

**30C02SS**

Low-Frequency General-Purpose Amplifier Applications

Applications

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

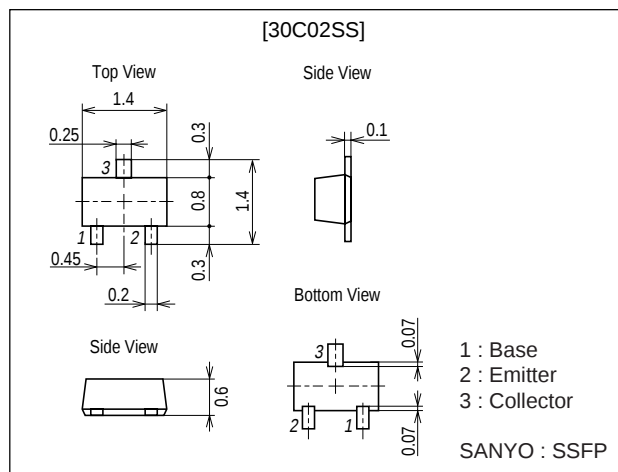
Features

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

Package Dimensions

unit : mm

2159A



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		40	V
Collector-to-Emitter Voltage	V_{CEO}		30	V
Emitter-to-Base Voltage	V_{EBO}		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 (20X30X1.6mm)	200	mW
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

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

