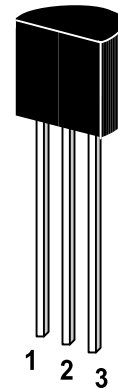


# ST 9013

NPN Silicon Epitaxial Planar Transistor  
for switching and amplifier applications. Especially  
suitable for AF-driver stages and low power output  
stages.

The transistor is subdivided into three groups, G, H  
and I, according to its DC current gain. As  
complementary type the PNP transistor ST 9012 is  
recommended.

On special request, these transistors can be  
manufactured in different pin configurations.



1. Emitter 2. Base 3. Collector

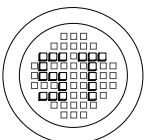
TO-92 Plastic Package  
Weight approx. 0.19g

## Absolute Maximum Ratings (T<sub>a</sub> = 25° )

	Symbol	Value	Unit
Collector Emitter Voltage	V <sub>CEO</sub>	30	V
Emitter Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	800	mA
Peak Collector Current	I <sub>CM</sub>	1	A
Base Current	I <sub>B</sub>	100	mA
Power Dissipation	P <sub>tot</sub>	625 <sup>1)</sup>	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>S</sub>	-55 to +150	°C

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case

G S P FORM A IS AVAILABLE



®

РАДИОТЕХ-ТРЕЙД

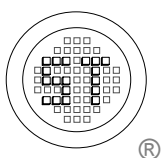
Тел.: (495) 795-0805  
Факс: (495) 234-1603  
Эл. почта: info@rct.ru  
Веб: www.rct.ru

# ST 9013

## Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

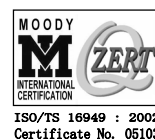
	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE}=1\text{V}$ , $I_C=50\text{mA}$	Current Gain Group G H I	$h_{FE}$	110	-	183	-
		$h_{FE}$	177	-	250	-
		$h_{FE}$	250	-	380	-
		$h_{FE}$	40	-	-	-
at $V_{CE}=1\text{V}$ , $I_C=500\text{mA}$						
Collector Cutoff Current at $V_{CB}=31\text{V}$	$I_{CBO}$	-	-	100	nA	
Collector Emitter Breakdown Voltage at $I_C=1\text{mA}$	$V_{(BR)CEO}$	30	-	-	V	
Emitter Base Cutoff Current at $V_{EB}=5.1\text{V}$	$I_{EBO}$	-	-	100	nA	
Collector Saturation Voltage at $I_C=500\text{mA}$ , $I_B=20\text{mA}$	$V_{CE(sat)}$	-	-	0.5	V	
Base Saturation Voltage at $I_C=500\text{mA}$ , $I_B=20\text{mA}$	$V_{BE(sat)}$	-	-	1.2	V	
Base Emitter Voltage at $V_{CE}=1\text{V}$ , $I_C=50\text{mA}$	$V_{BE}$	0.6	-	0.75	V	
Gain Bandwidth Product at $V_{CE}=5\text{V}$ , $I_C=10\text{mA}$ , $f=50\text{MHz}$	$f_T$	-	100	-	MHz	
Collector Base Capacitance at $V_{CB}=10\text{V}$ , $f=1\text{MHz}$	$C_{CBO}$	-	12	-	pF	
Thermal Resistance Junction to Ambient	$R_{thA}$	-	-	200 <sup>1)</sup>	K/W	
1) Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case						

**G S P FORM A IS AVAILABLE**



**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Semtech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



Dated : 17/06/2005

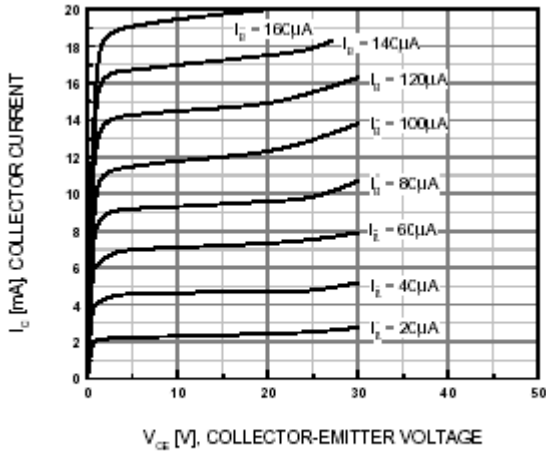


Figure 1. Static Characteristic

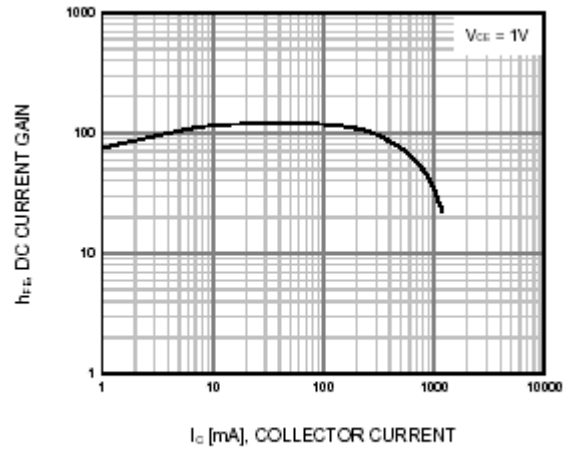


Figure 2. DC current Gain

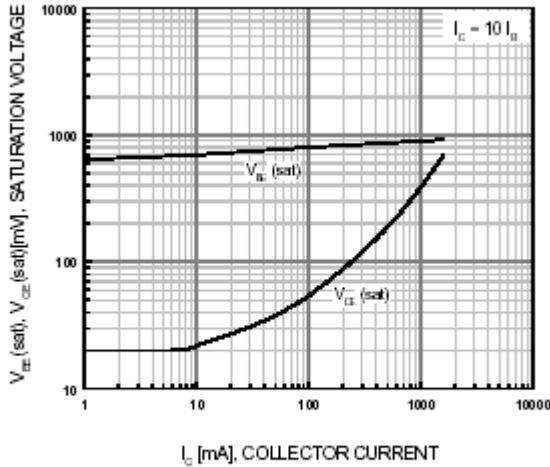


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

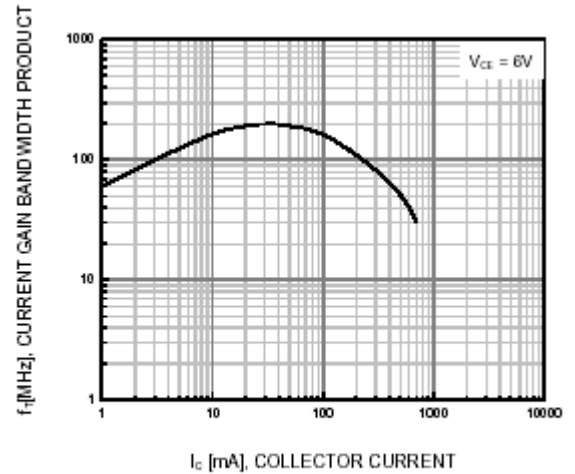
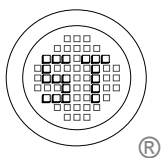


Figure 4. Current Gain Bandwidth Product



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