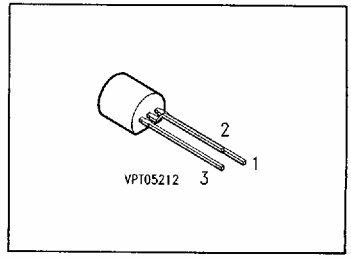
SIEMENS

NPN Silicon RF Transistors

BF 254
BF 255

- For AM and FM stages



Type	Marking	Ordering Code	Pin Configuration 1	2	3	Package[1]
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, $T_A \leq 45$ °C	P_{tot}	250	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	– 65 ... + 150	

Thermal Resistance

Junction - ambient	$R_{th\,JA}$	≤ 420	K/W

[1] For detailed information see chapter Package Outlines.

Electrical Characteristics

at T_A = 25 °C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
DC current gain I_C = 1 mA, V_{CE} = 10 V BF 254 BF 255	h_{FE}	 65 35	 – –	 220 130	–
Base-emitter voltage I_C = 1 mA, V_{CE} = 10 V	V_{BE}	–	0.68	–	V
AC Characteristics					
Transition frequency I_C = 1 mA, V_{CE} = 10 V, f = 100 MHz BF 254 BF 255	f_T	 – –	 260 220	 – –	MHz
Collector-base capacitance V_{CB} = 10 V, V_{BE} = 0 V, f = 1 MHz	C_{cb}	–	0.6	–	pF
Collector-emitter capacitance V_{CE} = 10 V, V_{BE} = 0 V, f = 1 MHz	C_{ce}	–	0.6	–	
Noise figure I_C = 1 mA, V_{CE} = 10 V f = 1 MHz, g_s = 1.5 mS[1)] f = 100 MHz, g_s = 10 mS[1)]	F	 – –	 1.2 3.8	 – –	dB

Y parameters, typical values, I_C = 10 V

f MHz		g_{11} mS	b_{11} mS	$\lvert y_{12} \rvert$ µS	φ_{12} deg.	$\lvert y_{21} \rvert$ mS	φ_{21} deg.	g_{22} µS	b_{22} µS
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

1) g_s = generator conductance

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