

**50A02SP**

Low-Frequency General-Purpose Amplifier Applications

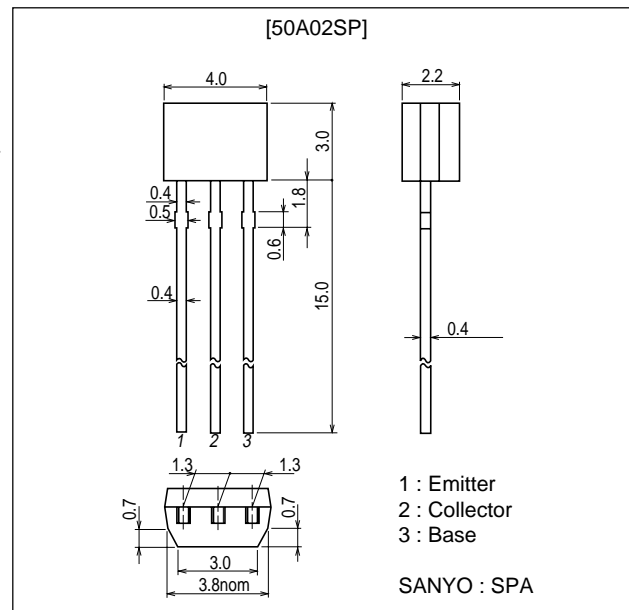
Applications

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

Features

- Large current capacitance.
- Low collector-to-emitter saturation voltage (resistance).
RCE(sat) typ=210mΩ [IC=0.5A, IB=50mA].
- Small ON-resistance (Ron).

Package Dimensions

unit : mm
2033A

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		-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		400	mW
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CB0}	V _{CB} =-40V, 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 =-10mA	200		500	
Gain-Bandwidth Product	f _T	V _{CE} =-10V, I _C =-50mA		690		MHz

Marking : XN

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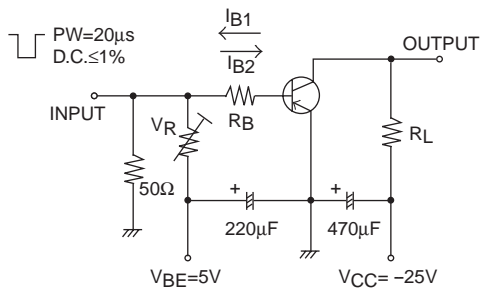
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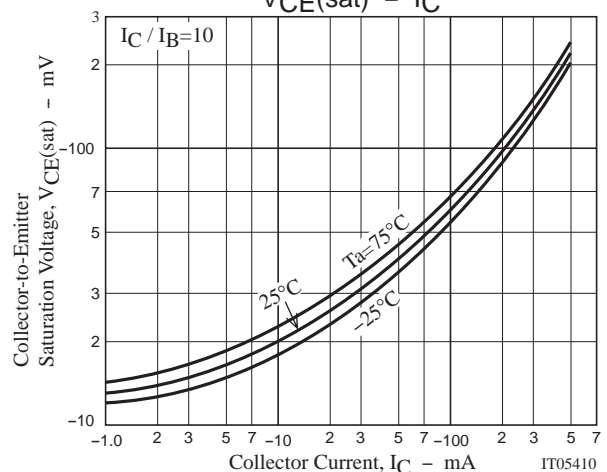
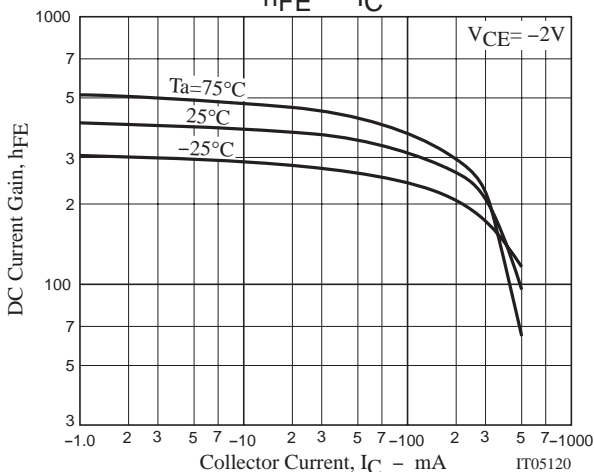
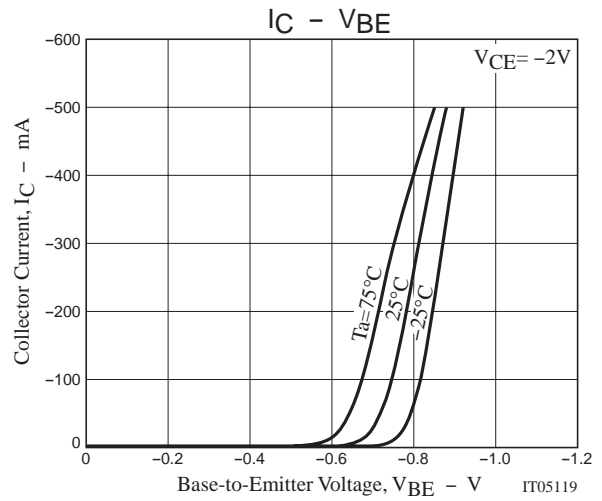
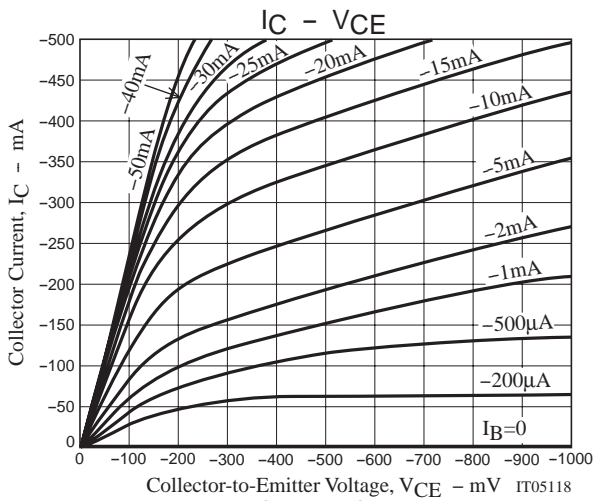
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB}=-10V, f=1MHz$		3.8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-100mA, I_B=-10mA$		-60	-120	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-100mA, I_B=-10mA$		-0.9	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	-50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	-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

