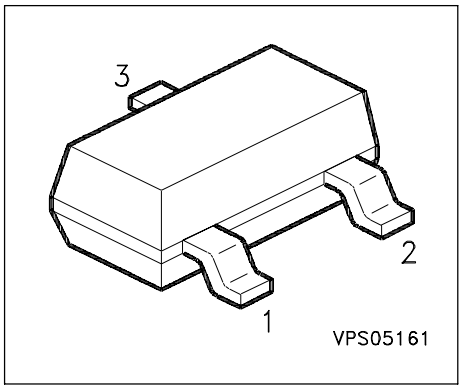
NPN Silicon RF Transistor

- Especially suitable for amplifiers and TV-sat tuners



ESD: **E**lectro**s**tatic **d**ischarge sensitive device, observe handling precaution!

Type	Marking	Ordering Code	Pin Configuration			Package
BF 775A	LGs	Q62702-F1250	1 = B	2 = E	3 = C	SOT-23

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CEO}	16	V
Collector-emitter voltage	V_{CES}	25	
Collector-base voltage	V_{CBO}	25	
Emitter-base voltage	V_{EBO}	2	
Collector current	I_C	30	mA
Base current	I_B	4	
Total power dissipation $T_S \leq 59$ °C	P_{tot}	280	mW
Junction temperature	T_j	150	°C
Ambient temperature	T_A	- 65 ... + 150	
Storage temperature	T_{stg}	- 65 ... + 150	
Thermal Resistance			
Junction - soldering point [1)]	R_{thJS}	≤ 325	K/W

1) T_S is measured on the collector lead at the soldering point to the pcb.

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	$V_{(BR)CEO}$	16	-	-	V
Collector-emitter cutoff current V_{CE} = 25 V, V_{BE} = 0	I_{CES}	-	-	100	µA
Collector-base cutoff current V_{CB} = 10 V, I_E = 0	I_{CBO}	-	-	100	nA
Emitter-base cutoff current V_{EB} = 2 V, I_C = 0	I_{EBO}	-	-	10	µA
DC current gain I_C = 15 mA, V_{CE} = 8 V	h_{FE}	50	120	200	-

Electrical Characteristics at T_A = 25°C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Transition frequency I_C = 15 mA, V_{CE} = 8 V, f = 500 MHz	f_T	4.5	5.8	-	GHz
Collector-base capacitance V_{CB} = 10 V, f = 1 MHz	C_{cb}	-	0.39	0.6	pF
Collector-emitter capacitance V_{CE} = 10 V, f = 1 MHz	C_{ce}	-	0.19	-	
Emitter-base capacitance V_{EB} = 0.5 V, f = 1 MHz	C_{eb}	-	0.9	-	
Noise figure I_C = 5 mA, V_{CE} = 8 V, Z_S = Z_{Sopt}	F				dB
f = 900 MHz		-	1.45	-	
f = 1.8 GHz		-	2.2	-	
Power gain [2)] I_C = 15 mA, V_{CE} = 8 V, Z_S = Z_{Sopt} Z_L = Z_{Lopt}	G_{ma}				
f = 900 MHz		-	16	-	
f = 1.8 GHz		-	10.5	-	
Transducer gain I_C = 15 mA, V_{CE} = 8 V, Z_S =Z_L= 50 Ω	$\lvert S_{21e}\rvert^2$				
f = 900 MHz		-	13	-	
f = 1.8 GHz		-	7.5	-	

2) $G_{ma} = |S_{21}/S_{12}|\ (k-(k^2-1)^{1/2})$