

**30C02S**

Low-Frequency General-Purpose Amplifier Applications

Applications

- Low-frequency Amplifier, high-speed switching, small motor drive.

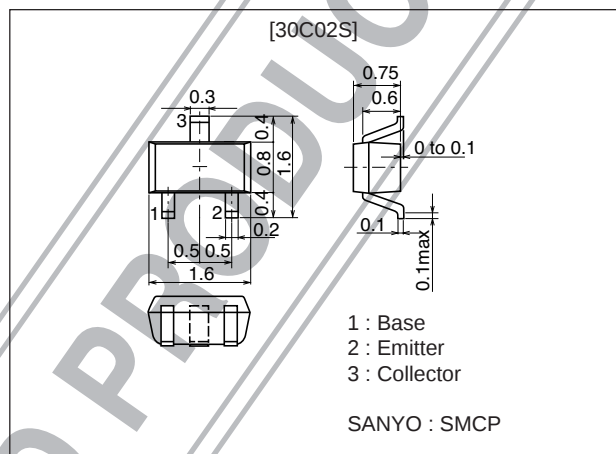
Features

- Large current capacitance.
- Low collector-to-emitter saturation voltage (resistance).
 $R_{CE(sat)}$ typ=330m Ω [$I_C=0.7A$, $I_B=35mA$].
- Ultrasmall package facilitates miniaturization in end products.
- Small ON-resistance (R_{on}).

Package Dimensions

unit : mm

2106A



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		40	V
Collector-to-Emitter Voltage	V_{CE0}		30	V
Emitter-to-Base Voltage	V_{EB0}		5	V
Collector Current	I_C		600	mA
Collector Current (Pulse)	I_{CP}		1.2	A
Collector Dissipation	P_C	Mounted on a glass-epoxy board (20×30×1.6mm)	200	mW
Junction Temperature	T_J		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

Electrical Characteristics at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=30V$, $I_E=0$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4V$, $I_C=0$			100	nA
DC Current Gain	h_{FE}	$V_{CE}=2V$, $I_C=50mA$	300		800	
Gain-Bandwidth Product	f_T	$V_{CE}=10V$, $I_C=50mA$		540		MHz

