



JCH3201

NPN 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	V _{CB0}		100	V
Collector-to-Emitter Voltage	V _{CEO}		100	V
Emitter-to-Base Voltage	V _{EBO}		6	V
Collector Current	I _C		1	A
Collector Current (Pulse)	I _{CP}		2	A
Collector Dissipation	P _C	When mounted on ceramic substrate (600mm ² ×0.8mm)	0.9	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CB0}	V _{CB} =100V, I _E =0A			100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} =4V, I _C =0A			100	nA
DC Current Gain	h _{FE}	V _{CE} =5V, I _C =100mA	140		400	
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =100mA		120		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		8.5		pF

Marking : 5B

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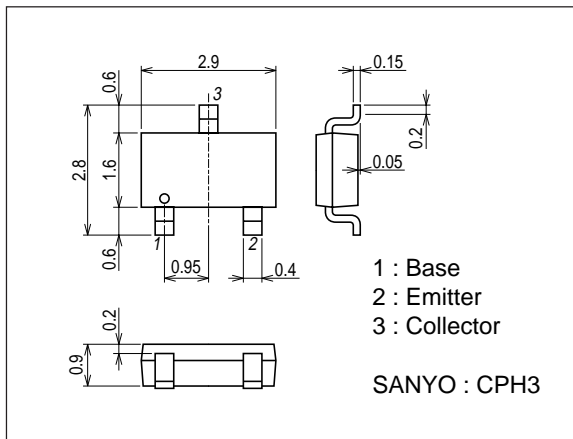
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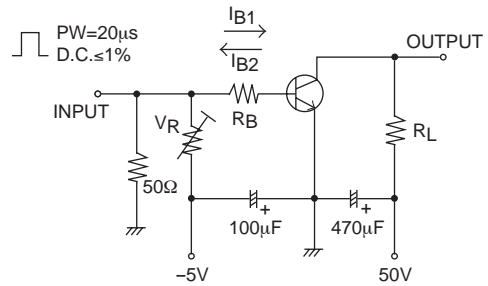
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=400mA, I_B=40mA$		0.1	0.4	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=400mA, I_B=40mA$		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	100			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	6			V
Turn-ON Time	t_{on}	See specified Test Circuit.		80		ns
Storage Time	t_{stg}	See specified Test Circuit.		850		ns
Fall Time	t_f	See specified Test Circuit.		50		ns

