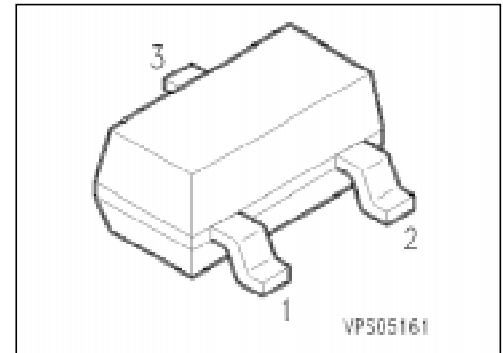


## NPN Silicon RF Transistors

**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 <sup>1)</sup>
			1	2	3	
BF 840	NC	Q62702-F1240	B	E	C	SOT-23
BF 841	ND	Q62702-F1287				

### 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, $T_A \leq 25\text{ °C}^2)$	$P_{tot}$	280	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	- 65 ... + 150	

### Thermal Resistance

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

<sup>2)</sup> 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 $I_C = 1\text{ mA}, I_B = 0$	$V_{(BR)CE0}$	40	–	–	V
Emitter-base breakdown voltage $I_E = 10\text{ }\mu\text{A}, I_B = 0$	$V_{(BR)EB0}$	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	–	$\mu\text{S}$