Marking : YM

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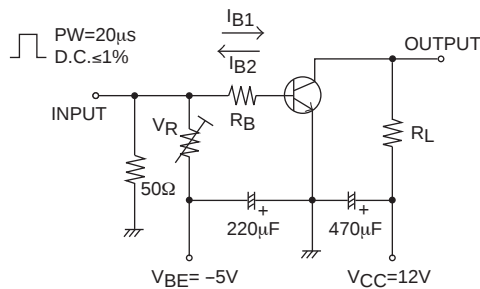
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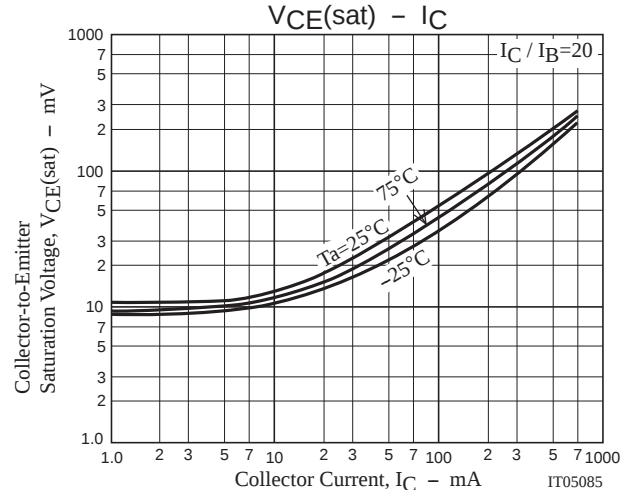
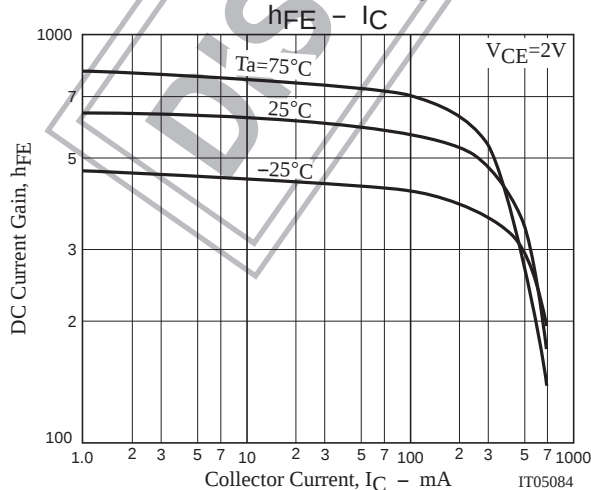
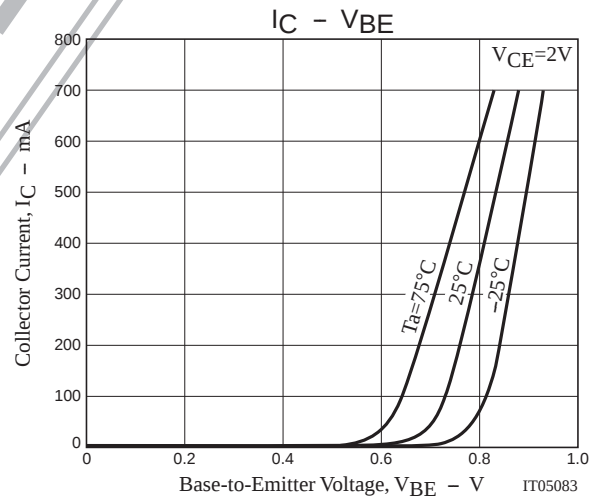
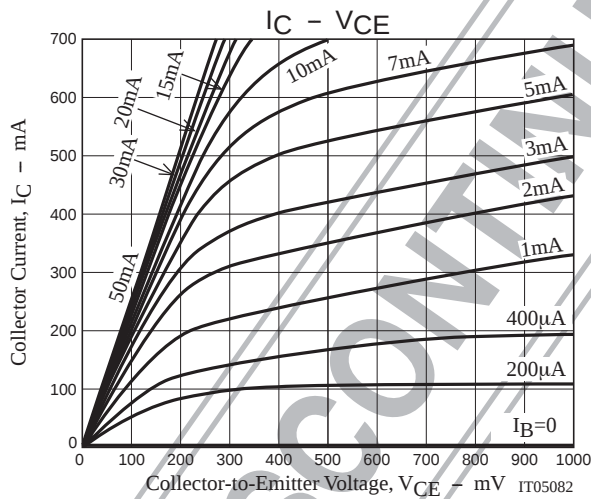
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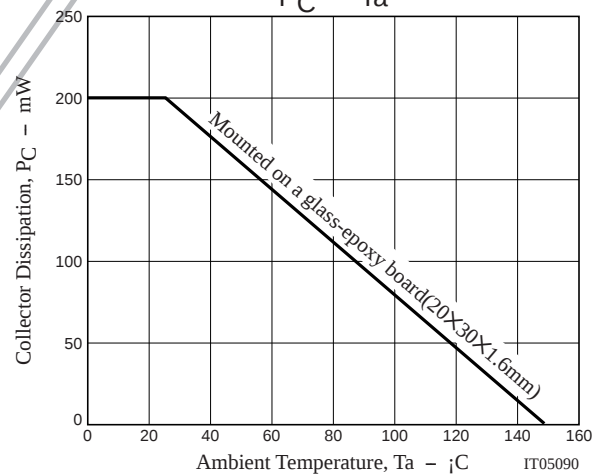
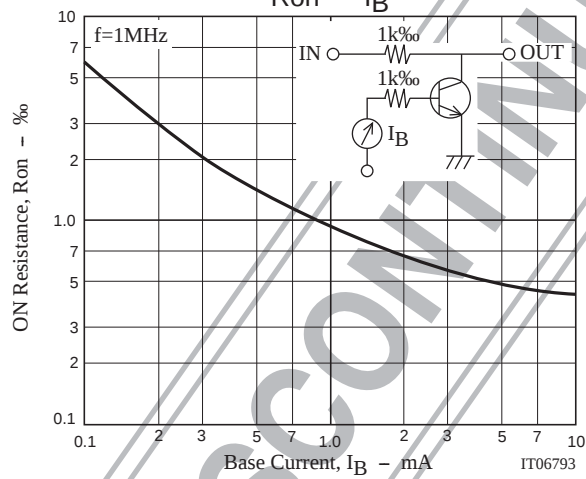
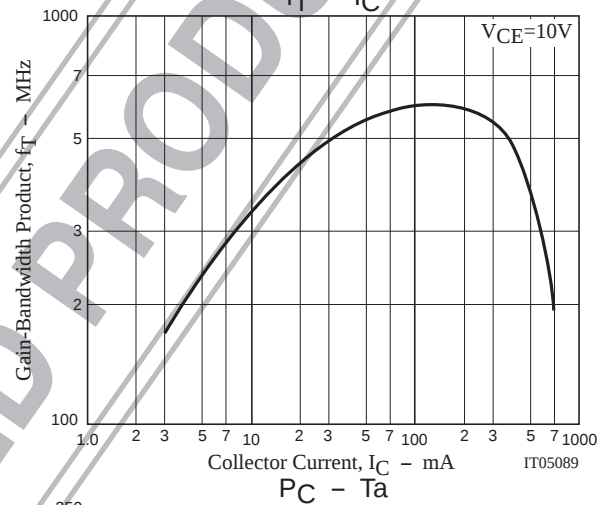
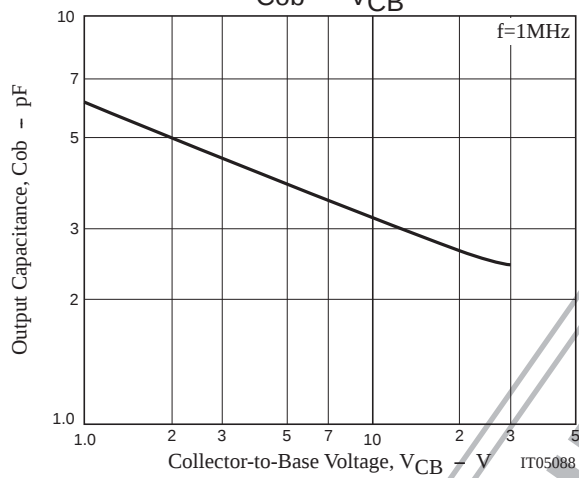
