Ordering number : EN2958B

SANYO Semiconductors
DATA SHEET

2SC4390 — NPN Epitaxial Planar Silicon Transistor
High h_{FE}, AF Amplifier Applications

Features

- Adoption of MBIT process.
- High DC current gain (h_{FE}=800 to 3200).
- Large current capacity (I_C=2A).
- Low collector-to-emitter saturation voltage ($V_{CE}(sat)$≤0.3V).
- High V_{EBO} (V_{EBO}≥15V).

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}		10	V
Emitter-to-Base Voltage	V_{EBO}		15	V
Collector Current	I_C		2	A
Collector Current (Pulse)	I_{CP}		4	A
Base Current	I_B		0.4	A
Collector Dissipation	P_C		500	mW
		Mounted on a ceramic board (250mm²×0.8mm)	1.3	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}=15V, I_E=0A			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=10V, I_C=0A			0.1	μA

Marking : CJ

Continued on next page.

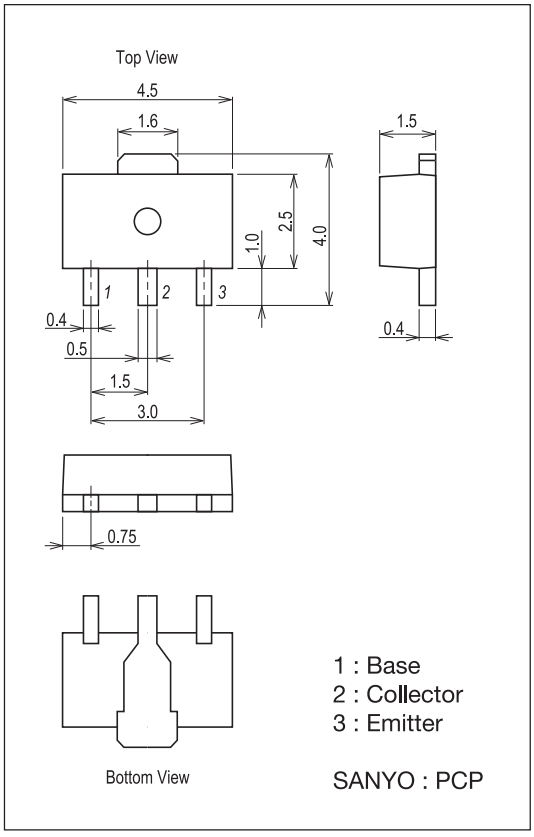
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	$h_{FE}1$	V_{CE}=2V, I_C=500mA	800	1500	3200	
	$h_{FE}2$	V_{CE}=2V, I_C=2A	400			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA		260		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		28		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=1A, I_B=20mA		0.11	0.5	V
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=1A, I_B=20mA		0.87	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}=∞	10			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0A	15			V
Turn-ON Time	t_{on}	See specified Test Circuit.		0.13		μs
Storage Time	t_{stg}	See specified Test Circuit.		0.8		μs
Fall Time	t_f	See specified Test Circuit.		0.1		μs

Package Dimensions

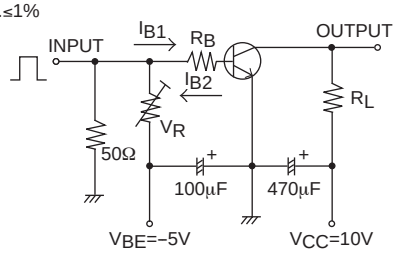
unit : mm (typ)

