

**50C02SP**

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).
R_{CE(sat)} typ=175mΩ [I_C=0.5A, I_B=50mA].
- Ultrasmall package facilitates miniaturization in end products.
- Small ON-resistance (R_{on}).

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		60	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

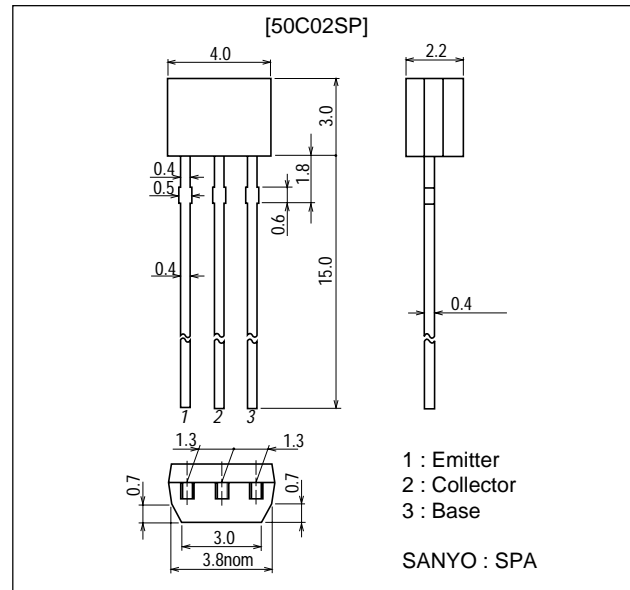
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CB0}	V _{CB} =40V, I _E =0			100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} =4V, I _C =0			100	nA
DC Current Gain	h _{FE}	V _{CE} =2V, I _C =10mA	300		800	
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =50mA		500		MHz

Marking : YN

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Package Dimensions

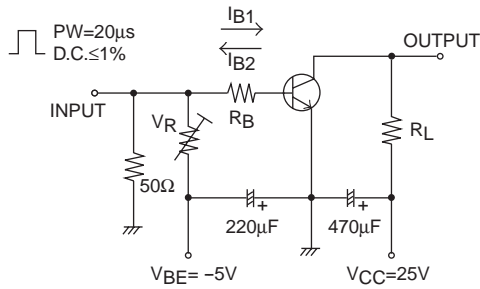
unit : mm
2033A

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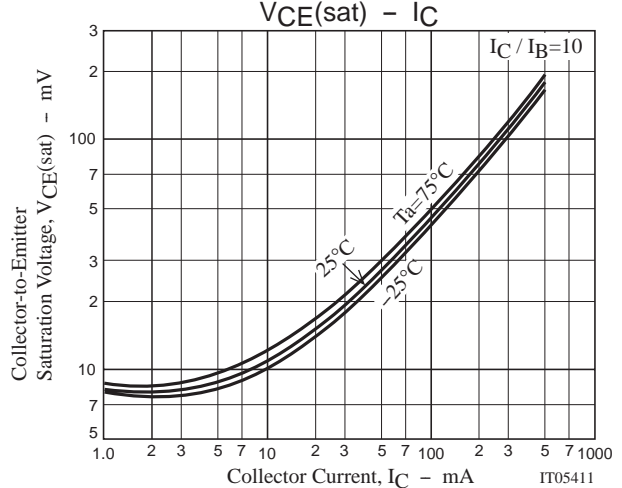
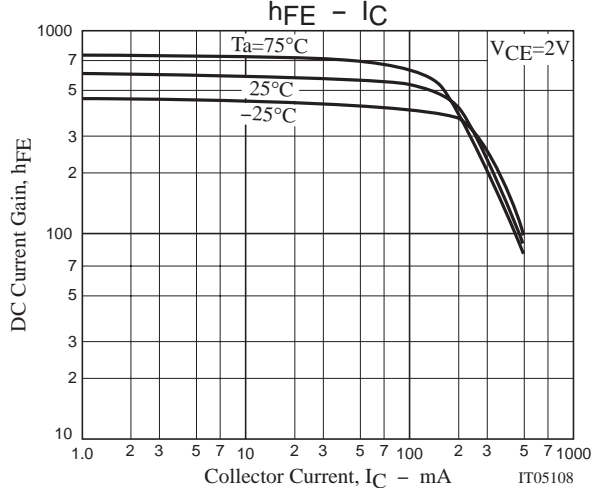
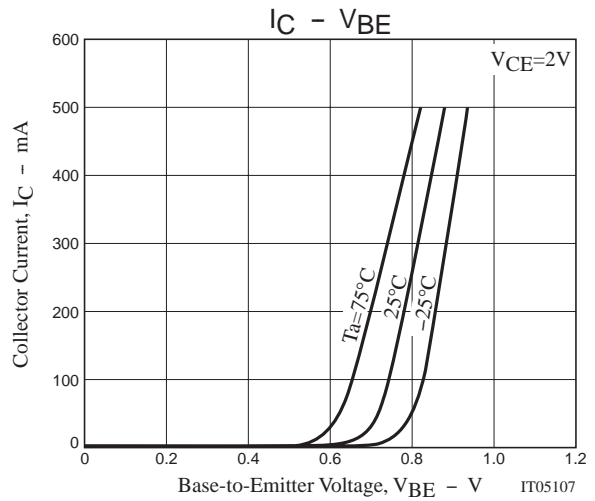
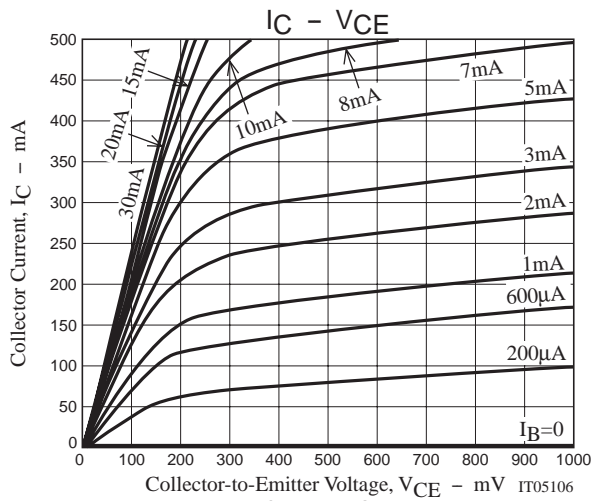
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	Cob	V _{CE} =10V, f=1MHz		2.8		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =100mA, I _B =10mA		50	100	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =100mA, I _B =10mA		0.9	1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =10μA, I _E =0	60			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =1mA, R _{BE} =∞	50			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E =10μA, I _C =0	5			V
Turn-ON Time	t _{on}	See specified Test Circuit.		30		ns
Storage Time	t _{stg}	See specified Test Circuit.		340		ns
Fall Time	t _f	See specified Test Circuit.		55		ns