Package Dimensions

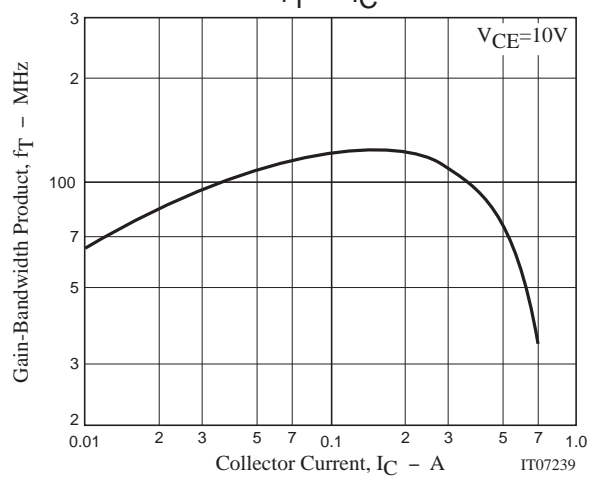
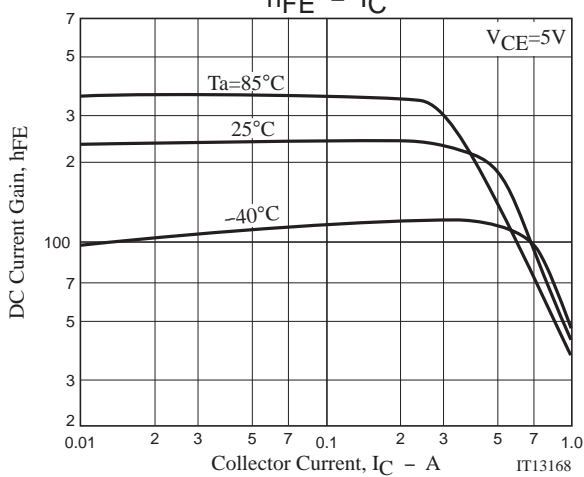
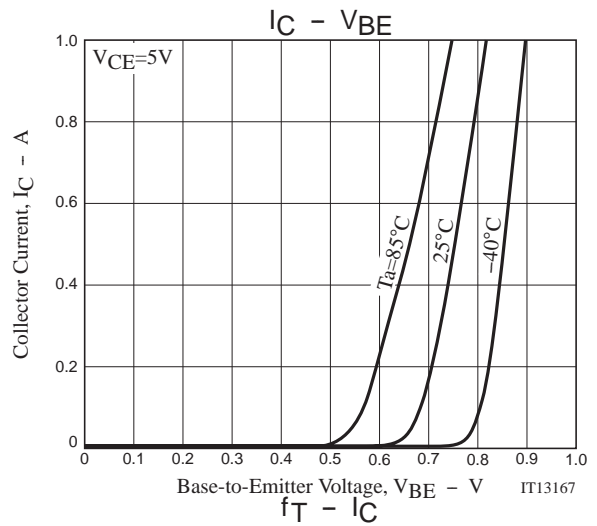
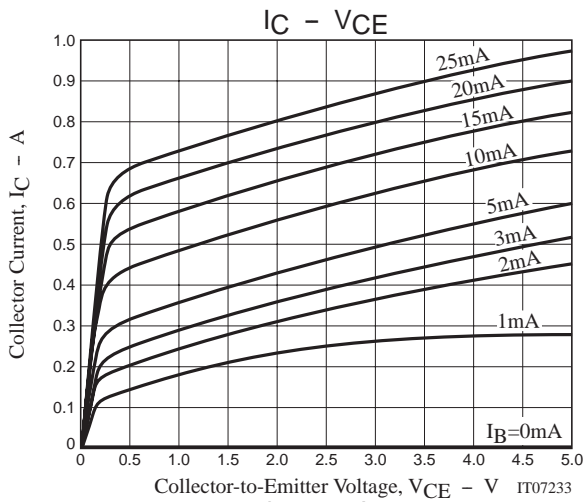
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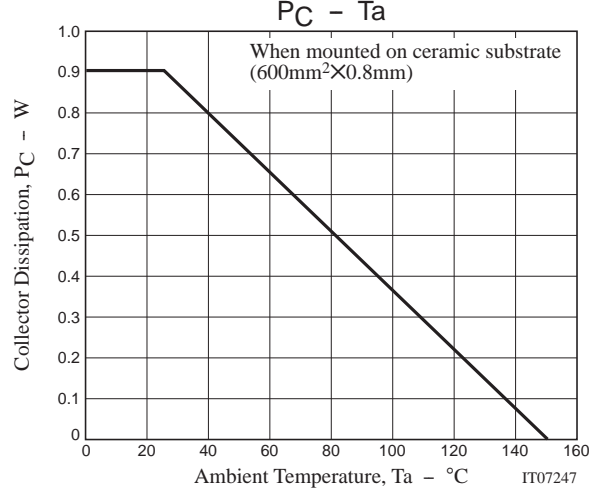
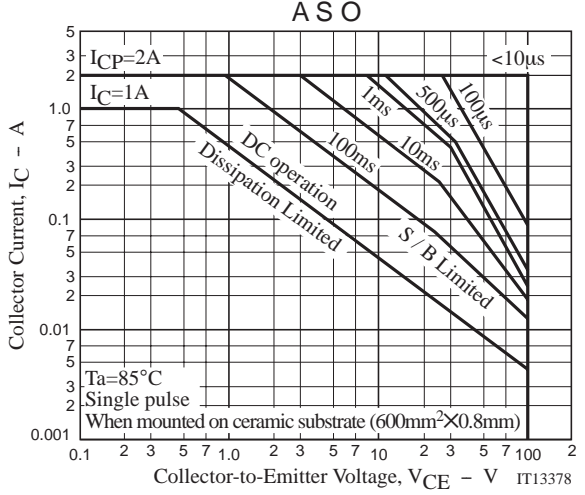
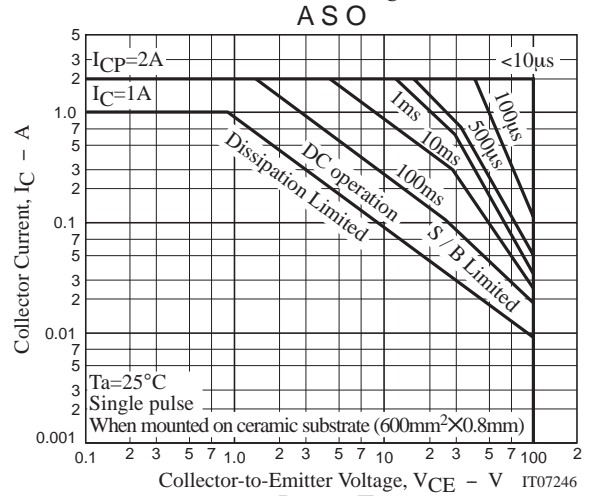