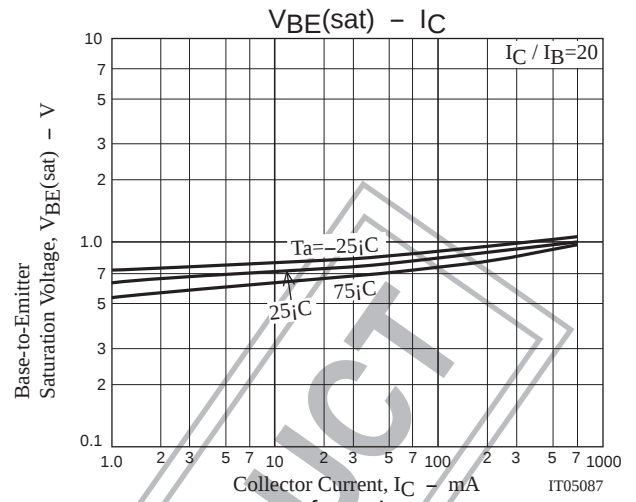
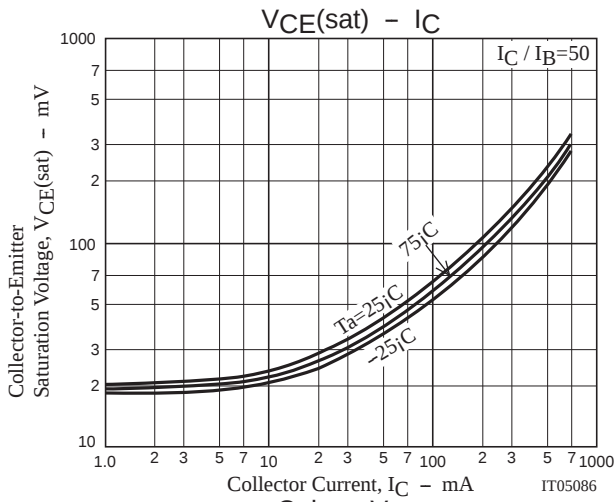
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		3.3		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=200mA, I_B=10mA$		85	190	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=200mA, I_B=10mA$		0.9	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	40			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		35		ns
Storage Time	t_{stg}	See specified Test Circuit.		255		ns
Fall Time	t_f	See specified Test Circuit.		40		ns

