



SANYO Semiconductors

## DATA SHEET

# JCH3101

 — PNP Epitaxial Planar Silicon Transistors  
**For Automotive Audios**

## Features

- Adoption of MBIT processes.
- High breakdown voltage and large current capacity.
- High-speed switching.
- High reliability. / Reliability test 2000 hours guarantee.

## Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		-100	V
Collector-to-Emitter Voltage	VCEO		-100	V
Emitter-to-Base Voltage	VEBO		-6	V
Collector Current	IC		-1	A
Collector Current (Pulse)	ICP		-2	A
Collector Dissipation	PC	When mounted on ceramic substrate (600mm <sup>2</sup> X0.8mm)	0.9	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V <sub>CB</sub> =-100V, I <sub>E</sub> =0A			-100	nA
Emitter Cutoff Current	IEBO	V <sub>EB</sub> =-4V, I <sub>C</sub> =0A			-100	nA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-100mA	140		400	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-100mA		120		MHz
Output Capacitance	Cob	V <sub>CB</sub> =-10V, f=1MHz		13		pF

Marking : 5A

Continued on next page.

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**SANYO Semiconductor Co., Ltd.**

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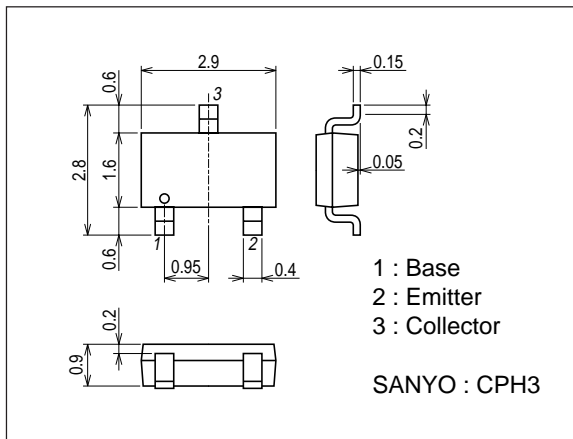
# JCH3101

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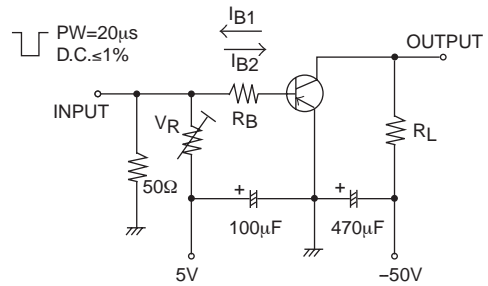
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -400\text{mA}, I_B = -40\text{mA}$		-0.2	-0.6	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -400\text{mA}, I_B = -40\text{mA}$		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0\text{A}$	-100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-100			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0\text{A}$	-6			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		80		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		700		ns
Fall Time	$t_f$	See specified Test Circuit.		40		ns

