SANYO Semiconductors

DATA SHEET

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	V_{CBO}		20	V
Collector-to-Emitter Voltage	V_{CEO}		15	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		0.8	A
Collector Current (Pulse)	I_{CP}		1.6	A
Collector Dissipation	P_C	When mounted on ceramic substrate (900mm²X0.8mm) 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	I_{CBO}	V_{CB}=12V, 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}=2V, I_C=50mA	300		800	
Gain-Bandwidth Product	f_T	V_{CE}=2V, I_C=50mA		440		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		4		pF

Marking : EB

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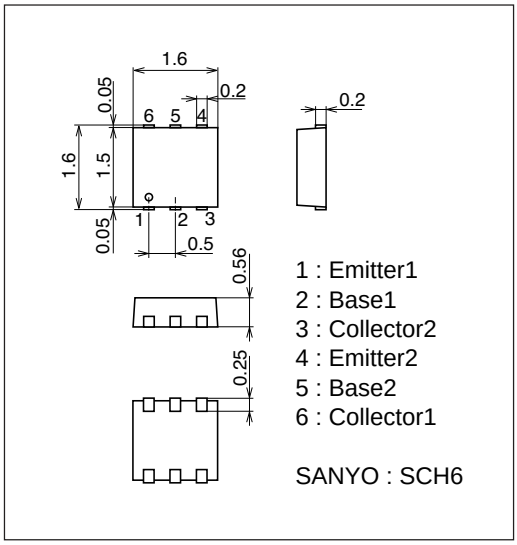
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE}(sat)$	I_C=400mA, I_B=20mA		140	280	mV
Base-to-Emitter Saturation Voltage	$V_{BE}(sat)$	I_C=400mA, I_B=20mA		0.8	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0A	20			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0A	5			V
Turm-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

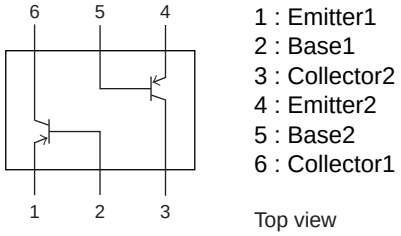
Package Dimensions

unit : mm (typ)

