



# SANYO Semiconductors DATA SHEET

## 2SC3689 — NPN Epitaxial Planar Silicon Transistor High-hFE, Low-Frequency General-Purpose Amplifier Applications

### Applications

- Low-frequency general-purpose amplifiers, drivers, muting circuit.

### Features

- Small Cob (Cob=1.5pF).
- Ultrasmall-sized package permitting 2SC3689-used sets to be made smaller, slimmer.
- Adoption of MBIT process.
- High DC current gain (hFE=800 to 3200).
- Low collector-to-emitter saturation voltage (VCE(sat)≤0.5V).
- High VEBO (VEBO≥15V).

### Specifications

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		60	V
Collector-to-Emitter Voltage	VCEO		50	V
Emitter-to-Base Voltage	VEBO		15	V
Collector Current	IC		100	mA
Collector Current (Pulse)	ICP		200	mA
Collector Dissipation	PC		200	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

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D1907LA TI IM TC-00001108 / 61704TN(PC)/N3098HA(KT)/4237AT/N195KI,TS No.1855-1/4

# 2SC3689

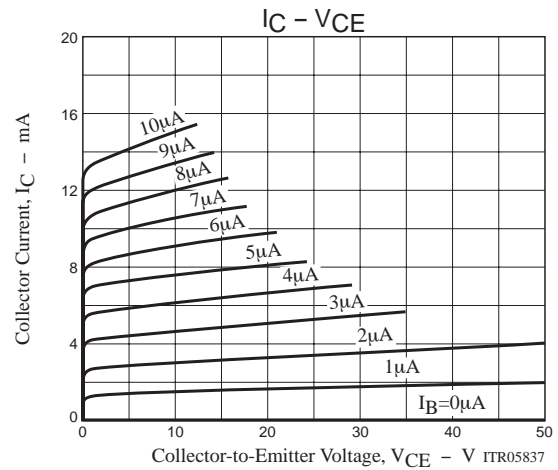
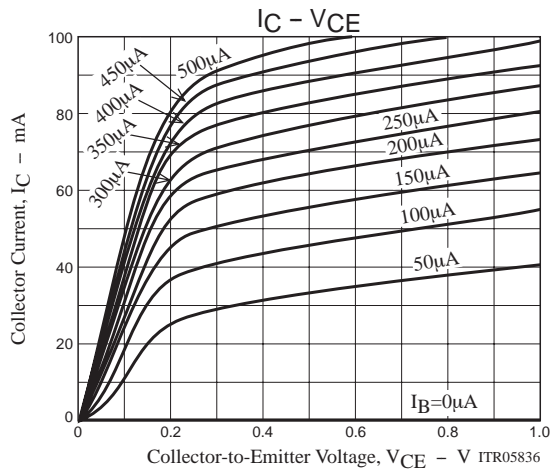
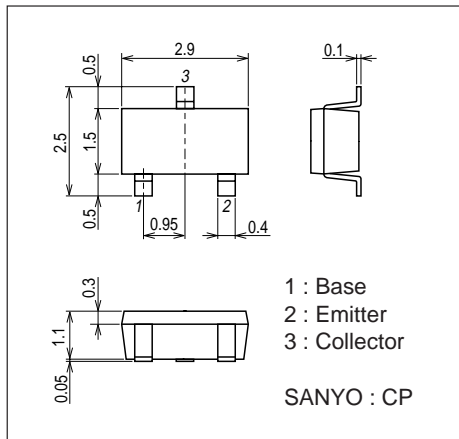
## Electrical Characteristics at $T_a=25^\circ\text{C}$

