

NPN Silicon RF Transistor

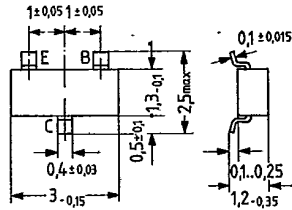
BFS 20  
BFS 20 R

SIEMENS AKTIENGESELLSCHAFT D-7-31-15

BFS 20 is an epitaxial NPN silicon planar RF transistor in TO 236 plastic package (23 A 3 DIN 41 869), intended for use in film circuits.

The transistor BFS 20 is marked "NA". It is also available upon request with changed terminal sequence (emitter and base terminal interchanged) under the designation BFS 20R (mark "NZ").

Type	Mark	Ordering code
BFS 20	NA	Q62702-F350
BFS 20 R	NZ	Q62702-F589



Approx. weight 0.02 g Dimensions in mm

Maximum ratings

Collector-emitter voltage	$V_{CEO}$	20	V
Collector-base voltage	$V_{CBO}$	30	V
Emitter-base voltage	$V_{EBO}$	4	V
Collector current	$I_C$	25	mA
Junction temperature	$T_j$	125	°C
Storage temperature range	$T_{stg}$	-65 to +125	°C
Total power dissipation ( $T_{SB} < 65\text{ °C}$ )	$P_{tot}$	150	mW

Thermal resistance

Junction to ambient air	$R_{thJA}$	520	K/W
Junction to substrate back <sup>1)</sup>	$R_{thJSB}$	410	K/W

1.) Ceramic substrate 0.7 mm; 2.5 cm<sup>2</sup> area

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

Collector-emitter breakdown voltage  
( $I_{CEO} = 2\text{ mA}$ )  
Collector cutoff current  
( $V_{CBO} = 20\text{ V}; T_j = 100^{\circ}\text{C}$ )  
Base-emitter voltage  
( $V_{CE} = 10\text{ V}; I_C = 7\text{ mA}$ )  
DC current gain ( $V_{CE} = 10\text{ V}; I_C = 7\text{ mA}$ )

$V_{(BR)CEO}$	$\geq 20$	V
$I_{CBO}$	$< 100$	nA
$I_{CBO}$	$< 10$	$\mu\text{A}$
$V_{BE}$	$740 (\leq 900)$	mV
$h_{FE}$	$85 (> 40)$	-

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

Transition frequency  
( $V_{CE} = 10\text{ V}; I_C = 5\text{ mA}; f = 100\text{ MHz}$ )  
Reverse transfer capacitance  
( $V_{CE} = 10\text{ V}; I_C = 1\text{ mA}; f = 1\text{ MHz}$ )  
Collector-base capacitance  
( $V_{CB} = 10\text{ V}; f = 1\text{ MHz}$ )

$f_T$	$450 (> 275)$	MHz
$C_{12e}$	0.35	pF
$C_{CB0}$	0.8	pF