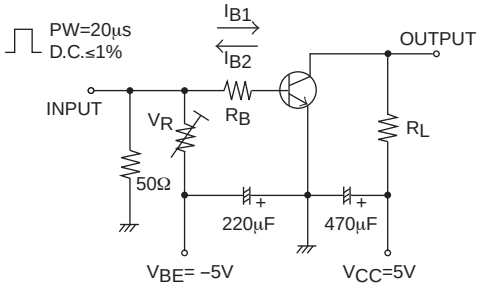
7028-004



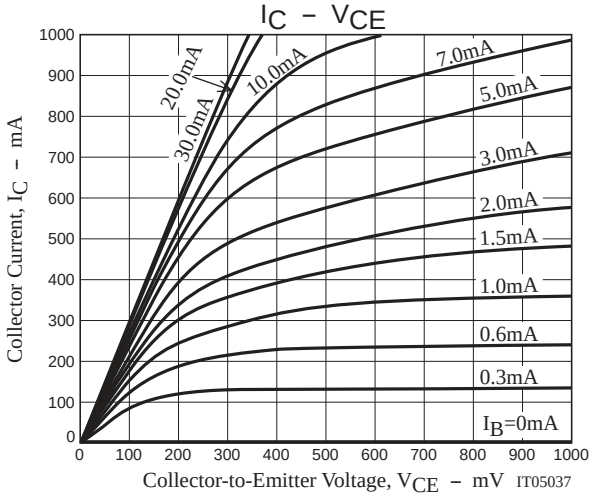
Electrical Connection

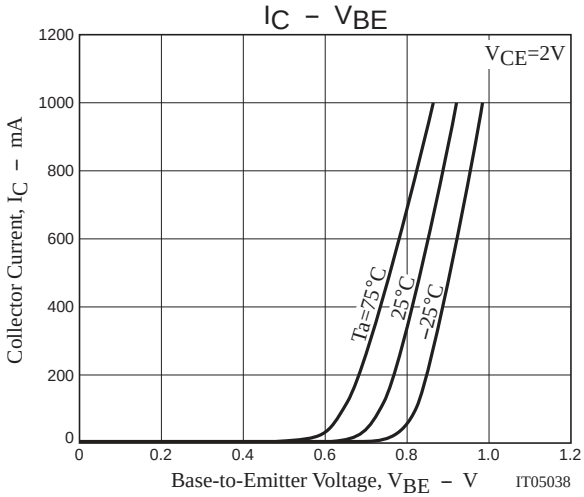


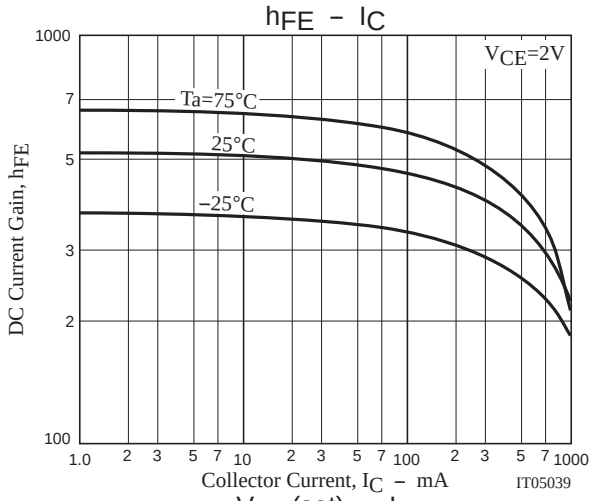
Switching Time Test Circuit

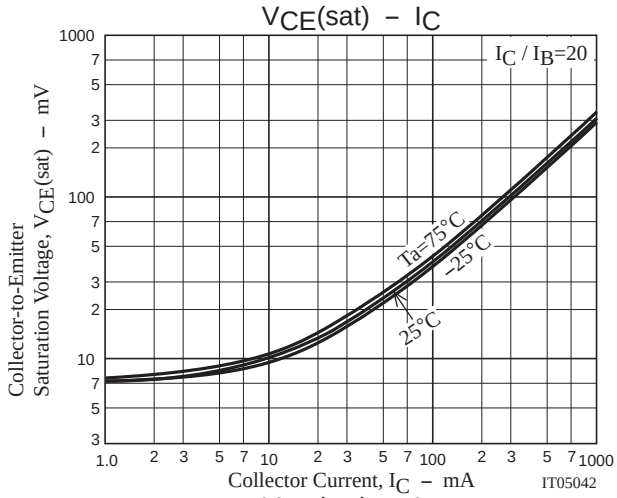


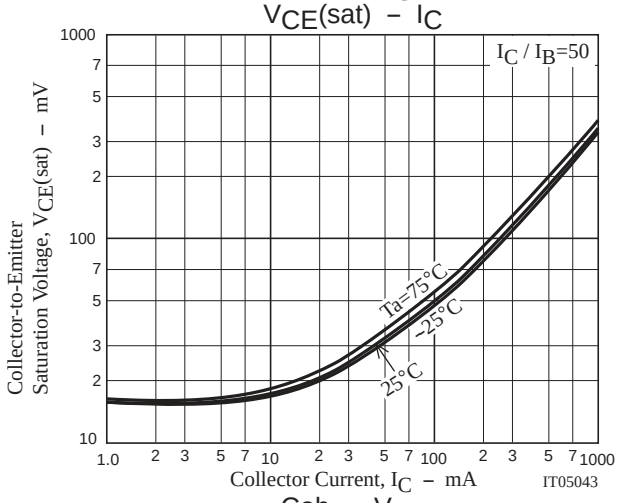
I_C=20I_{B1}= −20I_{B2}=400mA

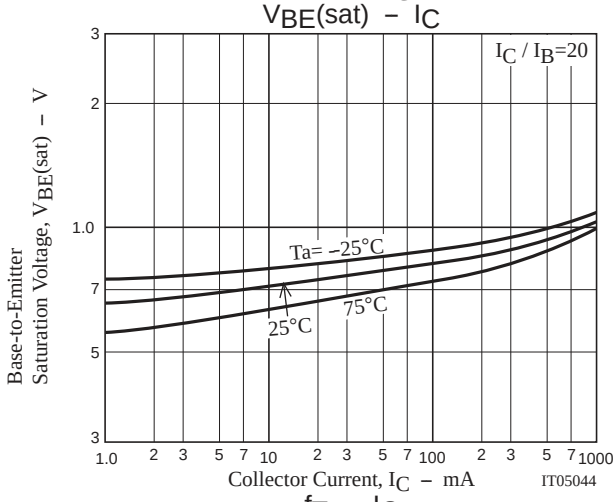


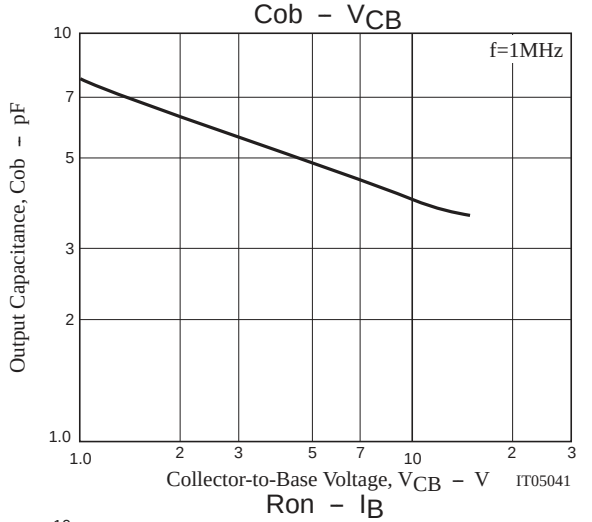


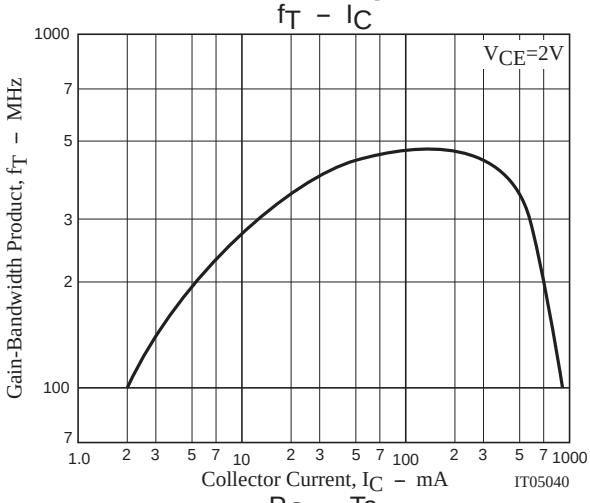

hFE – IC
VCE=2V
Ta=75°C
25°C
–25°C
DC Current Gain, hFE
Collector Current, IC – mA
IT05039

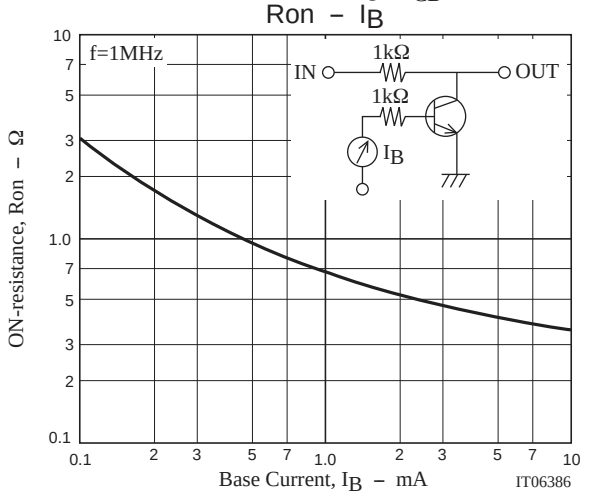

VCE(sat) – IC
IC / IB=20
Ta=75°C
–25°C
