



# SCH2201

— NPN Epitaxial Planar Silicon Transistor

## Switching, Driver Applications

### Applications

- Low-frequency General-Purpose amplifier, high-speed switching, motor drivers, muting.

### Features

- Composite type with 2 NPN transistors contained in a single package, facilitating high-density mounting.
- Ultrasmall package permitting applied sets to be small and slim.

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		20	V
Collector-to-Emitter Voltage	VCEO		15	V
Emitter-to-Base Voltage	VEBO		5	V
Collector Current	IC		0.8	A
Collector Current (Pulse)	ICP		1.6	A
Collector Dissipation	PC	When mounted on ceramic substrate (900mm <sup>2</sup> X0.8mm) 1unit	0.4	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> =12V, 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	hFE	V <sub>CE</sub> =2V, I <sub>C</sub> =50mA	300		800	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =50mA		440		MHz
Output Capacitance	Cob	V <sub>CB</sub> =10V, f=1MHz		4		pF

Marking : EB

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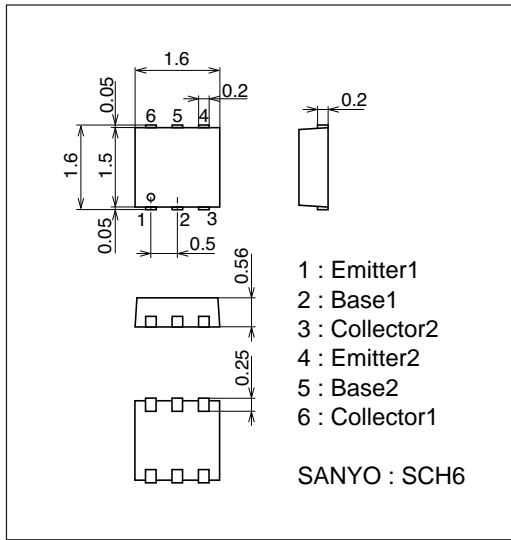
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=400mA, I_B=20mA$		140	280	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=400mA, I_B=20mA$		0.8	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	20			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	5			V
Turn-ON Time	$t_{on}$	See specified test circuit.		30		ns
Storage Time	$t_{stg}$	See specified test circuit.		165		ns
Fall Time	$t_f$	See specified test circuit.		25		ns

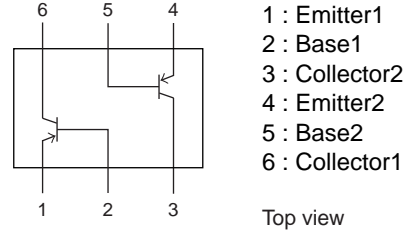
## Package Dimensions

unit : mm (typ)

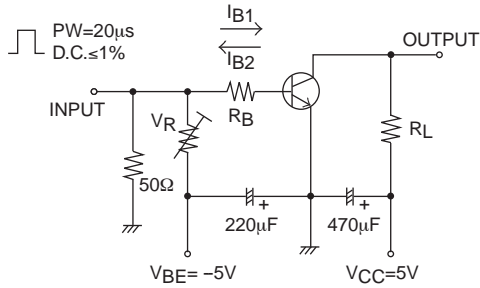
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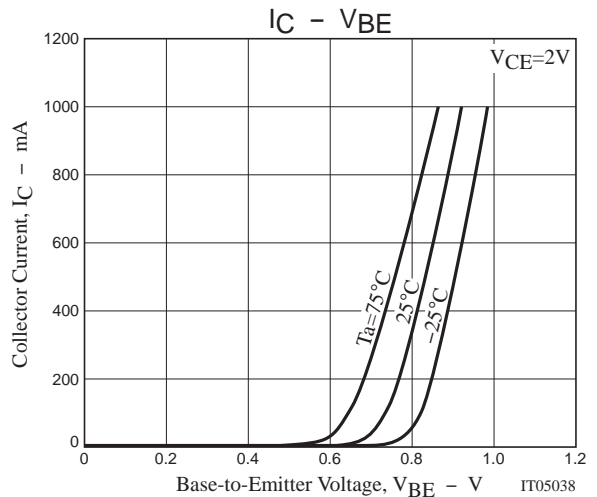
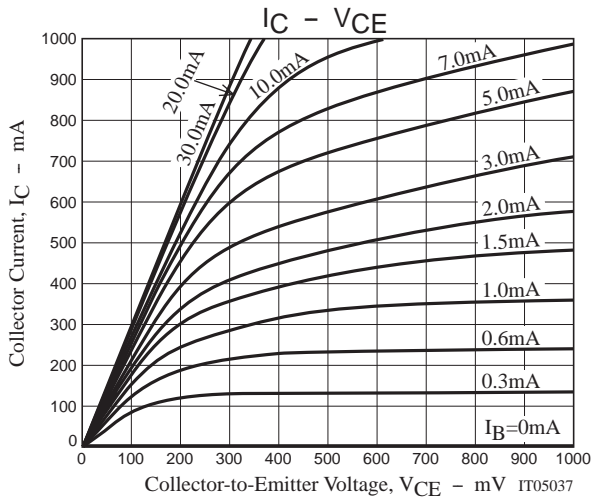
## Electrical Connection