## Package Dimensions

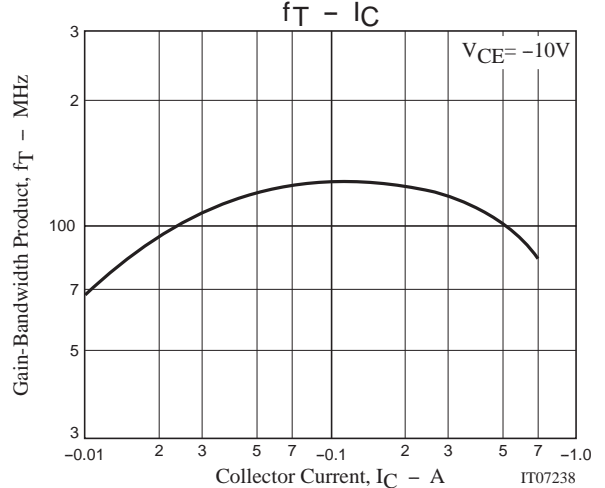
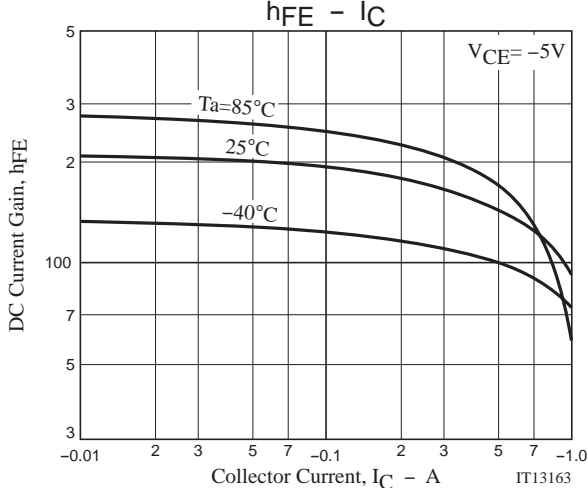
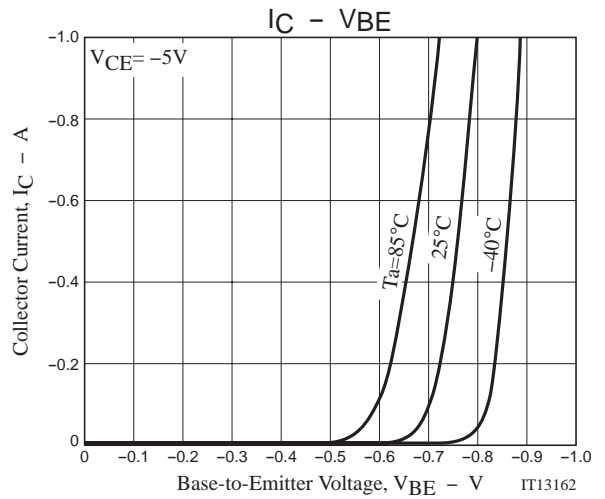
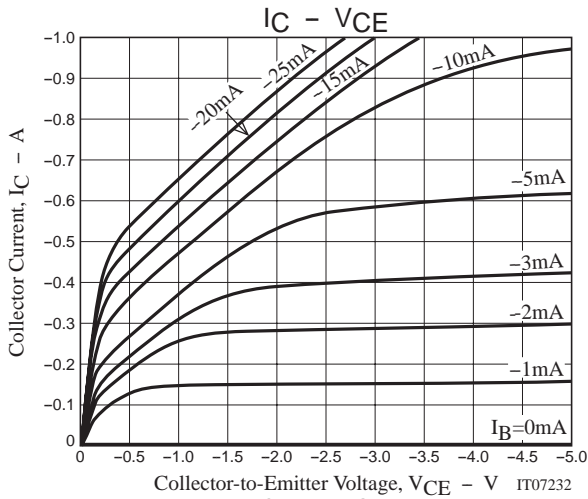
unit : mm (typ)  
7015A-003

