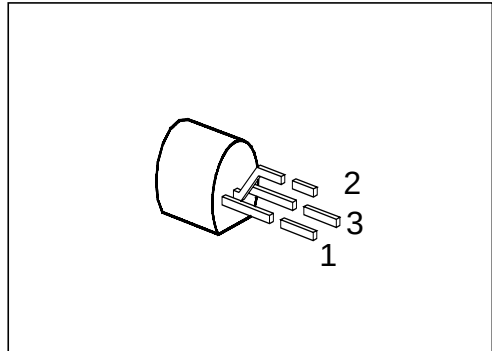


NPN Silicon RF Transistor

BF 414

- For low-noise, common base VHF and FM stages



Type	Marking	Ordering Code	Pin Configuration			Package ¹⁾
			1	2	3	
BF 414	—	Q62702-F517	C	B	E	TO-92

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CE0}	30	V
Collector-base voltage	V_{CB0}	40	
Emitter-base voltage	V_{EB0}	4	
Collector current	I_C	25	mA
Base current	I_B	3	
Total power dissipation, $T_A \leq 45^\circ\text{C}$	P_{tot}	300	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	– 55 ... + 150	

Thermal Resistance

Junction - ambient	$R_{\text{th JA}}$	≤ 350	K/W
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¹⁾ For detailed information see chapter Package Outlines.

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

Collector-emitter breakdown voltage $I_C = 2\text{ mA}$, $I_B = 0$	$V_{(BR)\text{ CE0}}$	30	—	—	V
Collector-base breakdown voltage $I_C = 10\text{ }\mu\text{A}$, $I_E = 0$	$V_{(BR)\text{ CB0}}$	40	—	—	
Emitter-base breakdown voltage $I_E = 10\text{ }\mu\text{A}$	$V_{(BR)\text{ EB0}}$	4	—	—	
Collector cutoff current $V_{CB} = 20\text{ V}$	I_{CB0}	—	—	60	nA
DC current gain $I_C = 4\text{ mA}$, $V_{CE} = 10\text{ V}$	h_{FE}	30	80	—	—

AC Characteristics

Transition frequency $I_C = 1\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 100\text{ MHz}$ $I_C = 5\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 100\text{ MHz}$	f_t	— —	400 560	— —	MHz
Collector-emitter capacitance $V_{CE} = 10\text{ V}$, $V_{BE} = 0\text{ V}$, $f = 1\text{ MHz}$	C_{ce}	—	0.1	—	
Noise figure $I_C = 5\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 100\text{ MHz}$ $R_S = 60\text{ }\Omega$	F	—	3	—	dB