

**30A02SP**

Low-Frequency General-Purpose Amplifier Applications

Applications

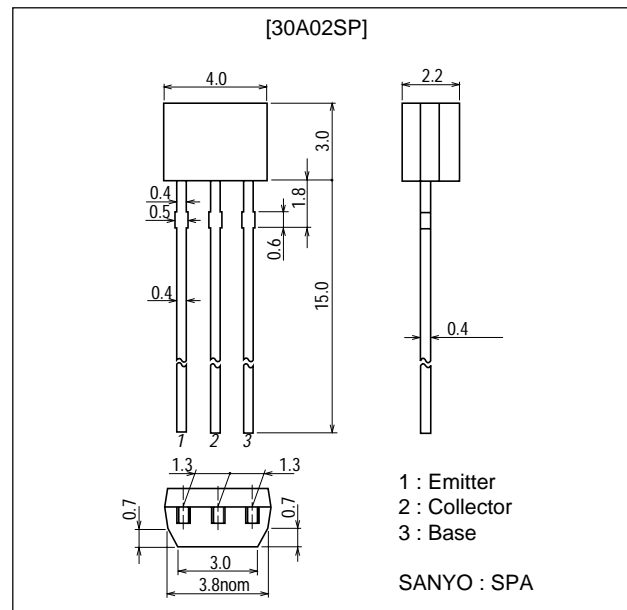
- Low-frequency Amplifier, high-speed switching, small motor drive.

Features

- Large current capacitance.
- Low collector-to-emitter saturation voltage.

Package Dimensions

unit : mm
2033A



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		-30	V
Collector-to-Emitter Voltage	V_{CEO}		-30	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-700	mA
Collector Current (Pulse)	I_{CP}		-1.4	A
Collector Dissipation	P_C		400	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}	$V_{CE}=-2\text{V}, I_C=-10\text{mA}$	200		500	
Gain-Bandwidth Product	f_T	$V_{CE}=-10\text{V}, I_C=-50\text{mA}$		520		MHz

