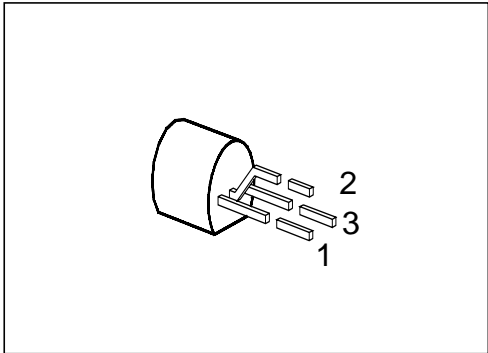


## NPN Silicon RF Transistor

**BF 414**

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



Type	Marking	Ordering Code	Pin Configuration			Package <sup>1)</sup>
			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, $T_A \leq 45^\circ\text{C}$	$P_{\text{tot}}$	300	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature range	$T_{\text{stg}}$	– 55 ... + 150	

### Thermal Resistance

Junction - ambient	$R_{\text{th JA}}$	$\leq 350$	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**

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