25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – mA
IT05042

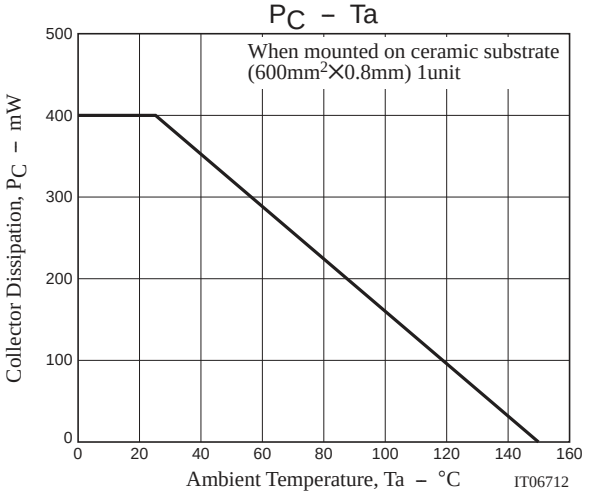

VCE(sat) – IC
IC / IB=50
Ta=75°C
–25°C
25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – mA
IT05043


VBE(sat) – IC
IC / IB=20
Ta= –25°C
25°C
75°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – mA
IT05044


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT05041


fT – IC
VCE=2V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
IT05040


Ron – IB
f=1MHz
IN
1kΩ
1kΩ
OUT
IB
ON-resistance, Ron – Ω
Base Current, IB – mA
IT06386


PC – Ta
When mounted on ceramic substrate
(600mm2×0.8mm) 1unit
Collector Dissipation, PC – mW
Ambient Temperature, Ta – °C
IT06712