

2SA952-HAF

PNP Silicon Epitaxial Planar Transistor

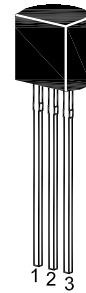
The transistor is subdivided into three group, M, L and K according to its DC current gain.

Features

- On special request, these transistors can be manufactured in different pin configurations
- Halogen and Antimony Free(HAF), RoHS compliant

Applications

- For switching and AF amplifier applications



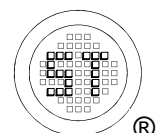
1. Emitter 2. Collector 3. Base
TO-92 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	30	V
Collector Emitter Voltage	$-V_{CEO}$	25	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	700	mA
Base Current	$-I_B$	150	mA
Power Dissipation	P_{tot}	600	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Thermal Characteristics

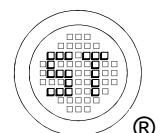
Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	208	$^\circ\text{C}/\text{W}$



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

Parameter	Symbol	Min.	Max.	Unit	
DC Current Gain at $-V_{CE} = 1\text{ V}$, $-I_C = 100\text{ mA}$ at $-V_{CE} = 1\text{ V}$, $-I_C = 700\text{ mA}$	Current Gain Group M L K	h_{FE}	90	180	-
		h_{FE}	135	270	-
		h_{FE}	200	400	-
		h_{FE}	50	-	-
Collector Base Cutoff Current at $-V_{CB} = 30\text{ V}$	$-I_{CBO}$	-	100	nA	
Emitter Base Cutoff Current at $-V_{EB} = 5\text{ V}$	$-I_{EBO}$	-	100	nA	
Collector Base Breakdown Voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	30	-	V	
Collector Emitter Breakdown Voltage at $-I_C = 2\text{ mA}$	$-V_{(BR)CEO}$	25	-	V	
Emitter Base Breakdown Voltage at $-I_E = 100\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	5	-	V	
Collector Emitter Saturation Voltage at $-I_C = 700\text{ mA}$, $-I_B = 70\text{ mA}$	$-V_{CE(sat)}$	-	0.6	V	
Base Emitter Saturation Voltage at $-I_C = 700\text{ mA}$, $-I_B = 70\text{ mA}$	$-V_{BE(sat)}$	-	1.2	V	
Base Emitter Voltage at $-V_{CE} = 6\text{ V}$, $-I_C = 10\text{ mA}$	$-V_{BE}$	0.6	0.7	V	
Gain Bandwidth Product at $-V_{CE} = 6\text{ V}$, $I_E = 10\text{ mA}$	f_T	50	-	MHz	
Collector to Base Capacitance at $-V_{CB} = 6\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	40	pF	



Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

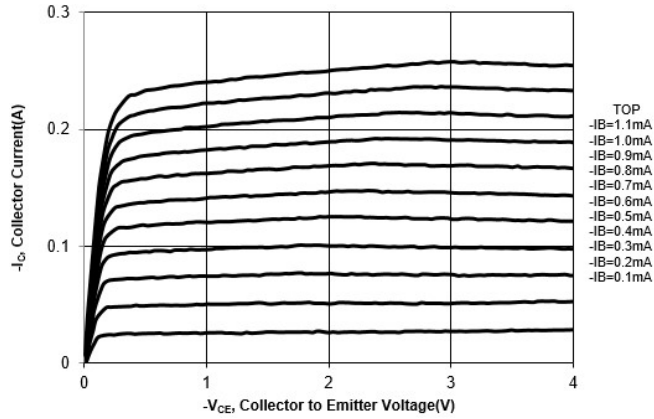


Fig. 2 Collector Current vs. Base to Emitter Voltage

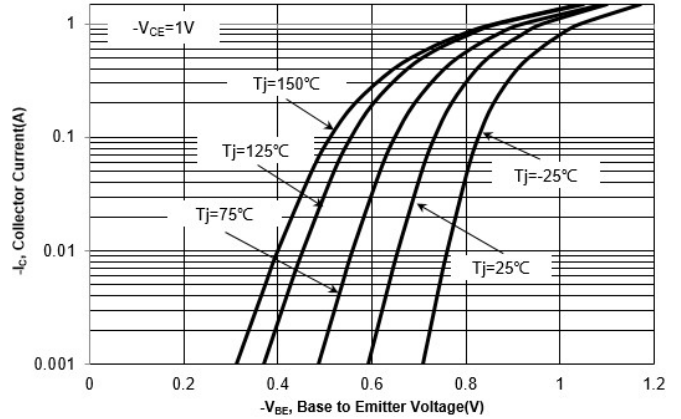


Fig. 3 DC Current Gain vs. Collector Current

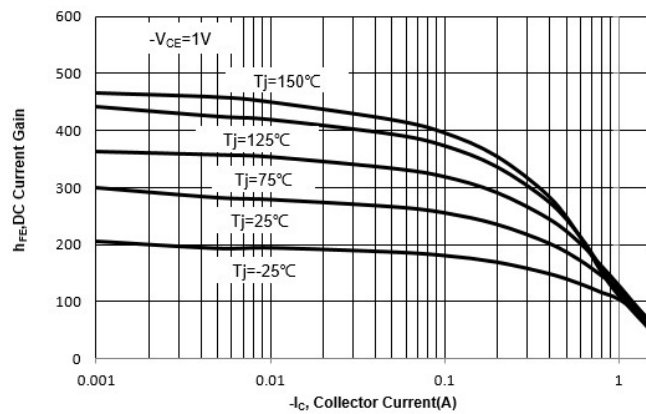
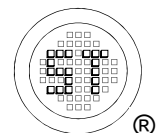
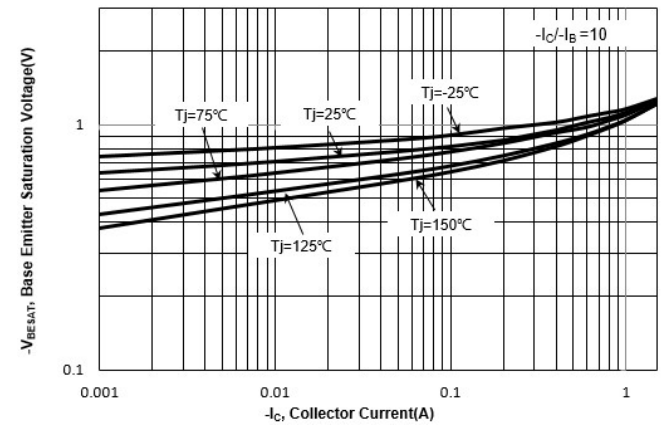


Fig. 4 V_{BESAT} vs. Collector Current



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Electrical Characteristics Curves

Fig. 5 V_{CESAT} vs. Collector Current

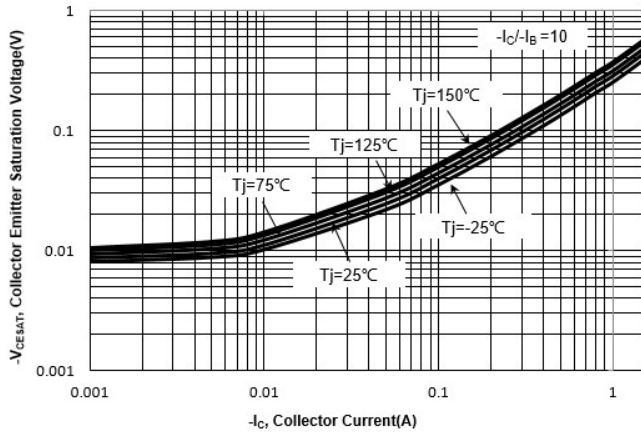


Fig. 6 Output Capacitance

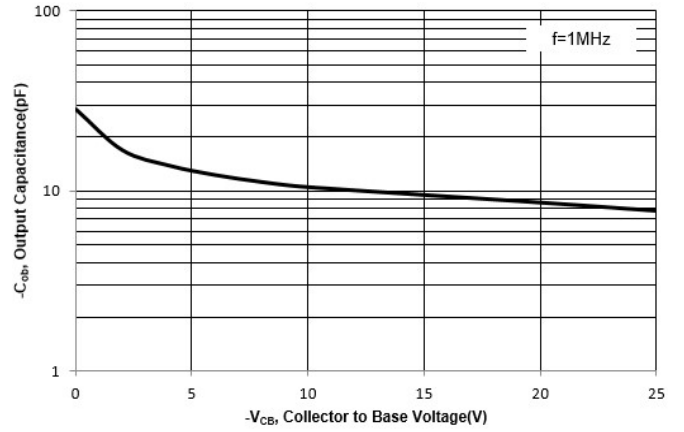


Fig. 7 Power Derating Curve

