



**BFS17N**

**NPN RF TRANSISTOR IN SOT-23**

**Features**

- Lead, Halogen, and Antimony Free/RoHS Compliant (Note 1)
- "Green" Device (Note 2)

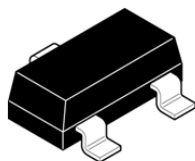
**Applications**

- RF Switch

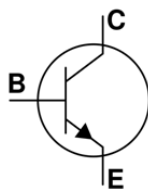
**Mechanical Data**

- Case: SOT-23
- Case material: molded Plastic. "Green" molding Compound.
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.008 grams (approximate)

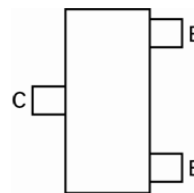
SOT-23



Top View



Device symbol



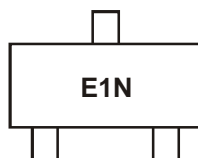
Top View  
Pin Out

**Ordering Information** (Note 3)

Product	Case	Reel size (inches)	Tape width (mm)	Quantity per reel
BFS17NTA	SOT-23	7	8mm	3000

- Notes:
1. No purposefully added lead. Halogen and Antimony Free.
  2. Diodes Inc.'s "Green" Policy can be found on our website at <http://www.diodes.com>
  3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



E1N = Product type Marking Code

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**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

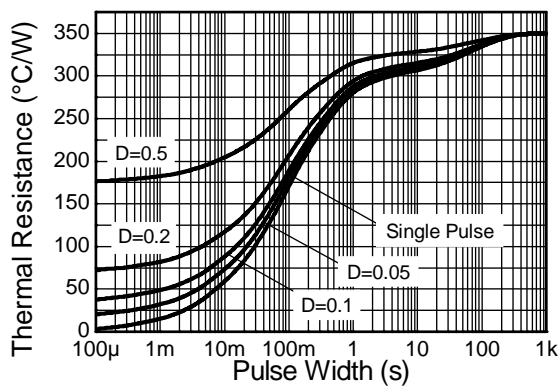
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	20	V
Collector-Emitter Voltage	V <sub>CEO</sub>	11	V
Emitter-Base Voltage	V <sub>EBO</sub>	3	V
Continuous Collector Current	I <sub>C</sub>	50	mA

**Thermal Characteristics**

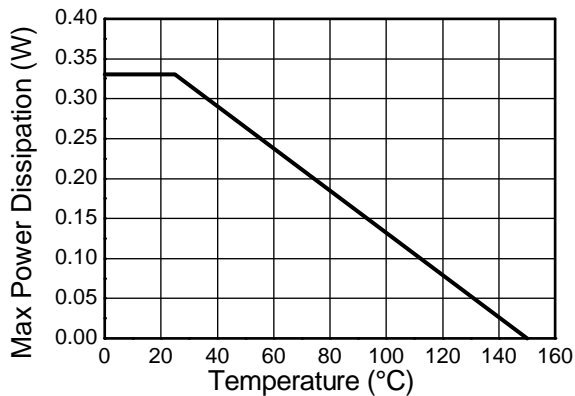
Characteristic	Symbol	Value	Unit
Power Dissipation at T <sub>A</sub> = 25°C (Note 4)	P <sub>D</sub>	330	mW
Thermal Resistance, Junction to Ambient (Note 4) @ T <sub>A</sub> = 25°C	R <sub>θJA</sub>	380	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

Notes: 4. For a device surface mounted on 15mm X 15mm X 1.6mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions

