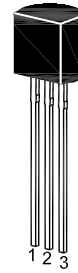


2SC2240-HAF

NPN Silicon Epitaxial Planar Transistor

Features

- The transistor is subdivided into two groups, G and L according to its DC current gain
- On special request, these transistors can be manufactured in different pin configurations
- Halogen and Antimony Free(HAF), RoHS compliant



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

Applications

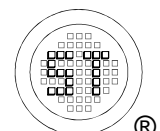
- For low noise audio amplifier

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CB0}	120	V
Collector Emitter Voltage	V_{CE0}	120	V
Emitter Base Voltage	V_{EB0}	5	V
Collector Current	I_C	100	mA
Base Current	I_B	20	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

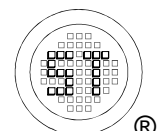
Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	200	$^\circ\text{C/W}$



2SC2240-HAF

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 6\text{ V}$, $I_C = 2\text{ mA}$ Current Gain Group G L	h_{FE}	200	-	400	-
	h_{FE}	350	-	700	-
Collector Base Cutoff Current at $V_{CB} = 120\text{ V}$	I_{CBO}	-	-	100	nA
Emitter Base Cutoff Current at $V_{EB} = 5\text{ V}$	I_{EBO}	-	-	100	nA
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	120	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	120	-	-	V
Emitter Base Breakdown Voltage at $I_E = 10\text{ }\mu\text{A}$	$V_{(BR)EBO}$	5	-	-	V
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$	$V_{CE(sat)}$	-	-	0.3	V
Transition Frequency at $V_{CE} = 6\text{ V}$, $I_C = 1\text{ mA}$	f_T	-	100	-	MHz
Output Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	-	6	pF