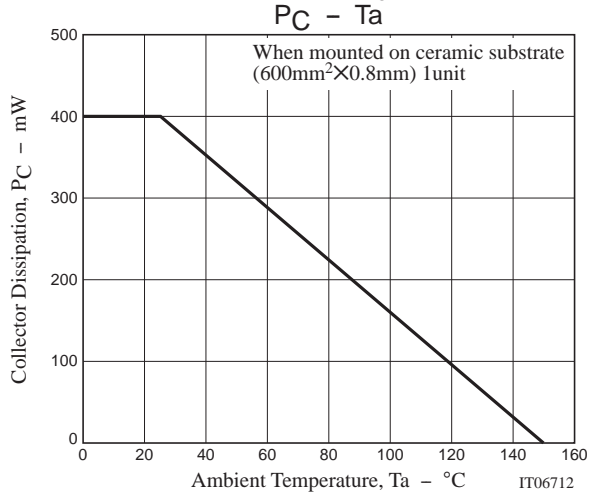
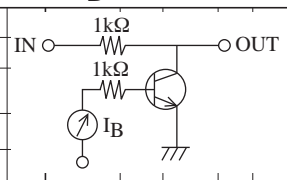
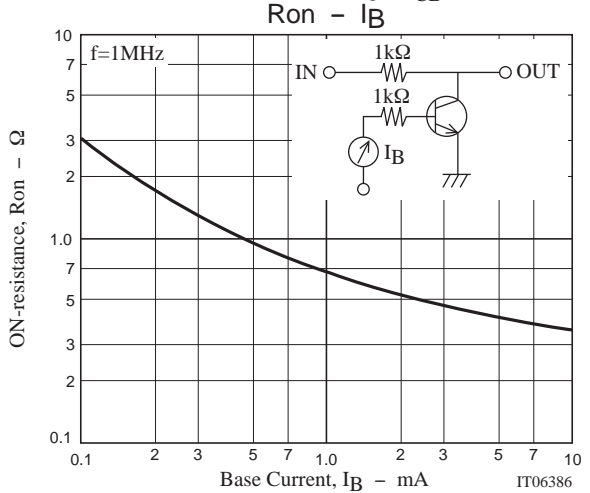
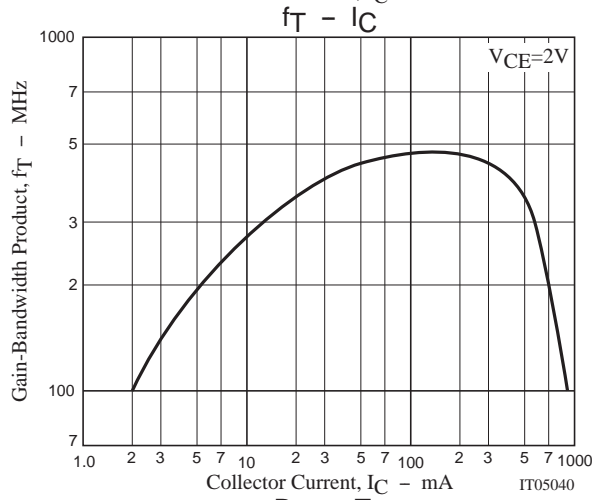
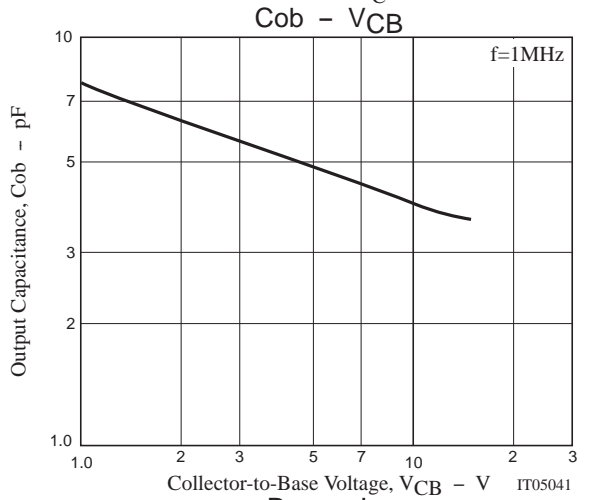
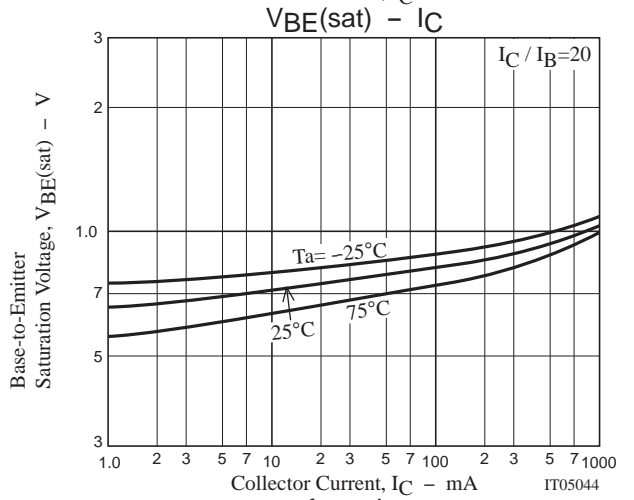