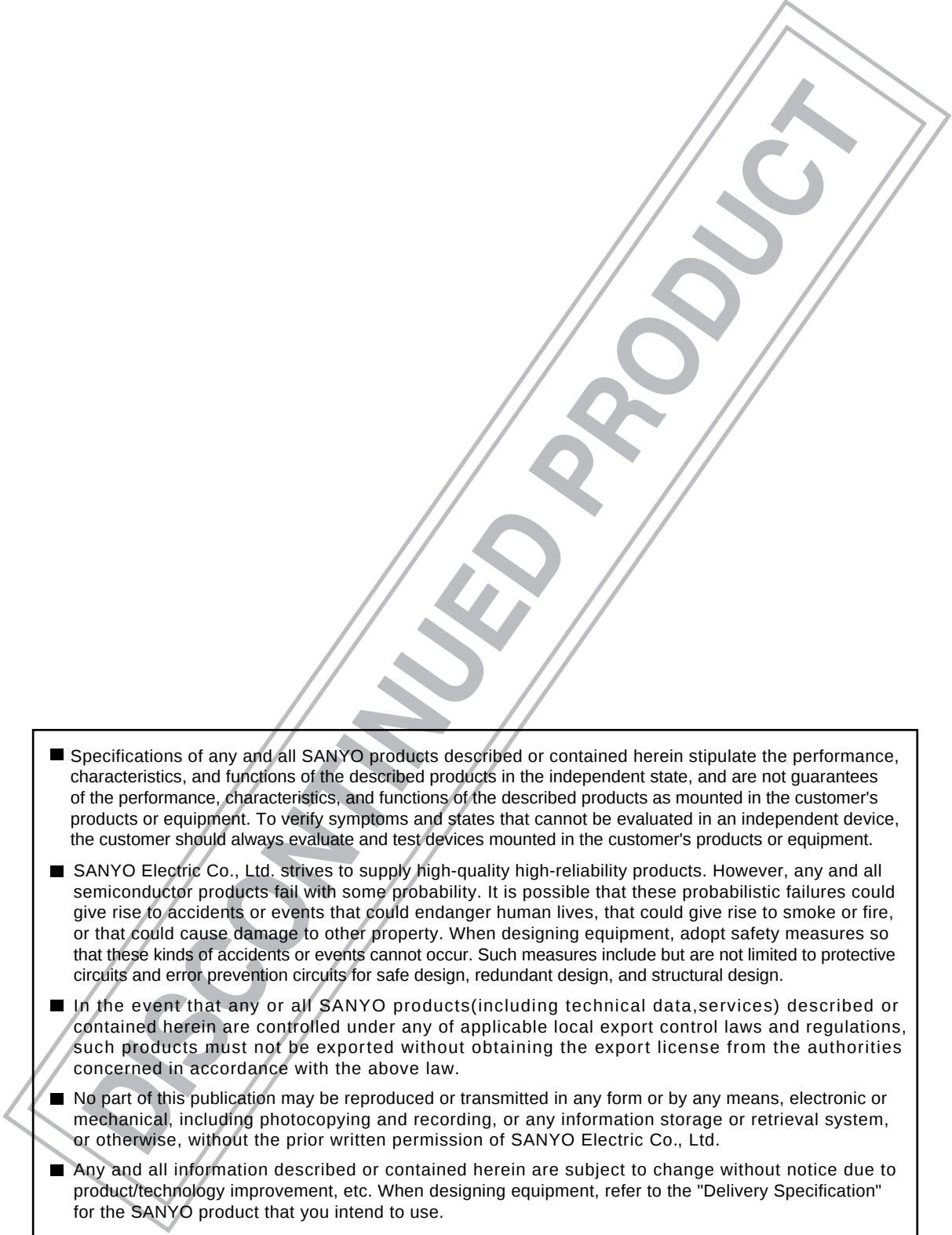
Switching Time Test Circuit



$$20I_{B1} = -20I_{B2} = I_C = 300mA$$





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