The RF Line

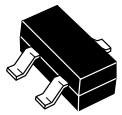
NPN Silicon High-Frequency Transistor

BFS17LT1

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.

RF TRANSISTOR
NPN SILICON



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

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°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

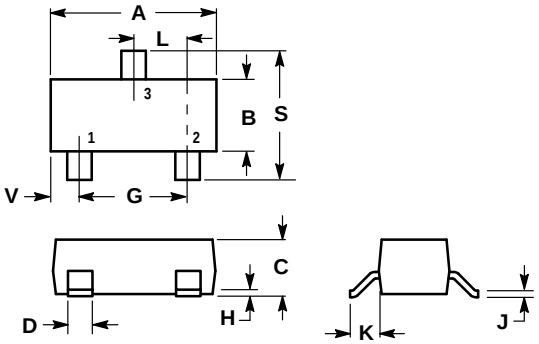
BFS17LT1 = E1

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (I_C = 10 mA)	$V_{(BR)CEO}$	15	—	—	Vdc
Collector–Base Breakdown Voltage (I_C = 100 μA)	$V_{(BR)CBO}$	25	—	—	Vdc
Collector Cutoff Current (V_{CE} = 10 V)	I_{CEO}	—	—	25	nA
Collector Cutoff Current (V_{CB} = 10 V)	I_{CBO}	—	—	25	nA
Emitter Cutoff Current (V_{EB} = 4 V)	I_{EBO}	—	—	100	μA
ON CHARACTERISTICS					
DC Current Gain (I_C = 2 mA, V_{CE} = 1 V) (I_C = 25 mA, V_{CE} = 1 V)	h_{FE}	 20 20	 — —	 150 —	—
Collector–Emitter Saturation Voltage (I_C = 10 mA, I_B = 1 mA)	$V_{CE(sat)}$	—	—	0.4	V
Base–Emitter Saturation Voltage (I_C = 10 mA, I_B = 1 mA)	$V_{BE(sat)}$	—	—	1	V
SMALL–SIGNAL CHARACTERISTICS					
Current–Gain — Bandwidth Product (I_C = 2 mA, V_{CE} = 5 V, f = 500 MHz) (I_C = 25 mA, V_{CE} = 5 V, f = 500 MHz)	f_T	 — —	 1 1.3	 — —	GHz
Output Capacitance (V_{CB} = 10 V, f = 1 MHz)	CCB	—	1	—	pF
Noise Figure (I_C = 2 mA, V_{CE} = 5 V, R_S = 50 Ω, f = 30 MHz)	NF	—	5	—	dB

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

PACKAGE DIMENSIONS



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

	INCHES		MILLIMETERS	
DIM	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

How to reach us:
USA / EUROPE: Motorola Literature Distribution;
P.O. Box 20912; Phoenix, Arizona 85036. 1–800–441–2447

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

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

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

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