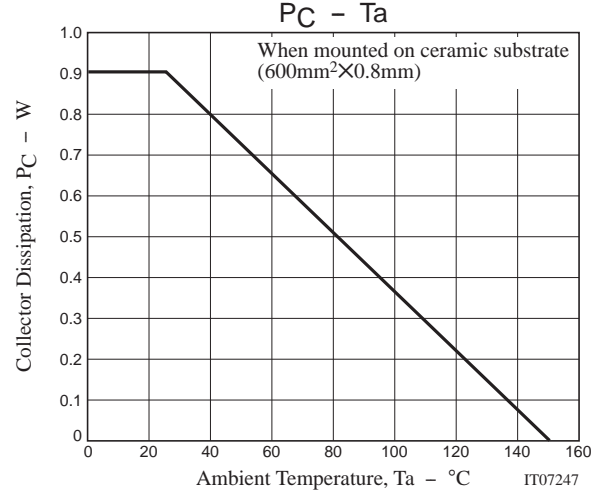
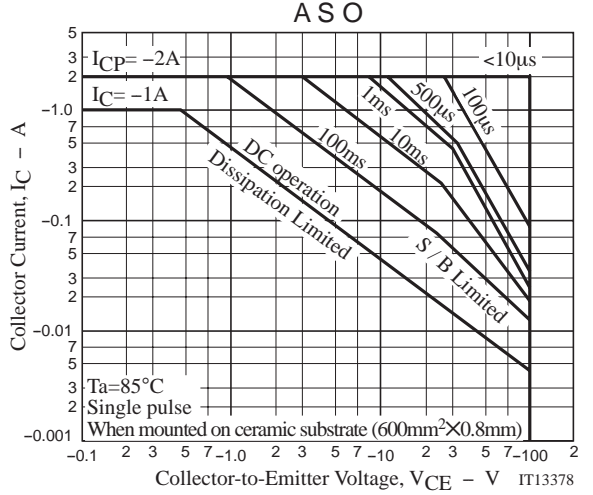
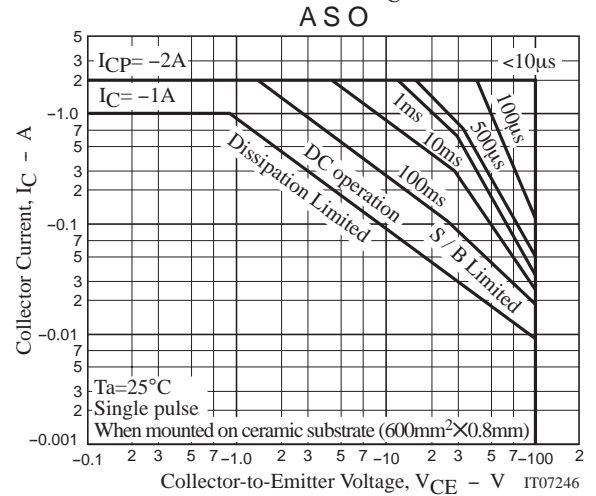
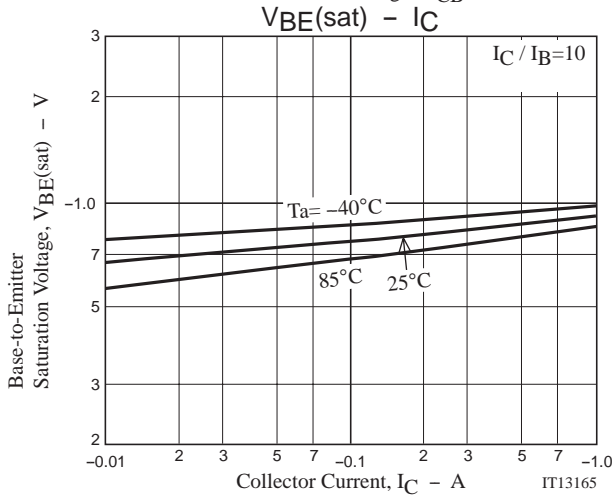
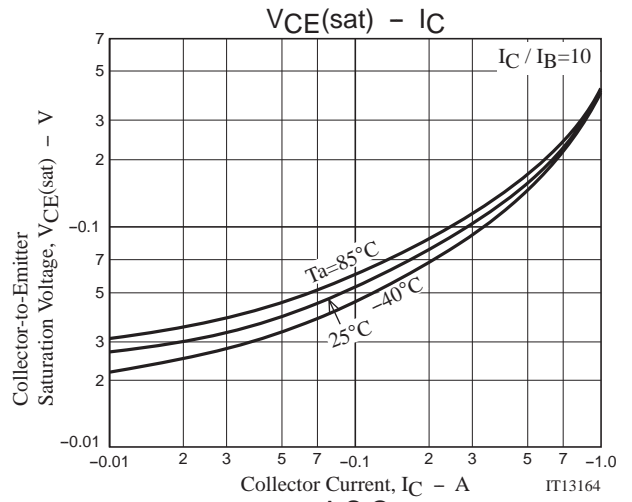
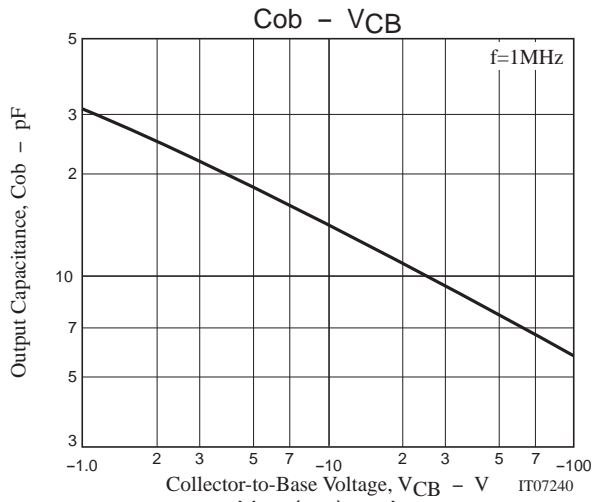


## Switching Time Test Circuit



$$I_C = -10I_{B1} = 10I_{B2} = -400\text{mA}$$





# JCH3101

## JCH3101 Reliability Assurance

Test	Test Conditions	Test Time	LTPD
Environmental Test			
Temperature Cycle	-55°C to 150°C (30 min each)	500 cycles	10%
Thermal Shock	100°C to 0°C (5 min each)	250 cycles	10%
Pressure Cooker Test (Autoclave)	Ta=121°C, 100%RH, 203kPa	200 hrs	10%
Endurance Test			
Steady State Operating Life	Ta=25°C, Tj=150°C	2000 hrs	10%
Intermittent Operating Life	Ta=25°C, ΔTj=90°C	20000 cycles	10%
High Temperature Reverse Bias	Ta=150°C, VCES=100V	2000 hrs	10%
Temperature Humidity Storage	Ta=85°C, 85%RH	2000 hrs	10%
High Temperature Storage	Ta=150°C	2000 hrs	10%
Low Temperature Storage	Ta=-55°C	2000 hrs	10%
Temperature Humidity Reverse Bias	Ta=85°C, 85%RH, VCES=100V	2000 hrs	10%
Electrostatic Discharges			
Machine Model	C=200pF, R=0Ω, 3 times	200V	

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