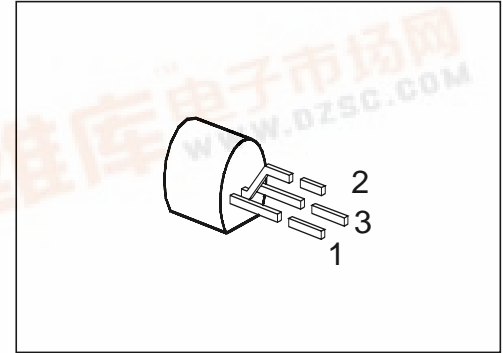


SIEMENS

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, $T_A \leq 45\text{ °C}$	P_{tot}	300	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	– 55 ... + 150	

Thermal Resistance

Junction - ambient	$R_{th\ JA}$	≤ 350	K/W
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Electrical Characteristics

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

Collector-emitter breakdown voltage $I_C = 2\text{ mA}, I_B = 0$	$V_{(BR)CE0}$	30	–	–	V
Collector-base breakdown voltage $I_C = 10\text{ }\mu\text{A}, I_E = 0$	$V_{(BR)CB0}$	40	–	–	
Emitter-base breakdown voltage $I_E = 10\text{ }\mu\text{A}$	$V_{(BR)EB0}$	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	–	pF
Noise figure $I_C = 5\text{ mA}, V_{CE} = 10\text{ V}, f = 100\text{ MHz}$ $R_s = 60\text{ }\Omega$	F	–	3	–	dB