

9012-HAF

PNP Silicon Epitaxial Planar Transistor

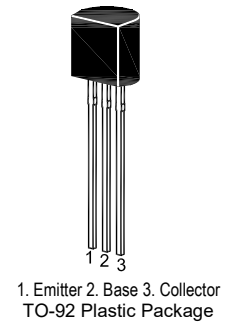
The transistor is subdivided into three groups, G, H and I, according to its DC current gain. As complementary type the NPN transistor 9013 is recommended.

Features

- Halogen and Antimony Free(HAF), RoHS compliant

Applications

- For switching and amplifier
- Especially suitable for AF-driver stages and low power output stages

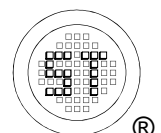


Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CB0}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	30	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	500	mA
Power Dissipation	P_{tot}	625	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Thermal Characteristics

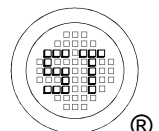
Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	200	$^\circ\text{C/W}$



9012-HAF

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit	
DC Current Gain at $-V_{CE} = 1\text{ V}$, $-I_C = 50\text{ mA}$ at $-V_{CE} = 1\text{ V}$, $-I_C = 500\text{ mA}$	Current Gain Group G H I	h_{FE}	110	183	-
		h_{FE}	177	250	-
		h_{FE}	250	380	-
		h_{FE}	40	-	-
Collector Base Cutoff Current at $-V_{CB} = 35\text{ V}$	$-I_{CBO}$	-	100	nA	
Emitter Base Cutoff Current at $-V_{EB} = 5\text{ V}$	$-I_{EBO}$	-	100	nA	
Collector Base Breakdown Voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	40	-	V	
Collector Emitter Breakdown Voltage at $-I_C = 1\text{ mA}$	$-V_{(BR)CEO}$	30	-	V	
Emitter Base Breakdown Voltage at $-I_E = 100\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	5	-	V	
Collector Emitter Saturation Voltage at $-I_C = 500\text{ mA}$, $-I_B = 50\text{ mA}$	$-V_{CE(sat)}$	-	0.6	V	
Base Emitter Saturation Voltage at $-I_C = 500\text{ mA}$, $-I_B = 50\text{ mA}$	$-V_{BE(sat)}$	-	1.2	V	
Base Emitter Voltage at $-V_{CE} = 1\text{ V}$, $-I_C = 100\text{ mA}$	$-V_{BE}$	-	1	V	
Gain Bandwidth Product at $-V_{CE} = 6\text{ V}$, $-I_C = 20\text{ mA}$	f_T	100	-	MHz	



Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

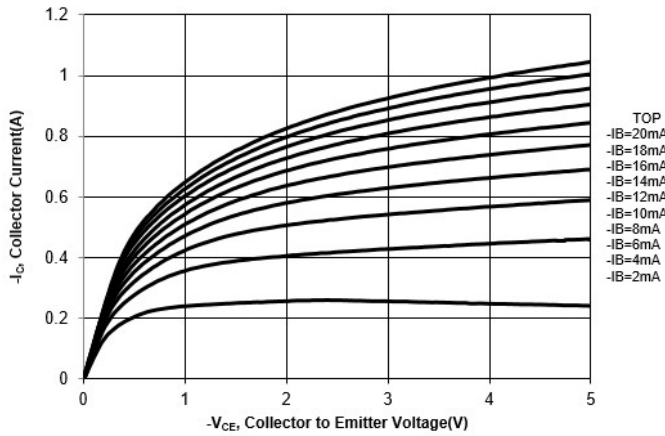


Fig. 2 Collector Current vs. Base to Emitter Voltage

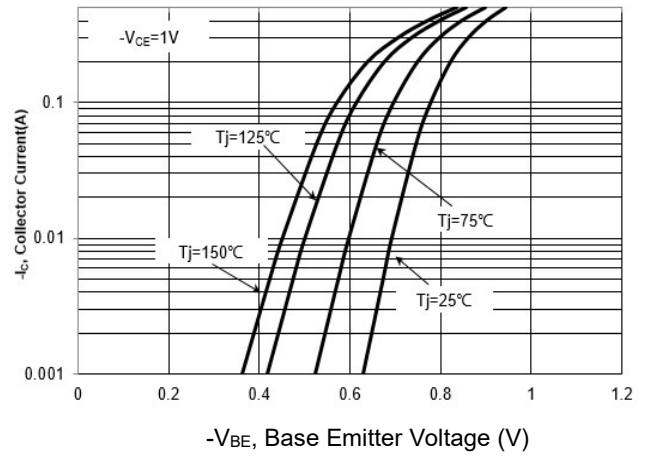


Fig. 3 DC Current Gain vs. Collector Current

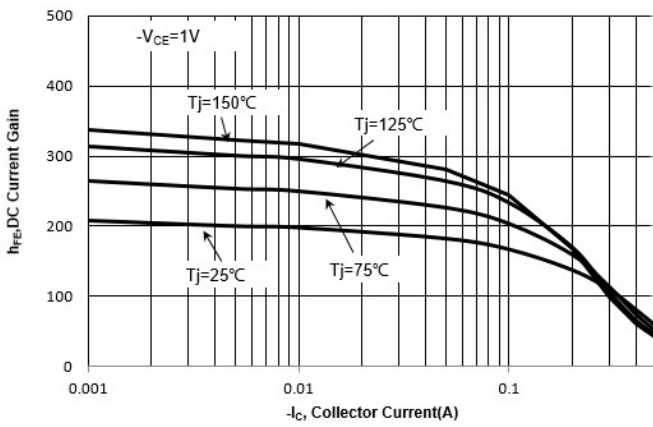
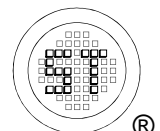
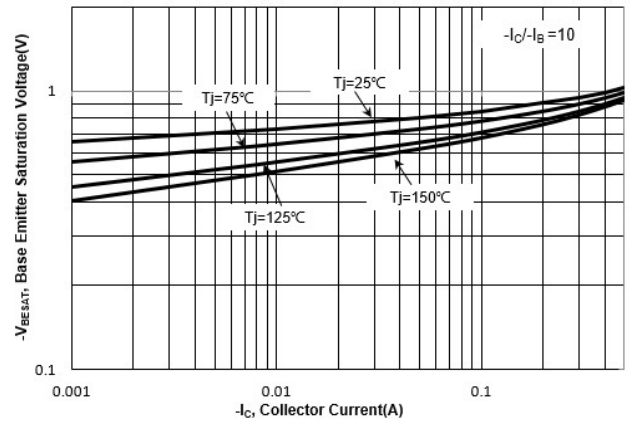


Fig. 4 V_{BESAT} vs. Collector Current



Electrical Characteristics Curves

Fig. 5 V_{CESAT} vs. Collector Current

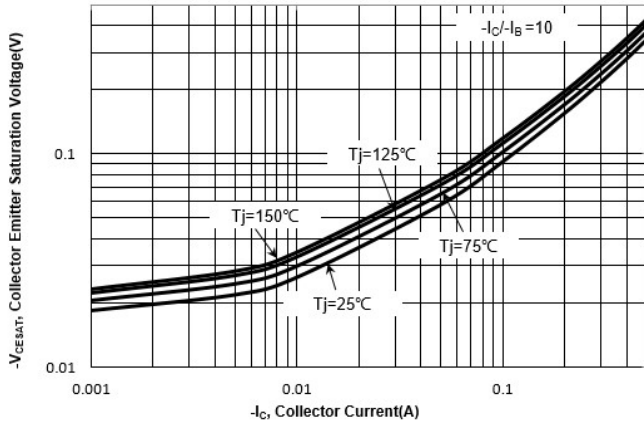


Fig. 6 Output Capacitance

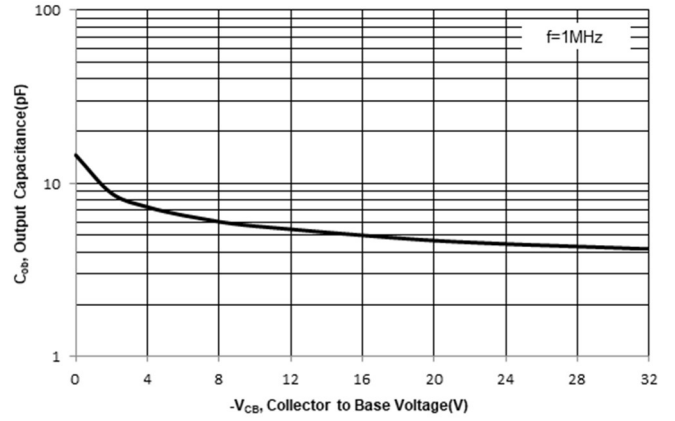


Fig. 7 Power Derating Curve

