



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

PNP Epitaxial Planar Silicon Transistor

50A02CH — Low-Frequency General-Purpose Amplifier Applications

Applications

- Low-frequency Amplifier, high-speed switching, small motor drive, muting circuit

Features

- High collector current capability
- Low collector-to-emitter saturation voltage (resistance) : $R_{CE(sat)} \text{ typ}=210\text{m}\Omega$ [$I_C=0.5\text{A}$, $I_B=50\text{mA}$]
- Low ON-resistance (R_{on})

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-50	V
Collector-to-Emitter Voltage	V_{CEO}		-50	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-500	mA
Collector Current (Pulse)	I_{CP}		-1.0	A
Collector Dissipation	P_C	Mounted on a ceramic board (600mm ² ×0.8mm)	700	mW
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=-40\text{V}$, $I_E=0\text{A}$			-100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}$, $I_C=0\text{A}$			-100	nA
DC Current Gain	h_{FE}	$V_{CE}=-2\text{V}$, $I_C=-10\text{mA}$	200		500	

Marking : AX

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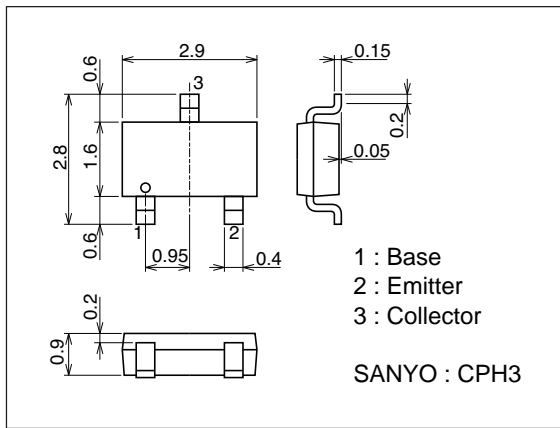
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f_T	$V_{CE}=-10V, I_C=-50mA$		690		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10V, f=1MHz$		3.8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-100mA, I_B=-10mA$		-60	-120	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-100mA, I_B=-10mA$		-0.9	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0A$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	-50			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.		170		ns
Fall Time	t_f	See specified Test Circuit.		30		ns

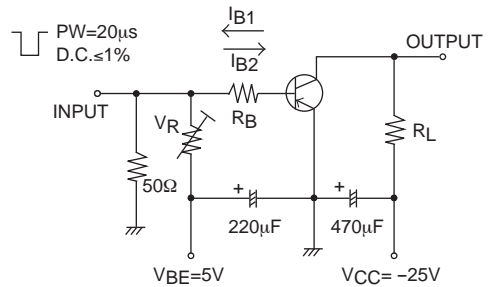
Package Dimensions

unit : mm (typ)