Marking : XM

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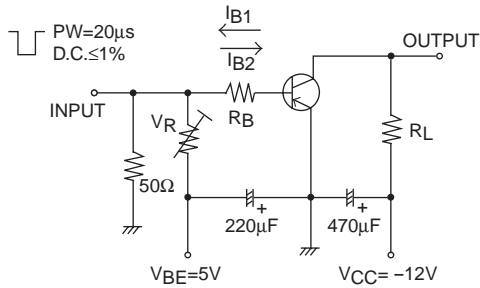
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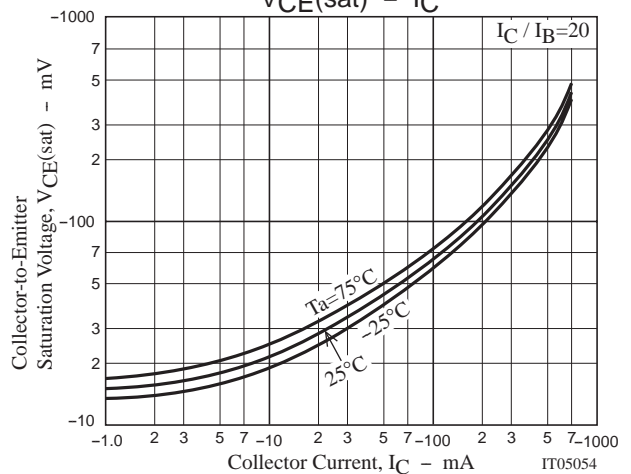
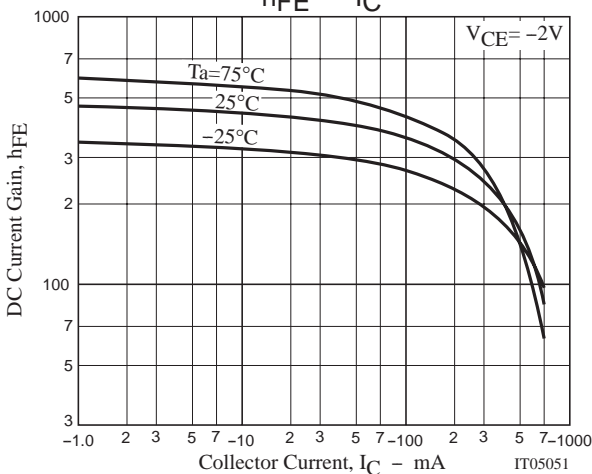
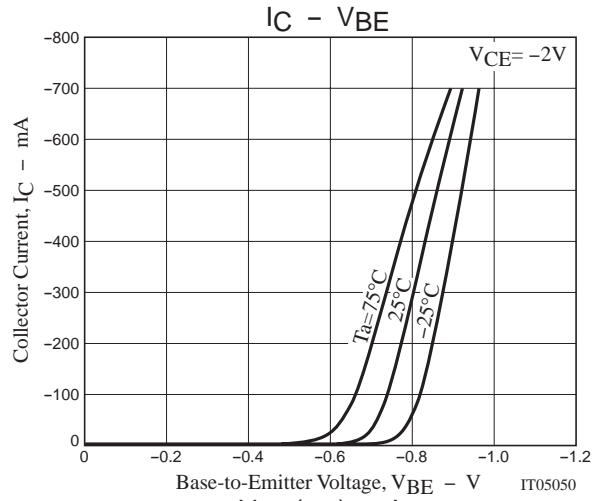
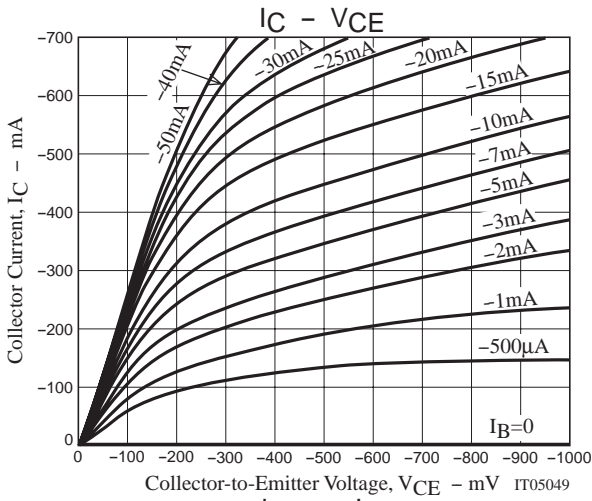
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB}=-10V, f=1MHz$		4.7		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-200mA, I_B=-10mA$		-110	-220	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-200mA, I_B=-10mA$		-0.9	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-30			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 Delay Time	t_{on}	See specified Test Circuit.		35		ns
Rise Time	t_{stg}	See specified Test Circuit.		125		ns
Turn-OFF Delay Time	t_f	See specified Test Circuit.		25		ns

