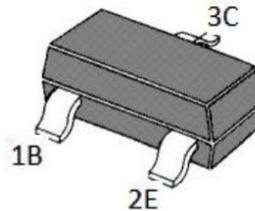


## NPN Silicon Epitaxial Planar Transistor

for microwave low noise amplifier at VHF, UHF and CATV band

The transistor is subdivided into three groups, Q, R and S, according to its DC current gain.



SOT-23-3L Plastic Package

HFE	MARKING
Q	R23
R	R24
S	R25

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	20	V
Collector Emitter Voltage	$V_{CEO}$	12	V
Emitter Base Voltage	$V_{EBO}$	3	V
Collector Current	$I_C$	100	mA
Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_s$	- 65 to + 150	$^\circ\text{C}$

### Characteristics ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 10\text{ V}$ , $I_C = 20\text{ mA}$ Current Gain Group	Q	$h_{FE}$	50	-	100	-
	R	$h_{FE}$	80	-	160	-
	S	$h_{FE}$	125	-	250	-
Collector Cutoff Current at $V_{CB} = 10\text{ V}$	$I_{CBO}$	-	-	1	$\mu\text{A}$	
Emitter Cutoff Current at $V_{EB} = 1\text{ V}$	$I_{EBO}$	-	-	1	$\mu\text{A}$	
Gain Bandwidth Product at $V_{CE} = 10\text{ V}$ , $I_C = 20\text{ mA}$	$f_T$	-	7	-	GHz	
Feed-Back Capacitance at $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{re}^{1)}$	-	0.55	1	pF	
Noise Figure at $V_{CE} = 10\text{ V}$ , $I_C = 7\text{ mA}$ , $f = 1\text{ GHz}$	NF	-	1.1	2	dB	

1) The emitter terminal and the case shall be connected to the guard terminal of the three-terminal capacitance bridge.