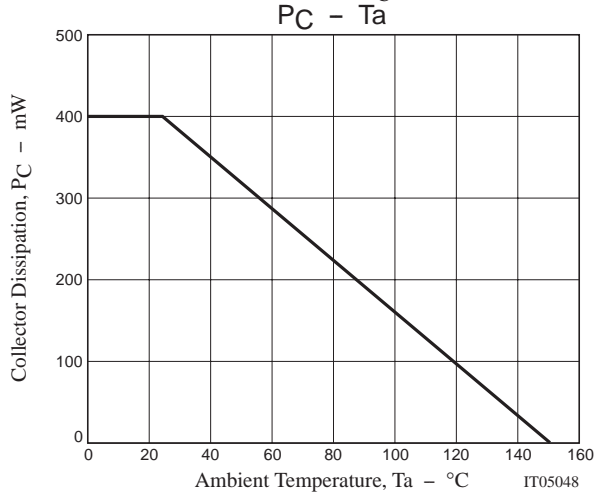
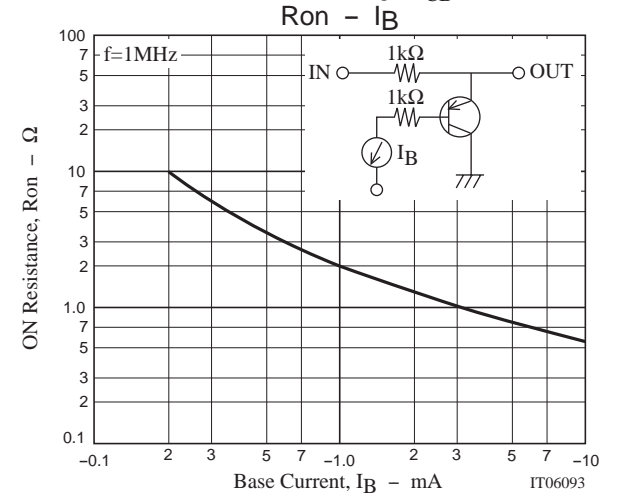
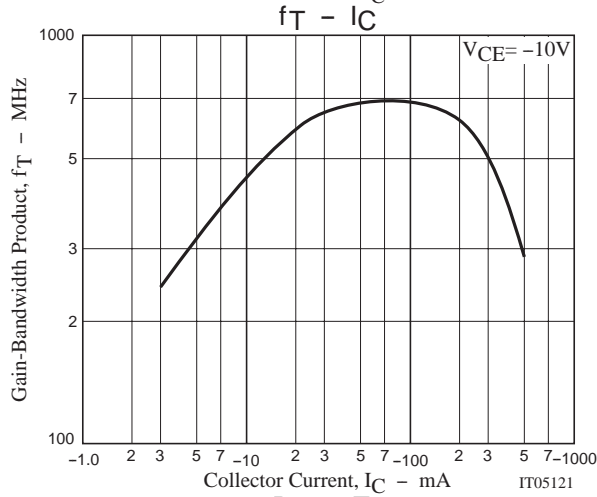
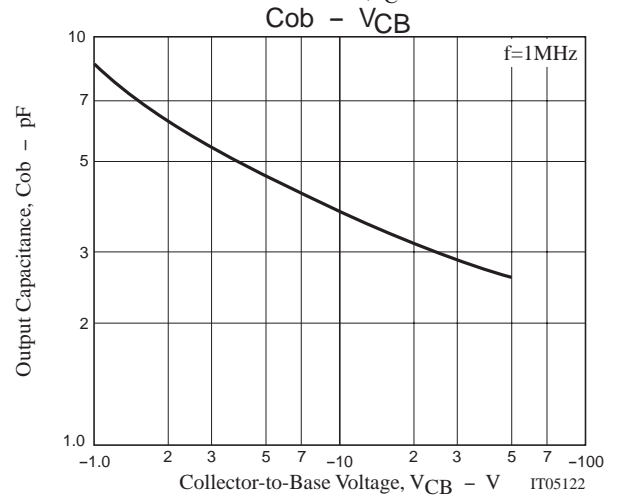
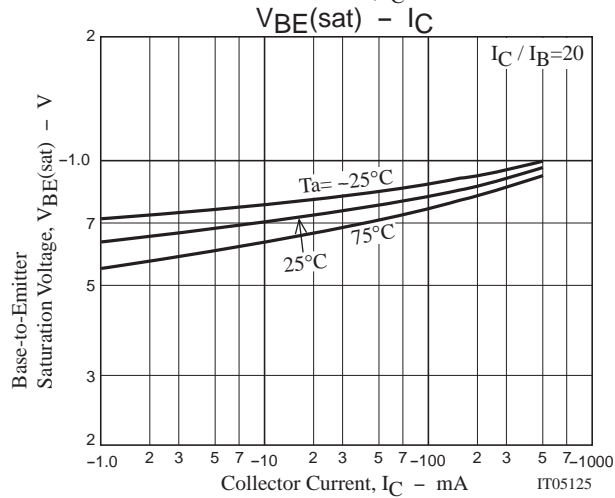