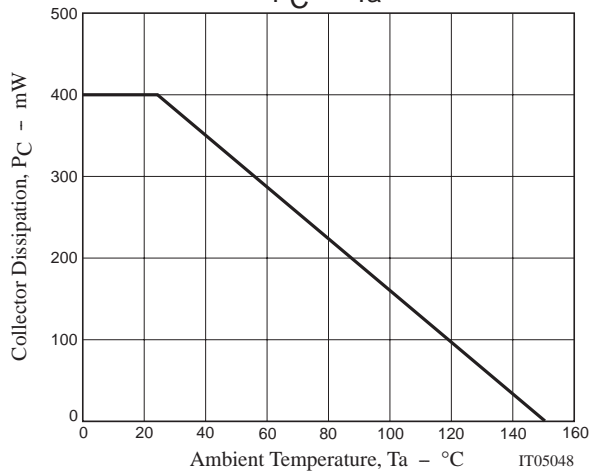
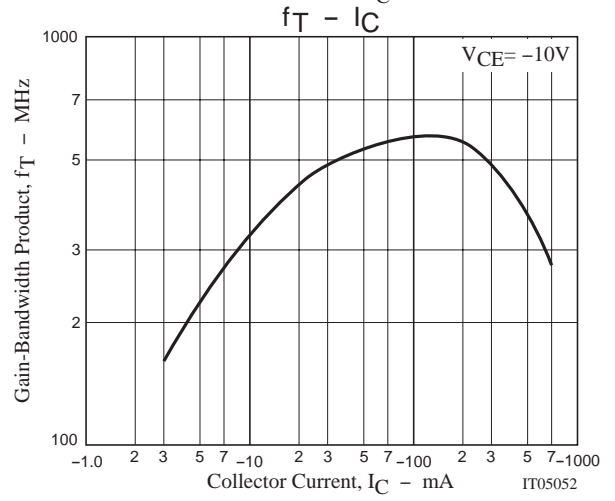
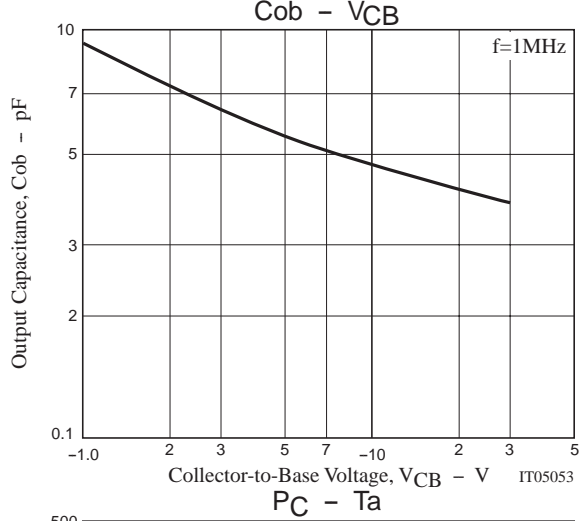
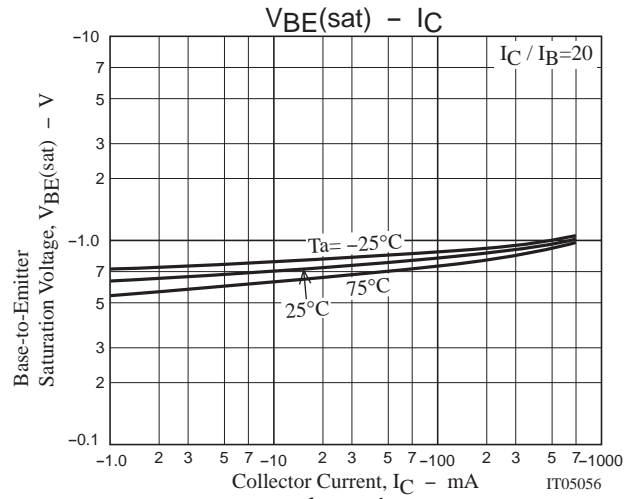
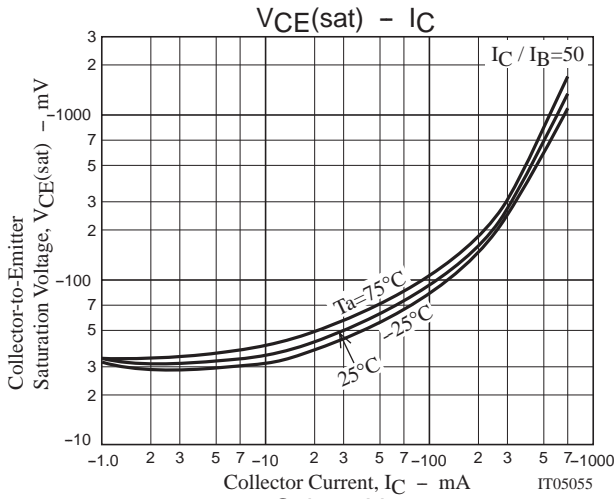
Switching Time Test Circuit



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



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