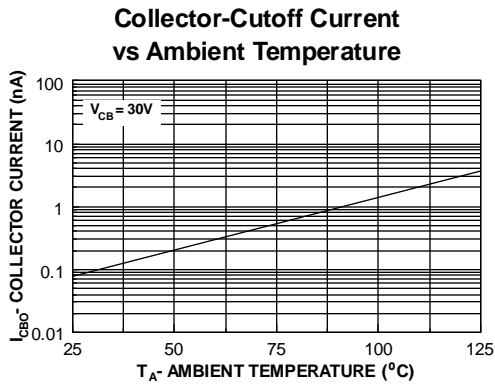
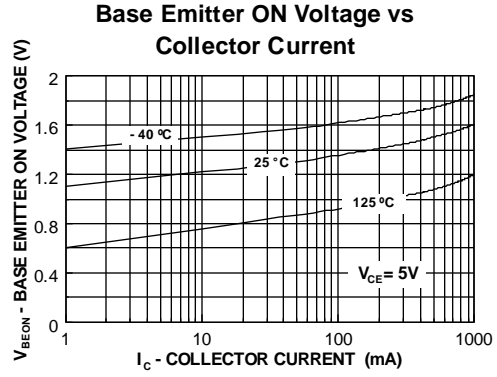
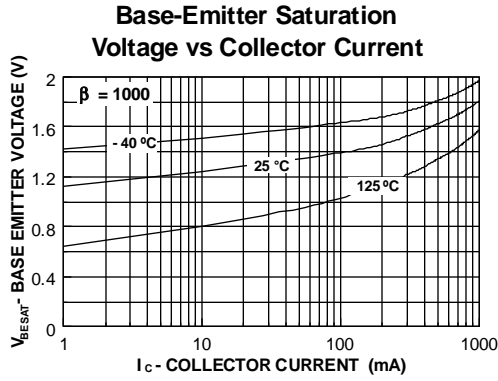
## SMALL SIGNAL CHARACTERISTICS

$f_T$	Current Gain - Bandwidth Product	$I_C = 30 \text{ mA}, V_{CE} = 5.0 \text{ V},$ $f = 100 \text{ MHz}$		220		MHz
$C_C$	Collector Capacitance	$V_{CB} = 30 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$		3.5		pF

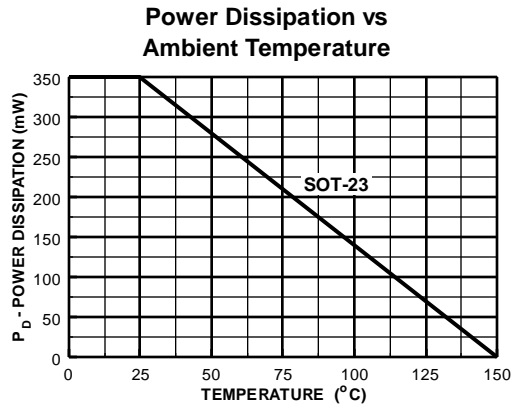
## Typical Characteristics



Typical Characteristics (continued)



Typical Characteristics (continued)



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## PRODUCT STATUS DEFINITIONS

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