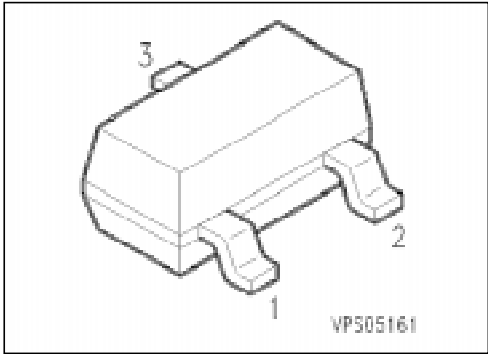


NPN Silicon RF Transistors

BF 840

BF 841

- Suitable for common emitter RF, IF amplifiers
- Low collector-base capacitance due to contact shield diffusion
- Low output conductance



Type	Marking	Ordering Code	Pin Configuration			Package ¹⁾
			1	2	3	
BF 840 BF 841	NC ND	Q62702-F1240 Q62702-F1287	B	E	C	SOT-23

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CE0}	40	V
Collector-base voltage	V_{CB0}	40	
Emitter-base voltage	V_{EB0}	4	
Collector current	I_C	25	mA
Base current	I_B	2	
Total power dissipation, $T_A \leq 25^\circ\text{C}^{2)}$	P_{tot}	280	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	- 65 ... + 150	

Thermal Resistance

Junction - ambient ²⁾	$R_{th JA}$	≤ 450	K/W
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¹⁾ For detailed information see chapter Package Outlines.

²⁾ Package mounted on alumina 15 mm × 16.7 mm × 0.7 mm.

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 $I_C = 1\text{ mA}$, $I_B = 0$	$V_{(BR)\text{ CE0}}$	40	—	—	V
Emitter-base breakdown voltage $I_E = 10\text{ }\mu\text{A}$, $I_B = 0$	$V_{(BR)\text{ EB0}}$	4	—	—	
Collector-base cutoff current $V_{CB} = 20\text{ V}$, $I_E = 0$	I_{CB0}	—	—	100	nA
DC current gain, $I_C = 1\text{ mA}$, $V_{CE} = 10\text{ V}$ BF 840 BF 841	h_{FE}	65 35	— —	220 125	—
Base-emitter voltage $I_C = 1\text{ mA}$, $V_{CE} = 10\text{ V}$	V_{BE}	—	0.7	—	V

AC Characteristics

Transition frequency $I_C = 1\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 100\text{ MHz}$	f_T	—	380	—	MHz
Collector-base capacitance $V_{CB} = 10\text{ V}$, $V_{BE} = V_{be} = 0$, $f = 1\text{ MHz}$	C_{cb}	—	0.3	—	pF
Noise figure $I_C = 1\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 100\text{ kHz}$ $R_S = 200\text{ }\Omega$	F	—	1.7	—	dB
Output conductance $I_C = 1\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 0.5\text{ MHz}$	g_{22e}	—	4	—	μS