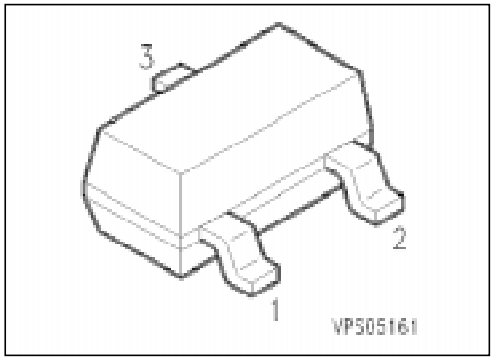
SIEMENS

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 1	2	3	Package[1]
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, $T_A \leq 25$ °C[2]	P_{tot}	280	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	– 65 … + 150	

Thermal Resistance

Junction - ambient[2]	$R_{th\ JA}$	≤ 450	K/W

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 °C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage I_C = 1 mA, I_B = 0	$V_{(BR)\ CE0}$	40	–	–	V
Emitter-base breakdown voltage I_E = 10 µA, I_B = 0	$V_{(BR)\ EB0}$	4	–	–	
Collector-base cutoff current V_{CB} = 20 V, I_E = 0	I_{CB0}	–	–	100	nA
DC current gain, I_C = 1 mA, V_{CE} = 10 V BF 840 BF 841	h_{FE}	 65 35	 – –	 220 125	–
Base-emitter voltage I_C = 1 mA, V_{CE} = 10 V	V_{BE}	–	0.7	–	V
AC Characteristics					
Transition frequency I_C = 1 mA, V_{CE} = 10 V, f = 100 MHz	f_T	–	380	–	MHz
Collector-base capacitance V_{CB} = 10 V, V_{BE} = v_{be} = 0, f = 1 MHz	C_{cb}	–	0.3	–	pF
Noise figure I_C = 1 mA, V_{CE} = 10 V, f = 100 kHz R_S = 200 Ω	F	–	1.7	–	dB
Output conductance I_C = 1 mA, V_{CE} = 10 V, f = 0.5 MHz	g_{22e}	–	4	–	µS