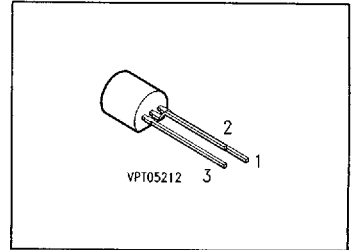


## NPN Silicon RF Transistors

**BF 254**  
**BF 255**

- For AM and FM stages



Type	Marking	Ordering Code	Pin Configuration			Package <sup>1)</sup>
			1	2	3	
BF 254 BF 255	—	Q62702-F201 Q62702-F202	C	E	B	TO-92

### Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	$V_{CE0}$	20	V
Collector-base voltage	$V_{CES}$	30	
Emitter-base voltage	$V_{EB0}$	5	
Collector current	$I_C$	30	mA
Total power dissipation, $T_A \leq 45^\circ\text{C}$	$P_{tot}$	250	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	- 65 ... + 150	

### Thermal Resistance

Junction - ambient	$R_{th JA}$	$\leq 420$	K/W
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<sup>1)</sup> For detailed information see chapter Package Outlines.

**Electrical Characteristics**

at  $T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

**DC Characteristics**

DC current gain $I_C = 1\text{ mA}$ , $V_{CE} = 10\text{ V}$ BF 254 BF 255	$h_{FE}$	65 35	— —	220 130	—
Base-emitter voltage $I_C = 1\text{ mA}$ , $V_{CE} = 10\text{ V}$	$V_{BE}$	—	0.68	—	V

**AC Characteristics**

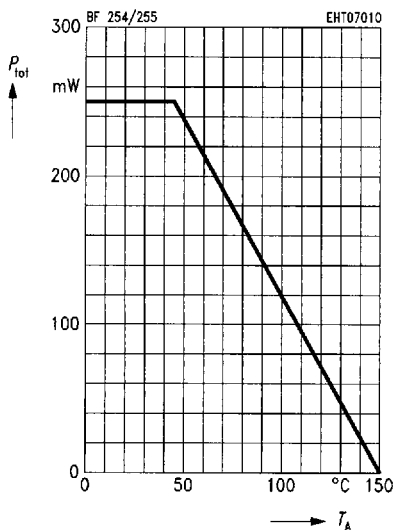
Transition frequency $I_C = 1\text{ mA}$ , $V_{CE} = 10\text{ V}$ , $f = 100\text{ MHz}$ BF 254 BF 255	$f_T$	— —	260 220	— —	MHz
Collector-base capacitance $V_{CB} = 10\text{ V}$ , $V_{BE} = 0\text{ V}$ , $f = 1\text{ MHz}$	$C_{cb}$	—	0.6	—	pF
Collector-emitter capacitance $V_{CE} = 10\text{ V}$ , $V_{BE} = 0\text{ V}$ , $f = 1\text{ MHz}$	$C_{ce}$	—	0.6	—	
Noise figure $I_C = 1\text{ mA}$ , $V_{CE} = 10\text{ V}$ $f = 1\text{ MHz}$ , $g_s = 1.5\text{ mS}^1)$ $f = 100\text{ MHz}$ , $g_s = 10\text{ mS}^1)$	$F$	— —	1.2 3.8	— —	dB

**Y parameters, typical values,  $I_C = 10\text{ V}$**

$f$ MHz		$g_{11}$ mS	$b_{11}$ mS	$ y_{12} $ $\mu\text{S}$	$\varphi_{12}$ deg.	$ y_{21} $ mS	$\varphi_{21}$ deg.	$g_{22}$ $\mu\text{S}$	$b_{22}$ $\mu\text{S}$
Common emitter									
0.45	BF 254	0.3	0.06	1.7	-90	38	0	3.2	3.4
	BF 255	0.45	0.08	1.7	-90	38	0	2.7	3.4
10.7	BF 254	0.4	1.5	41	-90	37	-10	4	8.1
	BF 255	0.5	1.75	41	-90	37	-10	3.8	8.1
Common base									
100	BF 255	34	-3.5	250	-85	33	150	18	700

<sup>1)</sup>  $g_s$  = generator conductance

Total power dissipation  $P_{\text{tot}} = f(T_A)$



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