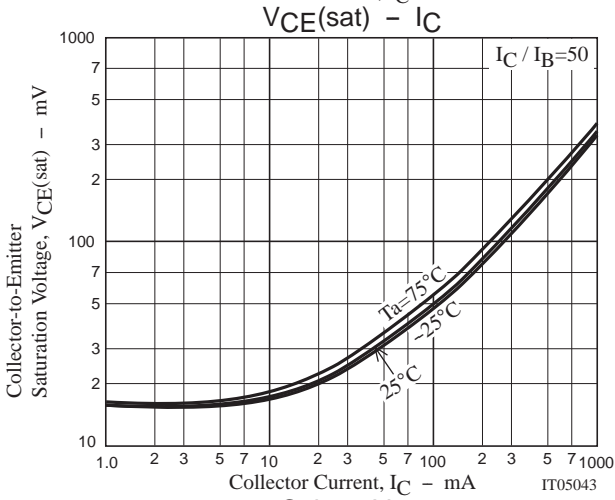
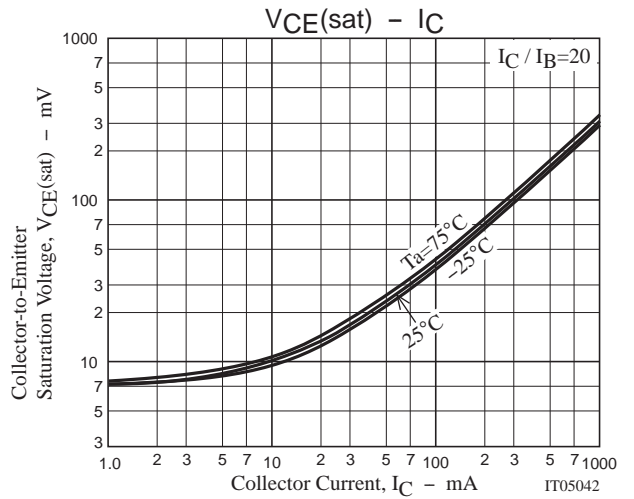
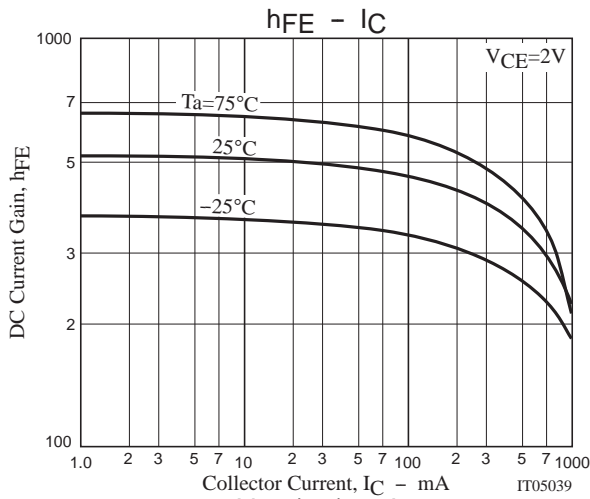
## Switching Time Test Circuit



$$I_C = 20I_{B1} = -20I_{B2} = 400mA$$



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