

The RF Line NPN Silicon High-Frequency Transistor

Designed primarily for use in high-gain, low-noise amplifier, oscillator and mixer applications. Packaged for thick or thin film circuits using surface mount components.

- T1 suffix indicates tape and reel packaging of 3,000 units per reel.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	15	Vdc
Collector-Base Voltage	V_{CBO}	25	Vdc
Maximum Junction Temperature	T_{Jmax}	150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation, $T_A = 25^\circ\text{C}$ Derate above 25°C (1)	P_D	350 2.8	mW mW/°C
Storage Temperature	T_{stg}	-55 to +150	°C
Thermal Resistance Junction to Ambient (1)	$R_{\theta JA}$	357	°C/W

DEVICE MARKING

BFS17LT1 = E1

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C = 10\text{ mA}$)	$V_{(BR)CEO}$	15	—	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 100\ \mu\text{A}$)	$V_{(BR)CBO}$	25	—	—	Vdc
Collector Cutoff Current ($V_{CE} = 10\text{ V}$)	I_{CEO}	—	—	25	nA
Collector Cutoff Current ($V_{CB} = 10\text{ V}$)	I_{CBO}	—	—	25	nA
Emitter Cutoff Current ($V_{EB} = 4\text{ V}$)	I_{EBO}	—	—	100	μA

ON CHARACTERISTICS

DC Current Gain ($I_C = 2\text{ mA}$, $V_{CE} = 1\text{ V}$) ($I_C = 25\text{ mA}$, $V_{CE} = 1\text{ V}$)	h_{FE}	20 20	— —	150 —	—
Collector-Emitter Saturation Voltage ($I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$)	$V_{CE(sat)}$	—	—	0.4	V
Base-Emitter Saturation Voltage ($I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$)	$V_{BE(sat)}$	—	—	1	V

SMALL-SIGNAL CHARACTERISTICS

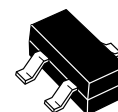
Current-Gain — Bandwidth Product ($I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 500\text{ MHz}$) ($I_C = 25\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 500\text{ MHz}$)	f_T	— —	1 1.3	— —	GHz
Output Capacitance ($V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$)	CCB	—	1	—	pF
Noise Figure ($I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $R_S = 50\ \Omega$, $f = 30\text{ MHz}$)	NF	—	5	—	dB

NOTE:

1. Package mounted on 99.5% alumina 10 x 8 x 0.6 mm.

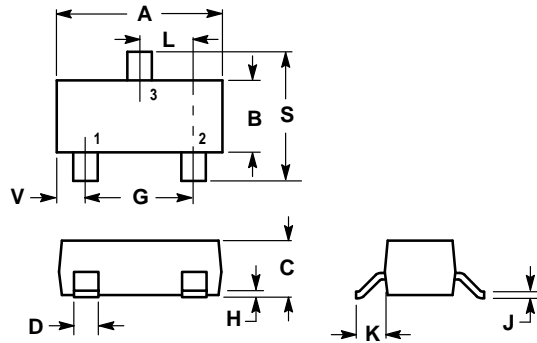
BFS17LT1

RF TRANSISTOR
NPN SILICON



CASE 318-08, STYLE 6
SOT-23
LOW PROFILE
(TO-236AA/AB)

PACKAGE DIMENSIONS



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

STYLE 6:

- PIN 1. BASE
2. EMITTER
3. COLLECTOR

CASE 318-08 ISSUE AE

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How to reach us:

USA / EUROPE: Motorola Literature Distribution;
P.O. Box 20912; Phoenix, Arizona 85036. 1-800-441-2447

JAPAN: Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, Toshikatsu Otsuki,
6F Seibu-Butsuryu-Center, 3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 03-3521-8315

MFAX: RMFAX0@email.sps.mot.com - TOUCHTONE (602) 244-6609
INTERNET: <http://Design-NET.com>

HONG KONG: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298



BFS17LT1/D