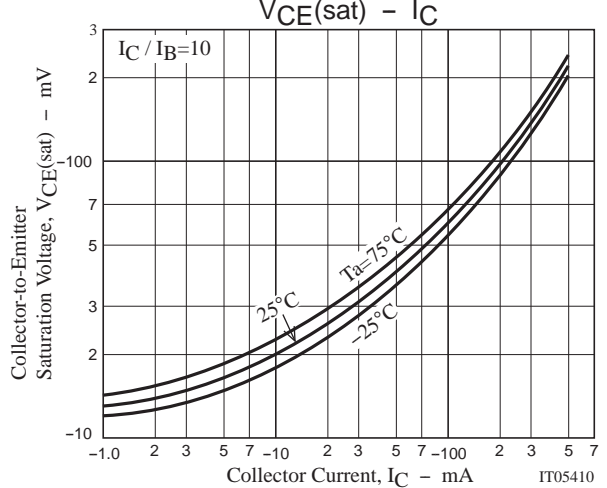
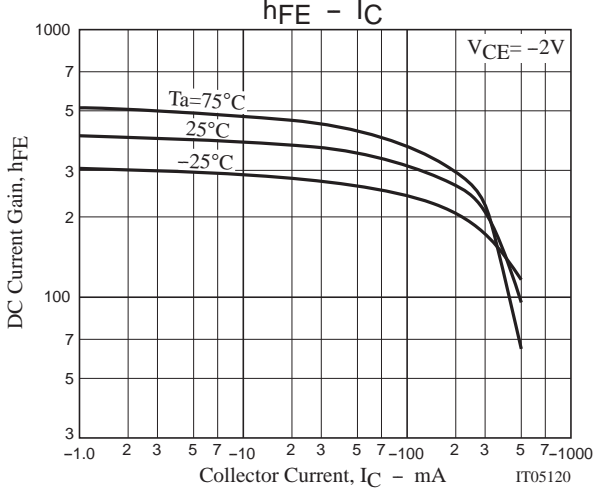
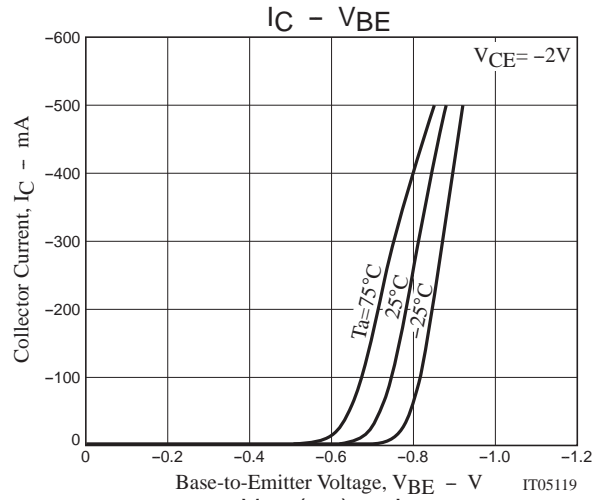
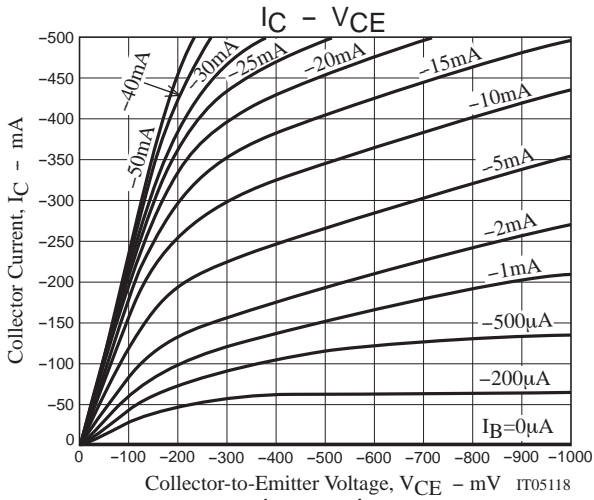
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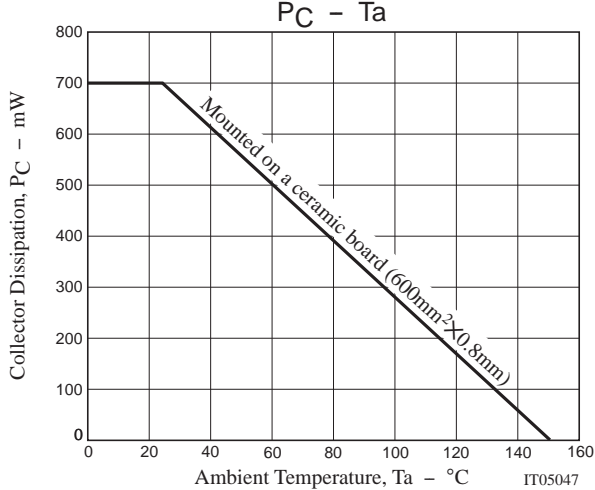
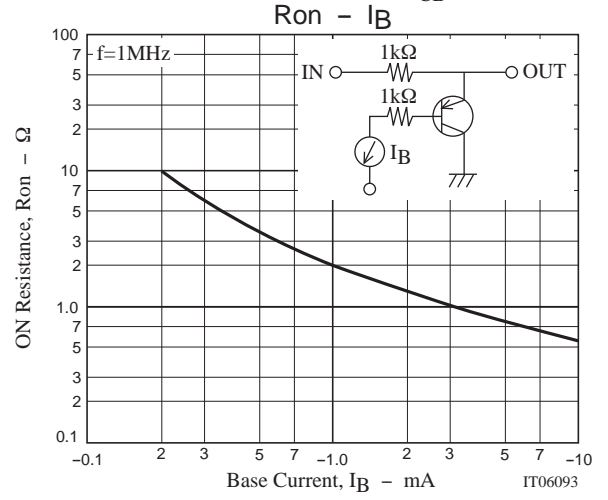