Marking : YM

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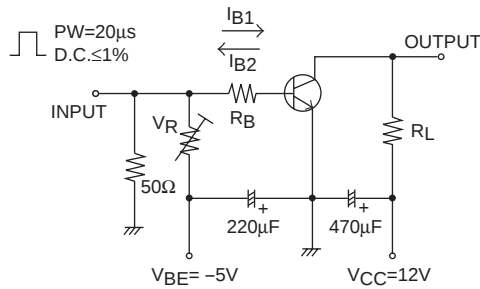
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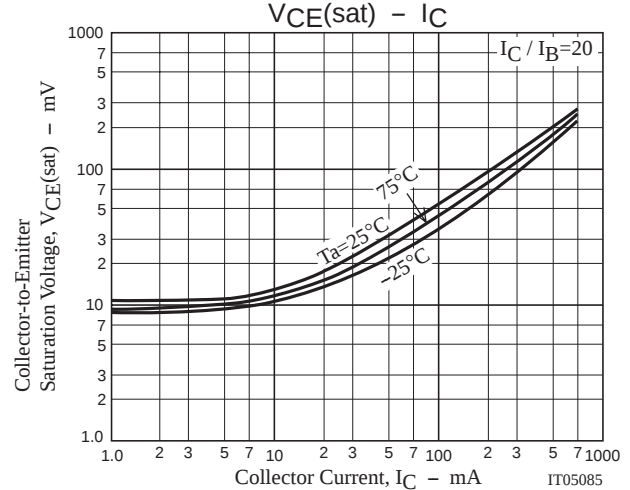
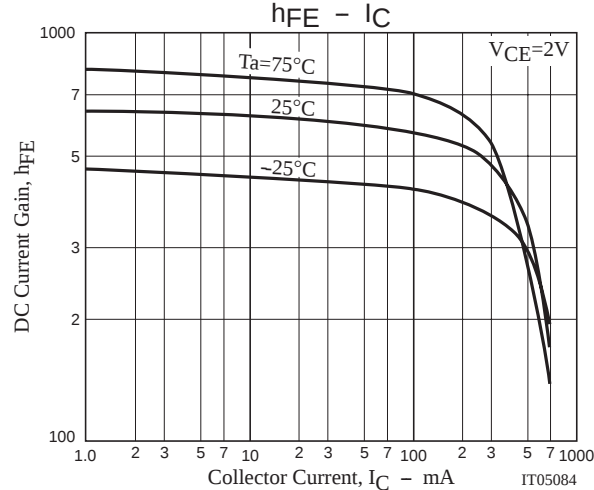
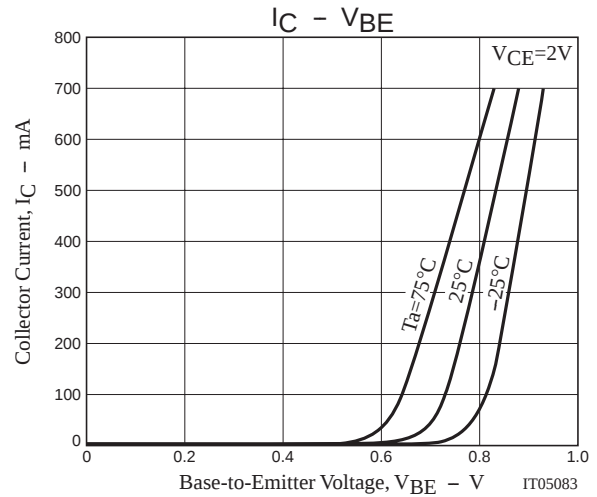
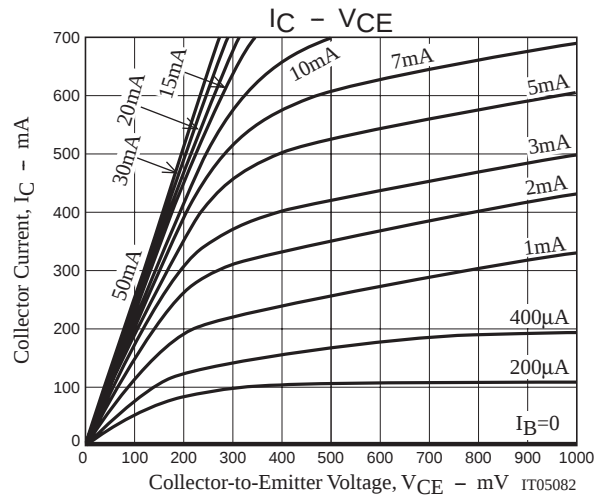
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		3.3		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=200mA, I_B=10mA$		85	190	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=200mA, I_B=10mA$		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.		45		ns