7007B-004

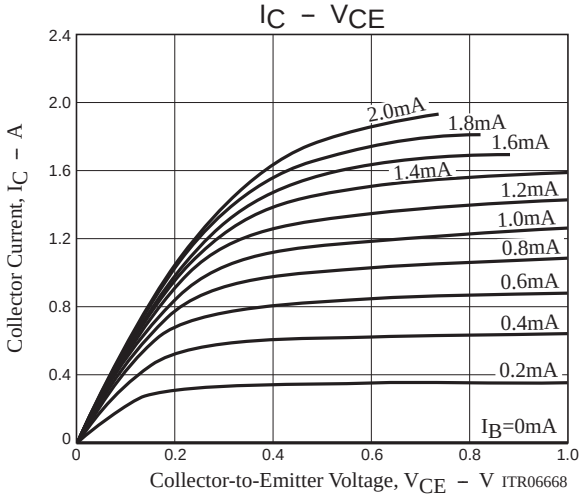


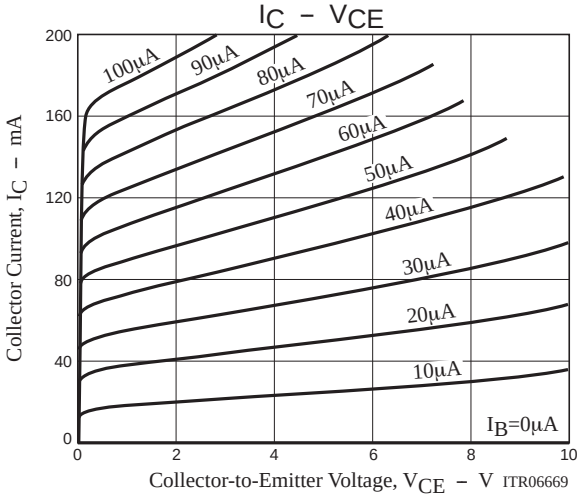
Switching Time Test Circuit

PW=20μs
D.C.≤1%

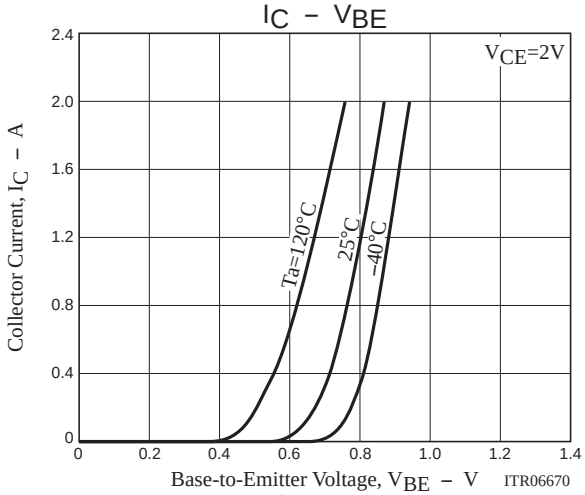


I_C=100I_{B1}=−100I_{B2}=700mA

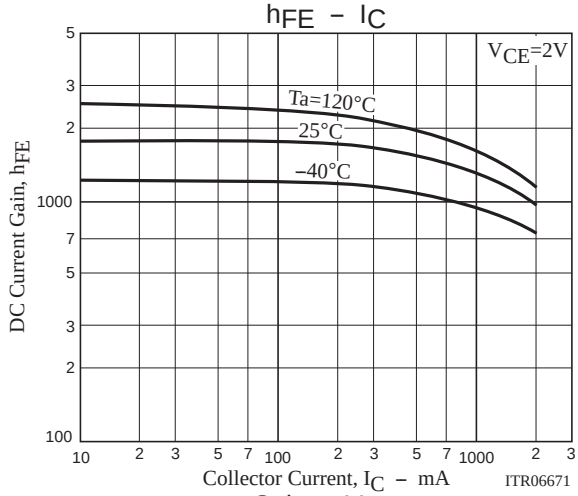




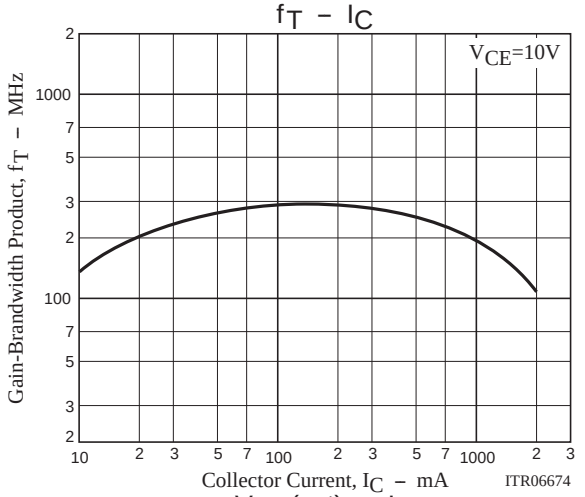