2SC2240-HAF

Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

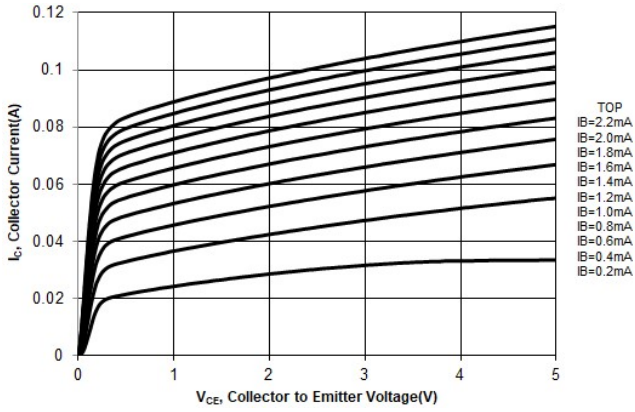


Fig. 2 Collector Current vs. Base to Emitter Voltage

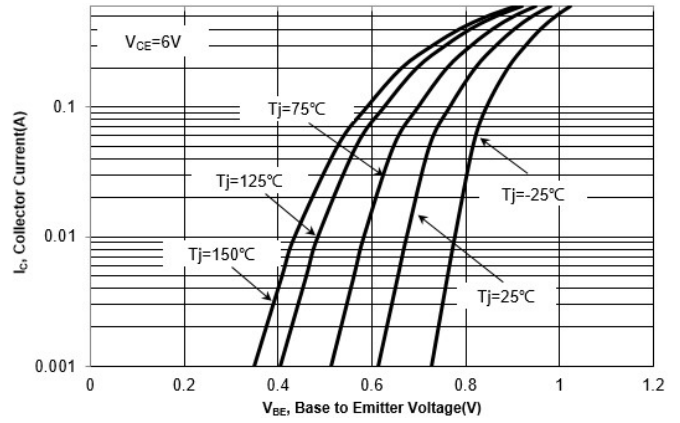


Fig. 3 $h_{FE,DC}$ Current Gain vs. Collector Current

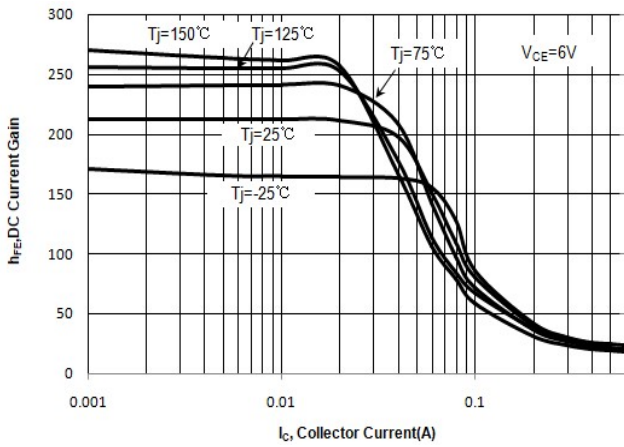
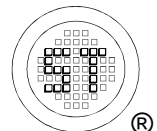
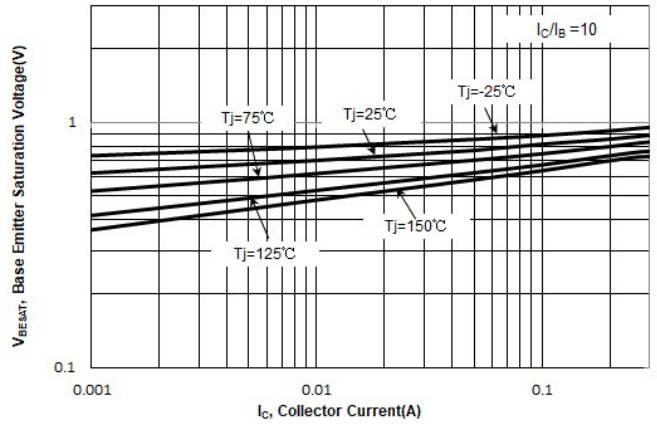


Fig. 4 $V_{BE(sat)}$ vs. Collector Current



2SC2240-HAF

Electrical Characteristics Curves

Fig. 5 $V_{CE(sat)}$ vs. Collector Current

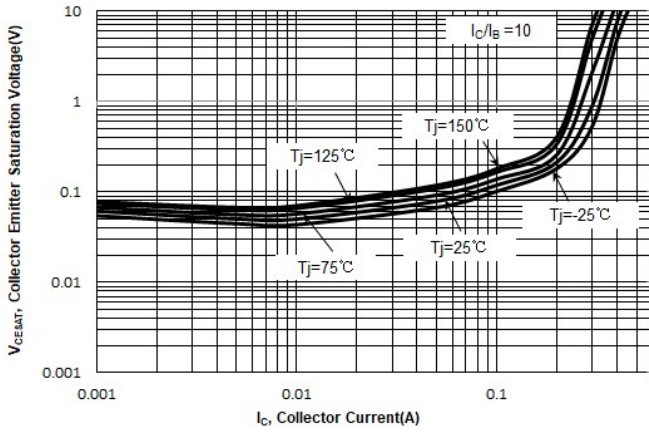


Fig. 6 Output Capacitance

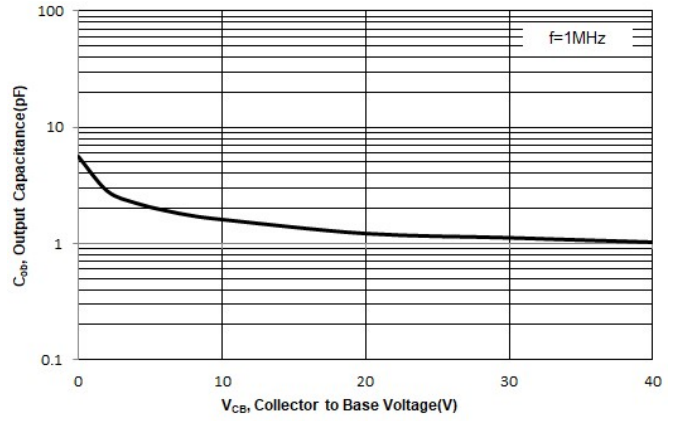


Fig. 7 Power Derating Curve