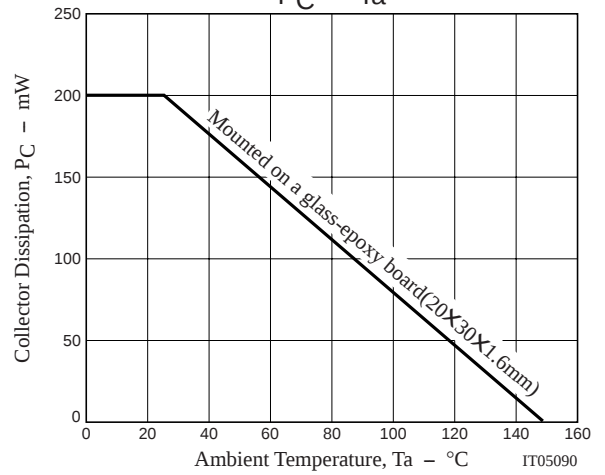
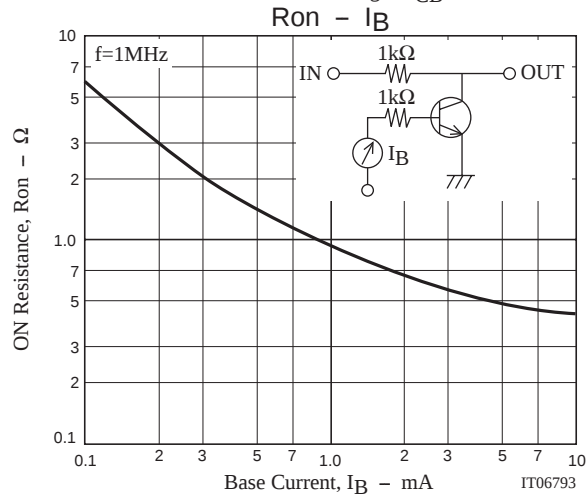
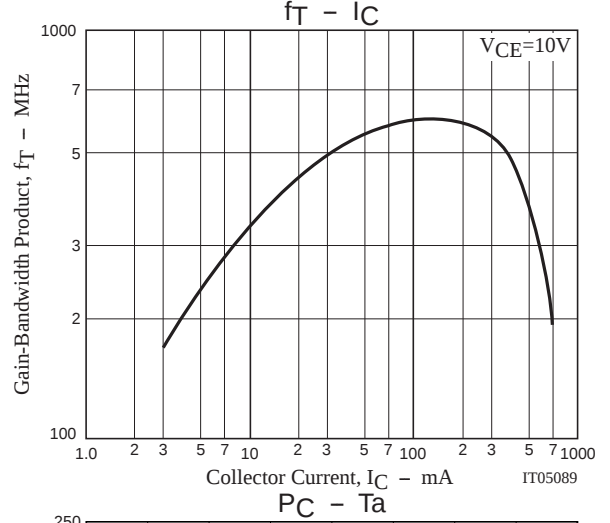
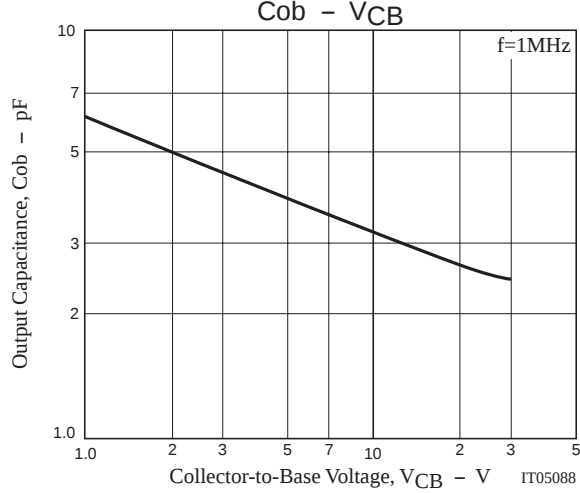
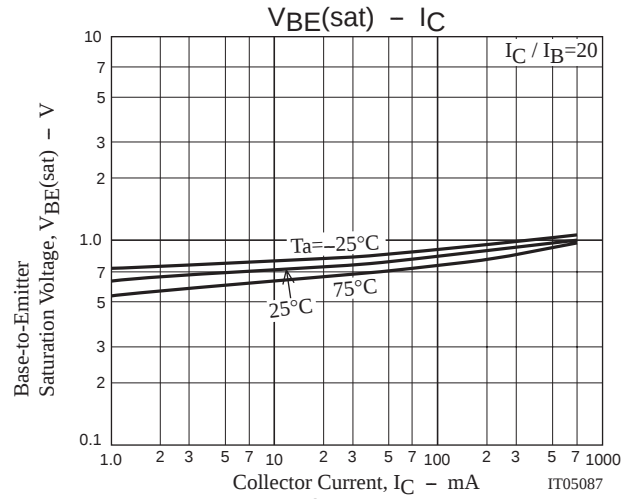
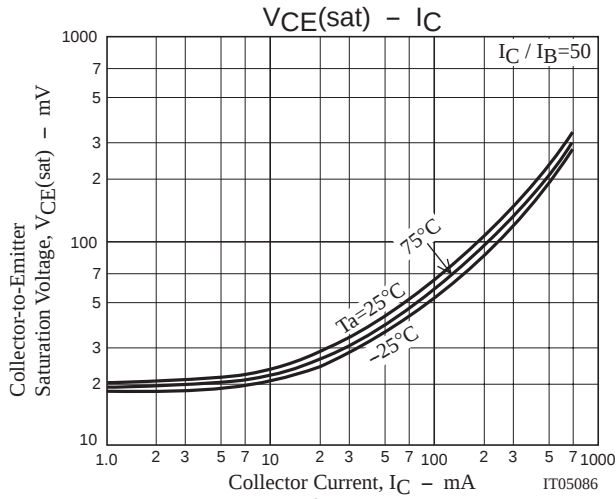
Switching Time Test Circuit



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



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