**Thermal Characteristics and Derating information**



**Transient Thermal Impedance**



**Derating Curve**

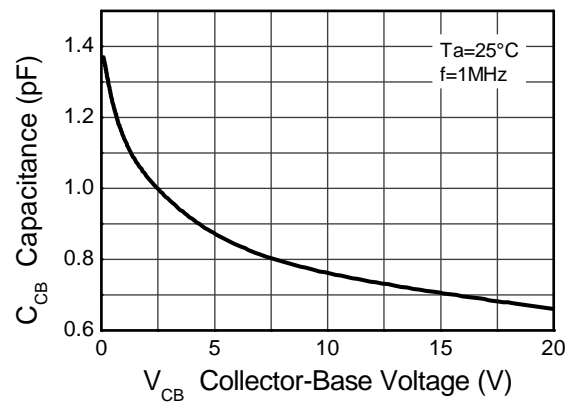
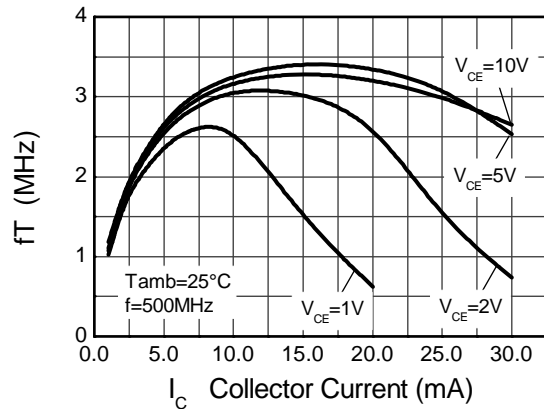
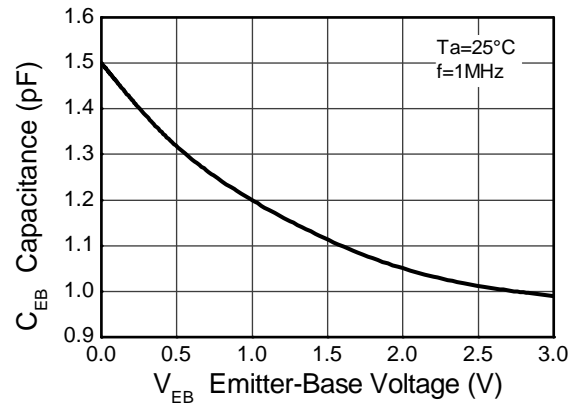
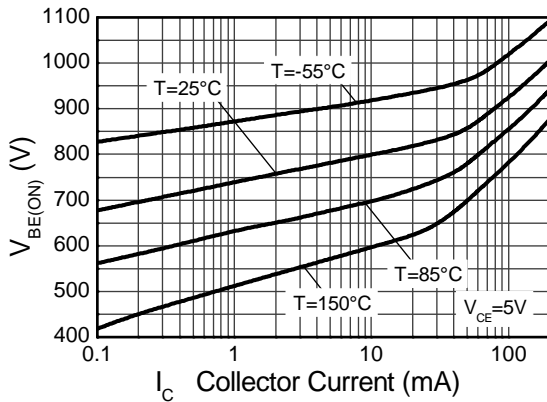
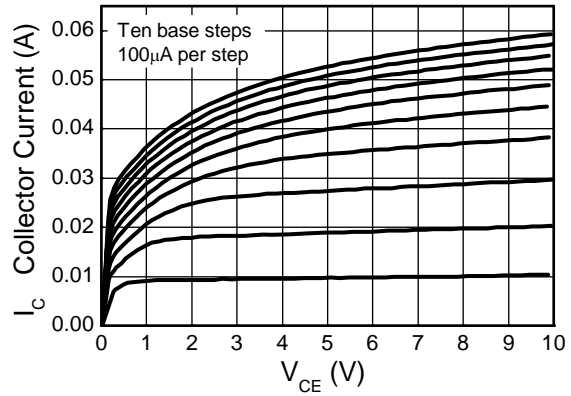
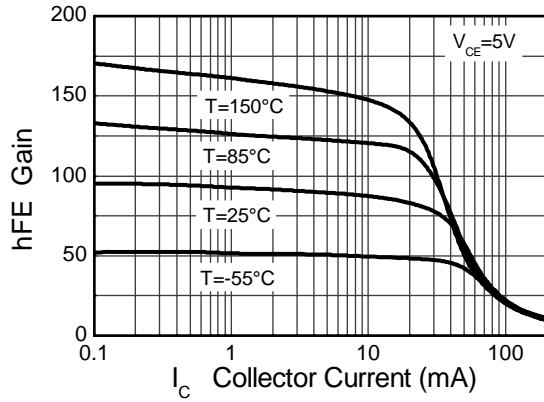
**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	20	–	–	V	I <sub>C</sub> = 10μA
Collector-Emitter Breakdown Voltage (Note 5)	V <sub>(BR)CEO</sub>	11	–	–	V	I <sub>C</sub> = 1mA
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	3	–	–	V	I <sub>E</sub> = 10μA
Collector Cutoff Current	I <sub>CBO</sub>	–	–	0.5	μA	V <sub>CB</sub> = 10V
Emitter Cutoff Current	I <sub>EBO</sub>	–	–	0.5	μA	V <sub>EB</sub> = 2V
Static Forward Current Transfer Ratio (Note 5)	h <sub>FE</sub>	56	–	180	–	I <sub>C</sub> = 5mA, V <sub>CE</sub> = 10V
Collector-Emitter Saturation Voltage (Note 5)	V <sub>CE(sat)</sub>	–	–	0.5	V	I <sub>C</sub> = 25mA, I <sub>B</sub> = 5mA
Transition Frequency (Note 5)	f <sub>T</sub>	1.4	3.2	–	GHz	I <sub>E</sub> = 25mA, V <sub>CE</sub> = 5V, f = 500MHz
Collector Output Capacitance (Note 5)	C <sub>ob</sub>	–	0.8	1.5	pF	V <sub>CB</sub> = 10V, f = 1MHz

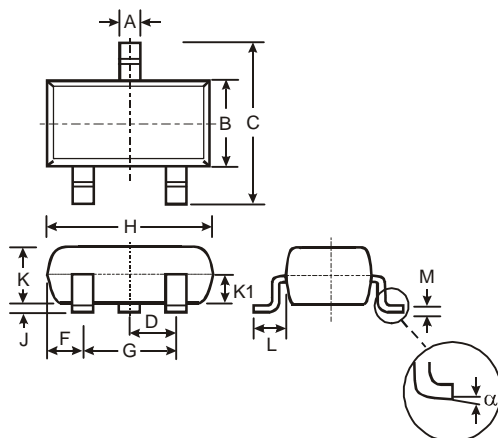
Notes: 5. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%

**Typical Characteristics**

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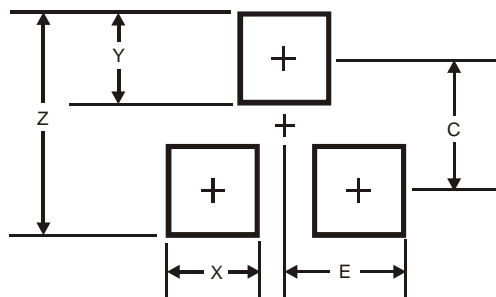


**Package Outline Dimensions**



SOT-23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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