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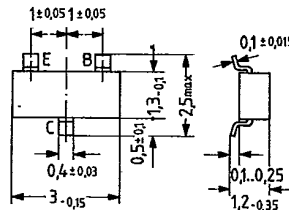
NPN Silicon RF Transistors

SIEMENS AKTIENGESELLSCHAFT **D 7-31-15**

BFS 18
BFS 18 R
BFS 19
BFS 19 R

BFS 18 and BFS 19 are epitaxial NPN silicon planar transistors in TO 236 plastic package (23 A 3 DIN 41869). These transistors were especially designed for use in RF circuits in thick and thin film technology. For identification purposes, the transistors are marked as follows: BFS 18 = "CA"; BFS 19 = "CB"; The transistors are also available upon request with changed terminal sequence (emitter and base terminal interchanged) under the designation BFS 18R (mark "CY") and BFS 19R (mark "CZ").

Type	Mark	Ordering code
BFS 18	CA	Q62702-F348
BFS 19	CB	Q62702-F349
BFS 18R	CY	Q62702-F587
BFS 19R	CZ	Q62702-F588



Approx. weight 0.02 g Dimensions in mm

Maximum ratings

Collector-emitter voltage
Collector-base voltage
Emitter-base voltage
Collector current
Junction temperature
Storage temperature range
Total power dissipation ($T_{SB} < 65^{\circ}\text{C}$)

	BFS 18 BFS 19	
V_{CEO}	20	V
V_{CBO}	30	V
V_{EBO}	5	V
I_C	30	mA
T_j	125	$^{\circ}\text{C}$
T_{stg}	-65 to +125	$^{\circ}\text{C}$
P_{tot}	150	mW

Thermal resistance

Junction to ambient air
Junction to substrate back¹⁾

R_{thJA}	520	K/W
R_{thJSB}	410	K/W

1) Ceramic substrate 0.7 mm; 2.5 cm² area

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BFS 18
BFS 18 R
BFS 19
BFS 19 R

Static characteristics ($T_{amb} = 25^\circ\text{C}$)

Collector-emitter breakdown voltage

($I_{CEO} = 2\text{ mA}$)

Collector cutoff current

($V_{CBO} = 20\text{ V}$)

($V_{CBO} = 20\text{ V}$; $T_j = 100^\circ\text{C}$)

Base-emitter voltage

($V_{CE} = 10\text{ V}$; $I_C = 1\text{ mA}$)

DC current gain ($V_{CE} = 10\text{ V}$; $I_C = 1\text{ mA}$)

	BFS 18	BFS 19	
$V_{(BR)CEO}$	> 20	> 20	V
I_{CBO}	< 100	< 100	nA
I_{CBO}	< 10	< 10	μA
V_{BE}	650 to 740	650 to 740	mV
h_{FE}	35 to 125	65 to 225	-

Dynamic characteristics ($T_{amb} = 25^\circ\text{C}$)

Transition frequency

($V_{CE} = 10\text{ V}$; $I_C = 1\text{ mA}$; $f = 100\text{ MHz}$)

Reverse transfer capacitance

($V_{CE} = 10\text{ V}$; $I_C = 1\text{ mA}$; $f = 1\text{ MHz}$)

Collector-base capacitance

($V_{CB} = 10\text{ V}$; $f = 1\text{ MHz}$)

Noise figure

($V_{CE} = 10\text{ V}$; $I_C = 1\text{ mA}$;

$R_g = 100\ \Omega$; $f = 100\text{ MHz}$)

f_T	200	260	MHz
C_{12e}	0.85	0.85	pF
C_{CBO}	1	1	pF
NF	4	4	dB