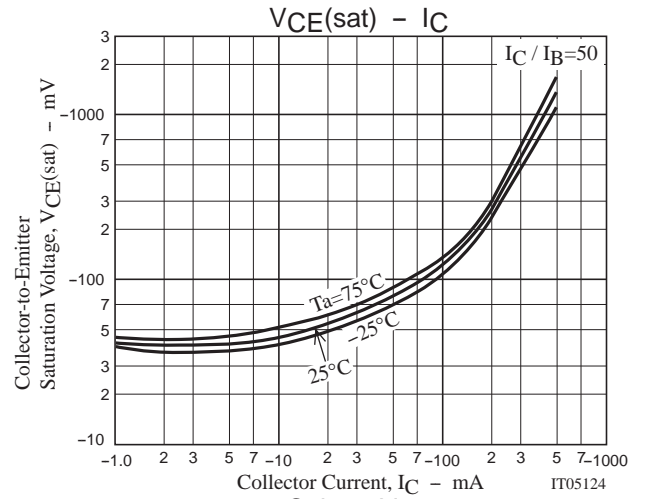
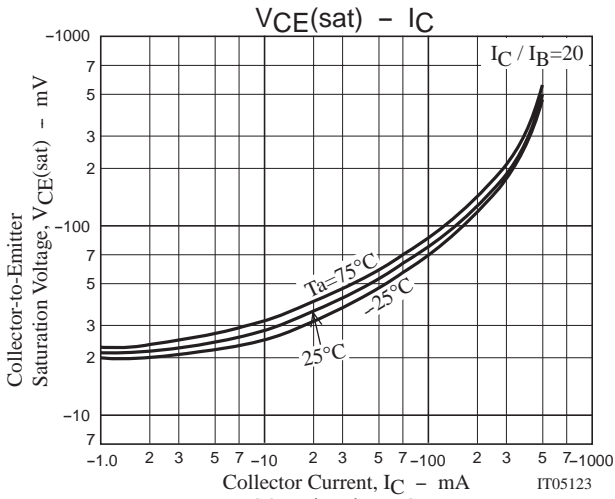
Switching Time Test Circuit



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



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