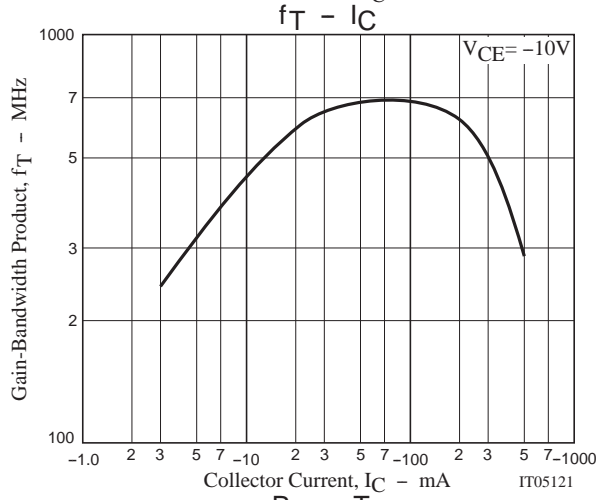
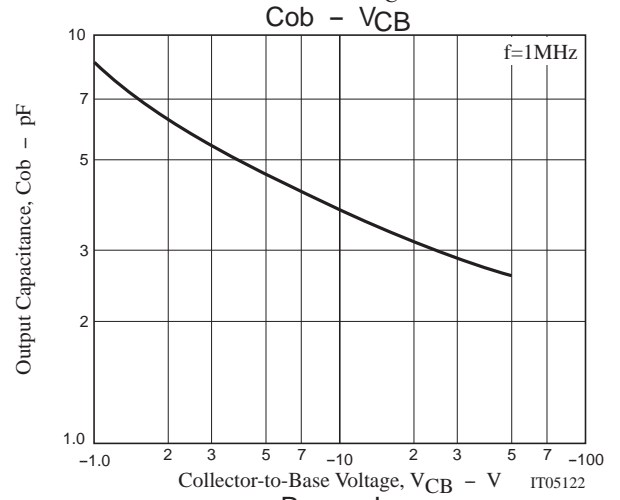
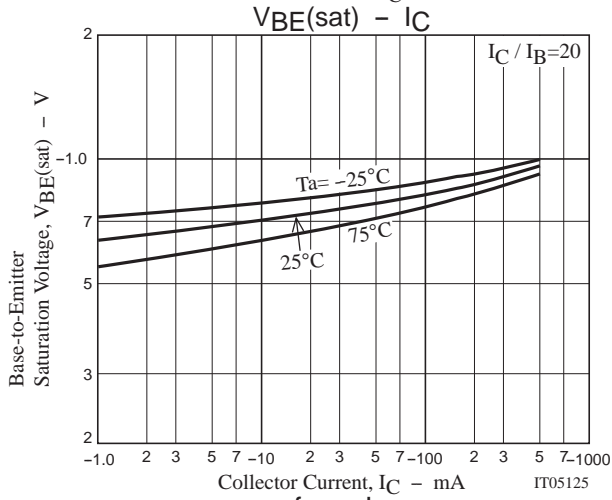
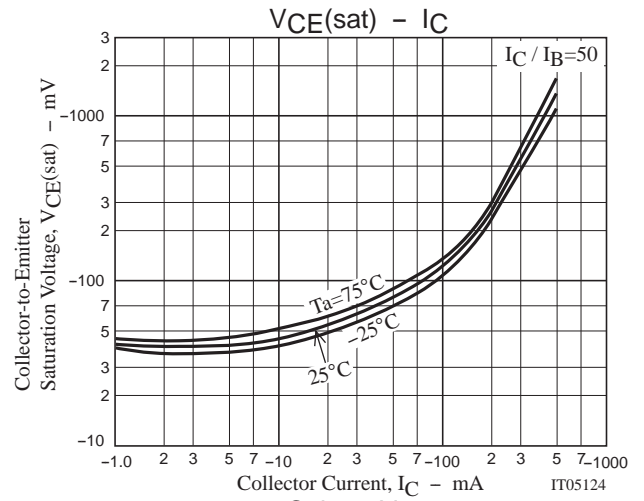
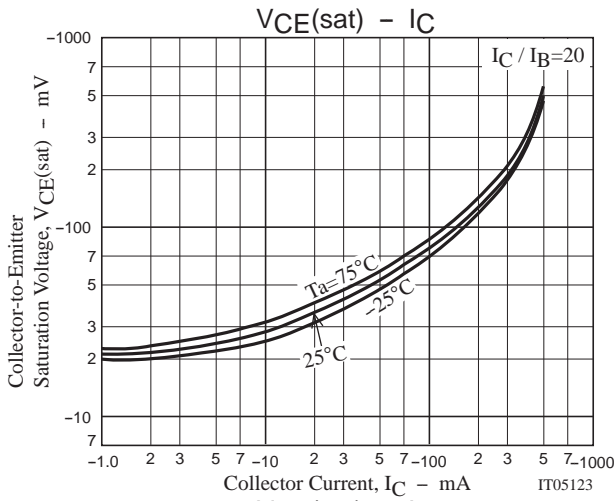
Switching Time Test Circuit



$$I_C=20I_{B1} = -20I_{B2} = -200mA$$



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