I_C – V_{BE}



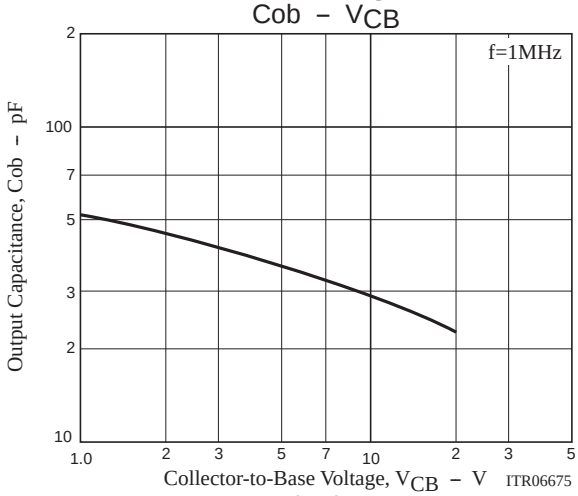
h_{FE} – I_C



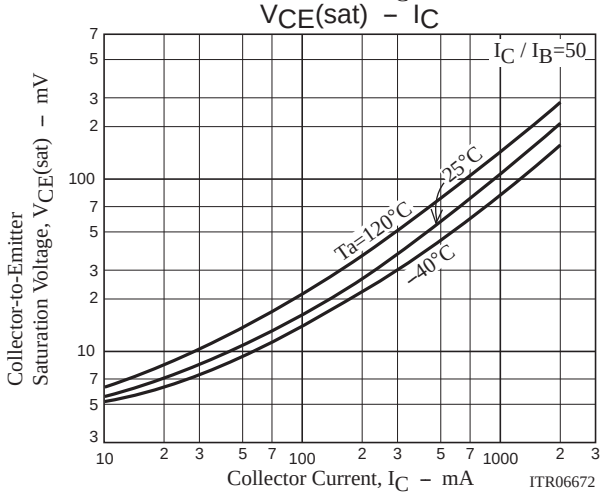
f_T – I_C



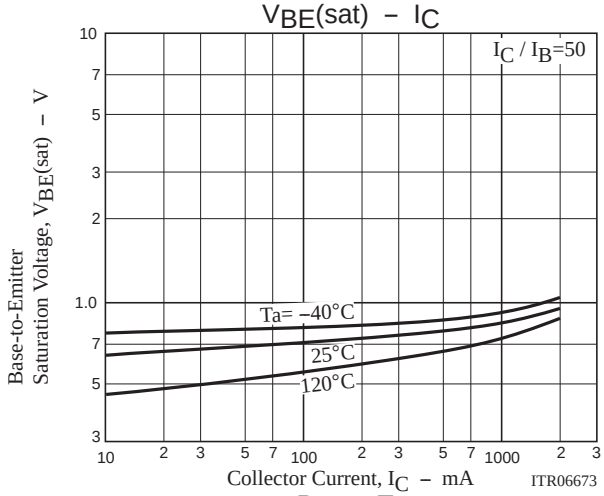
Cob – V_{CB}



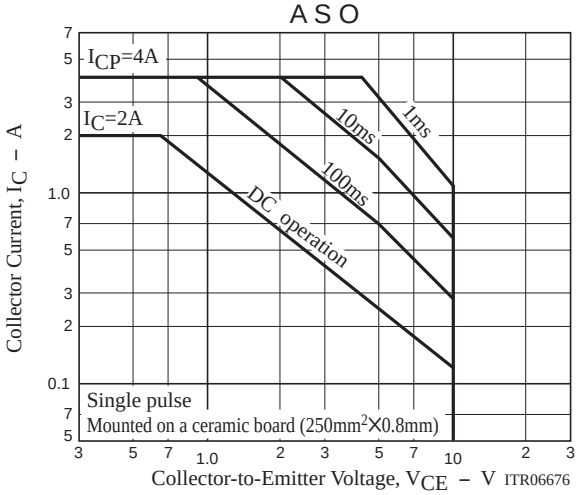
V_{CE}(sat) – I_C



V_{BE}(sat) – I_C



ASO



P_C – Ta