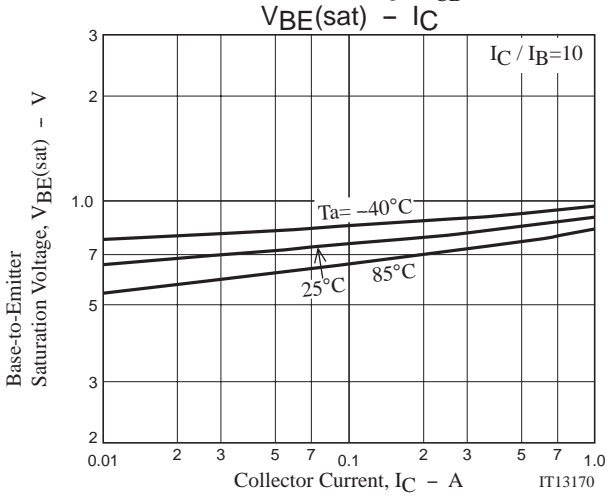
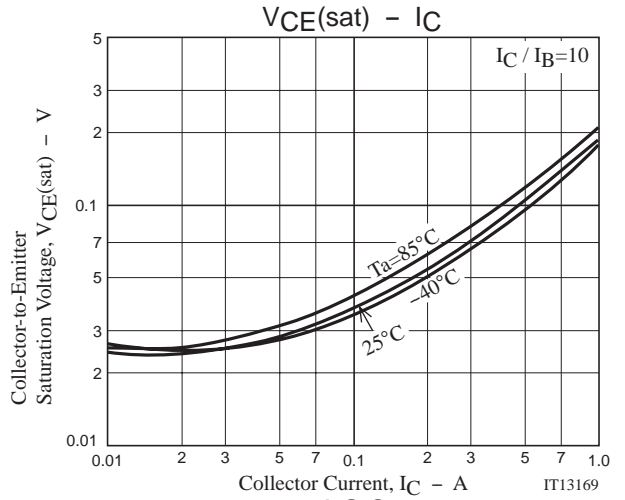
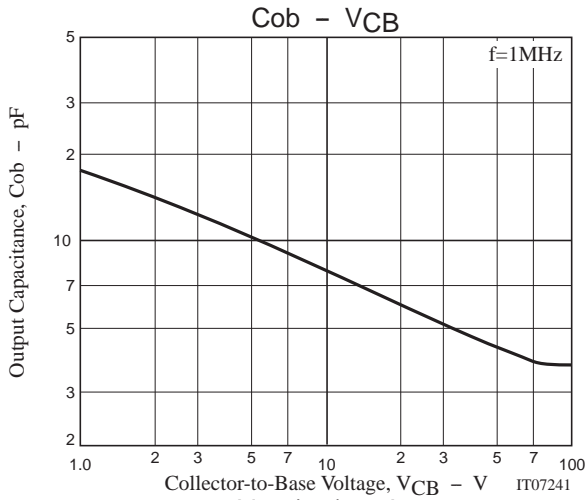


Switching Time Test Circuit



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





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JCH3201 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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