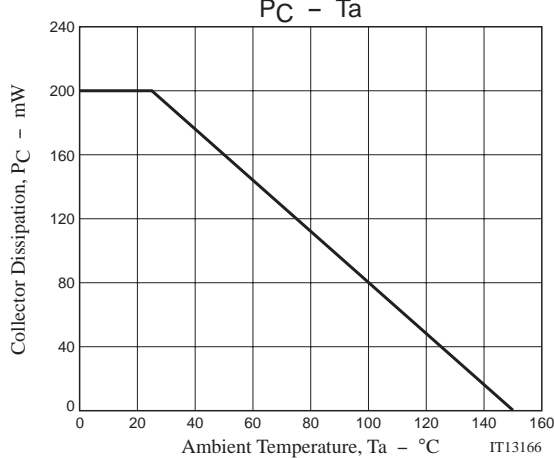
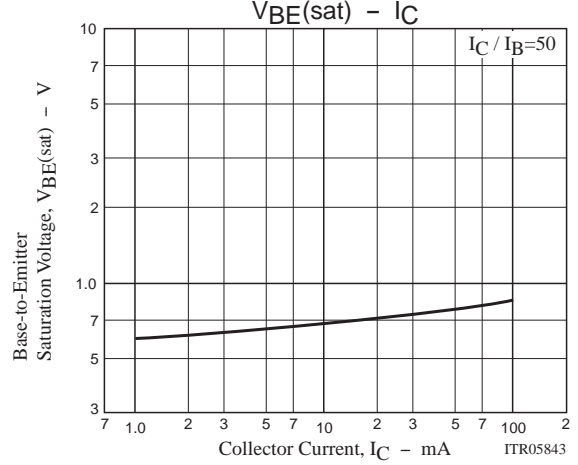
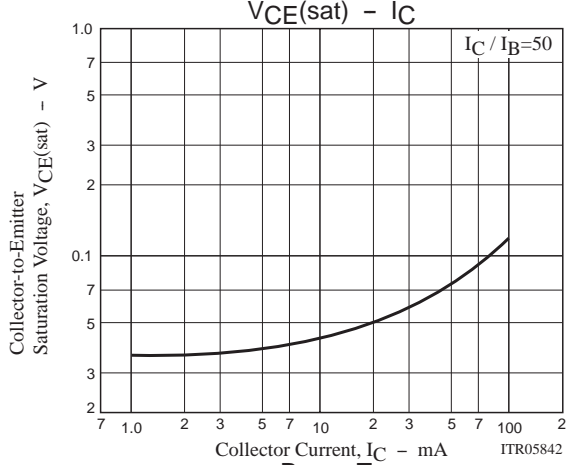
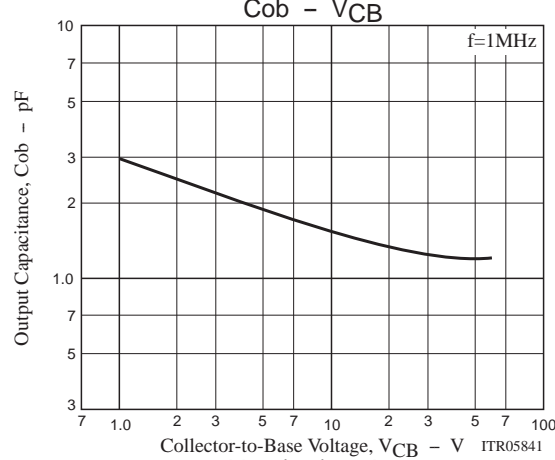
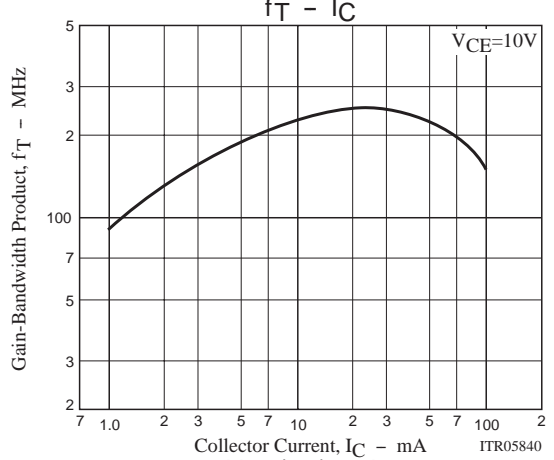
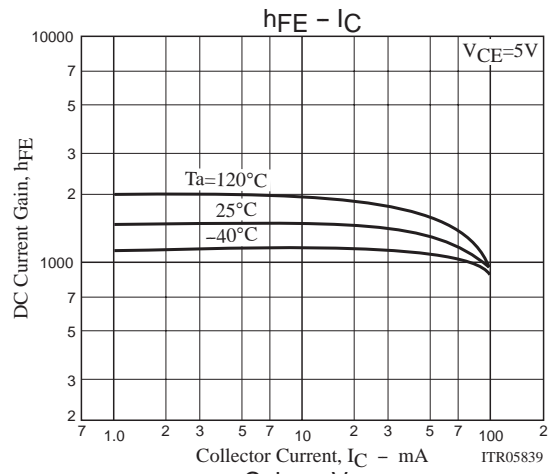
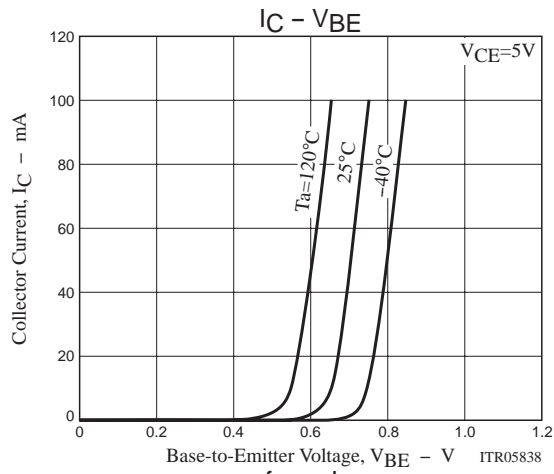
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=40\text{V}, I_E=0\text{A}$			0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=10\text{V}, I_C=0\text{A}$			0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	800	1500	3200	
Gain-Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=10\text{mA}$		200		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		1.5		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50\text{mA}, I_B=1\text{mA}$		0.1	0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=50\text{mA}, I_B=1\text{mA}$		0.8	1.1	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0\text{A}$	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0\text{A}$	15			V

## Package Dimensions

unit : mm (typ)

7013A-009





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