

## 2SC5049

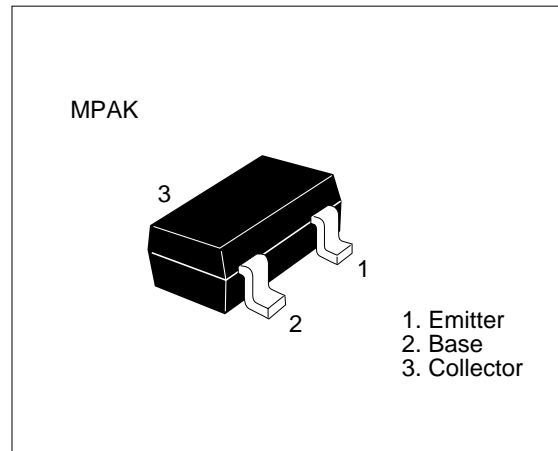
Silicon NPN Bipolar Transistor

### Application

VHF & UHF wide band amplifire

### Features

- High gain bandwidth product  
 $f_T = 10 \text{ GHz typ}$
- High gain, low noise figure  
 $PG = 15.0 \text{ dB typ,}$   
 $NF = 1.2 \text{ dB typ at } f = 900 \text{ MHz}$



**Table 1 Absolute Maximum Ratings** ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	15	V
Collector to emitter voltage	$V_{CEO}$	8	V
Emitter to base voltage	$V_{EBO}$	1.5	V
Collector current	$I_C$	20	mA
Collector power dissipation	$P_C$	150	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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**Table 2 Electrical Characteristics** (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector cutoff current	$I_{CBO}$	—	—	10	$\mu\text{A}$	$V_{CB} = 15 \text{ V}$ , $I_E = 0$
	$I_{CEO}$	—	—	1	$\text{mA}$	$V_{CE} = 8 \text{ V}$ , $R_{BE} = \infty$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu\text{A}$	$V_{EB} = 1.5 \text{ V}$ , $I_C = 0$
DC current transfer ratio	$h_{FE}$	50	120	250		$V_{CE} = 5 \text{ V}$ , $I_C = 20 \text{ mA}$
Output capacitance	$C_{ob}$	—	0.45	0.8	$\text{pF}$	$V_{CB} = 5 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$
Gain bandwidth product	$f_T$	7.0	10.0	—	$\text{GHz}$	$V_{CE} = 5 \text{ V}$ , $I_C = 10 \text{ mA}$
Power gain	PG	12.0	15.0	—	$\text{dB}$	$V_{CE} = 5 \text{ V}$ , $I_C = 10 \text{ mA}$ , $f = 900 \text{ MHz}$
Noise figure	NF	—	1.2	2.5	$\text{dB}$	$V_{CE} = 5 \text{ V}$ , $I_C = 5 \text{ mA}$ , $f = 900 \text{ MHz}$

Note: See characteristic curve of 2SC4784.  
Marking of 2SC5049 is "YA-".

Attention: This device is very sensitive to electro static discharge.  
It is recommended to adopt appropriate cautions when handling this transistor.