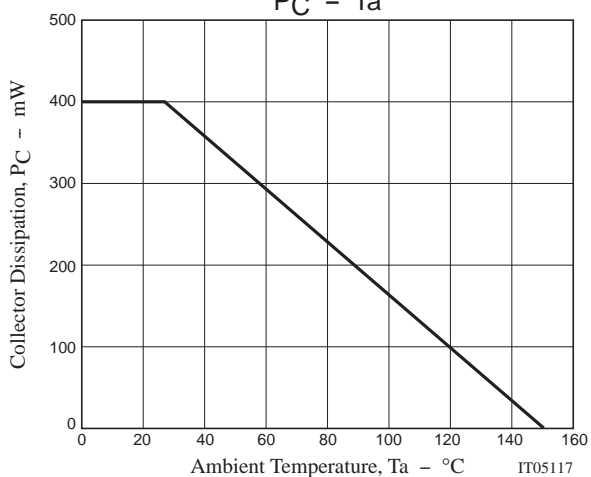
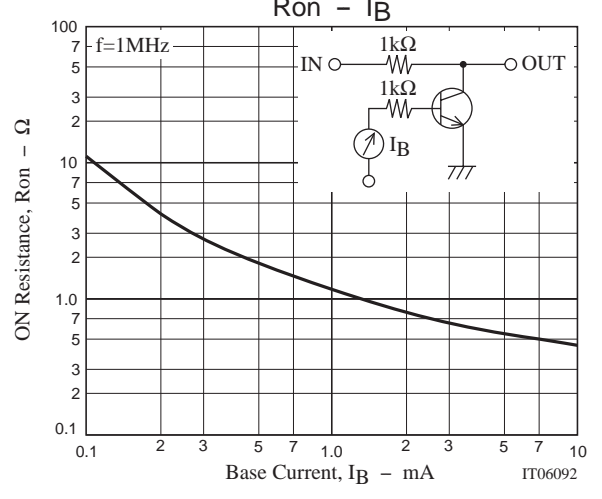
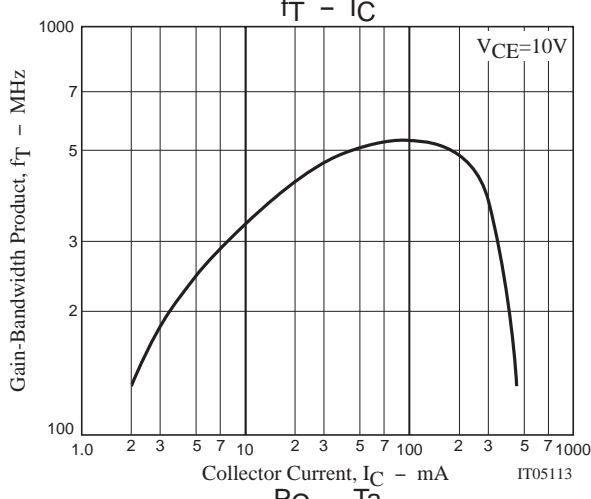
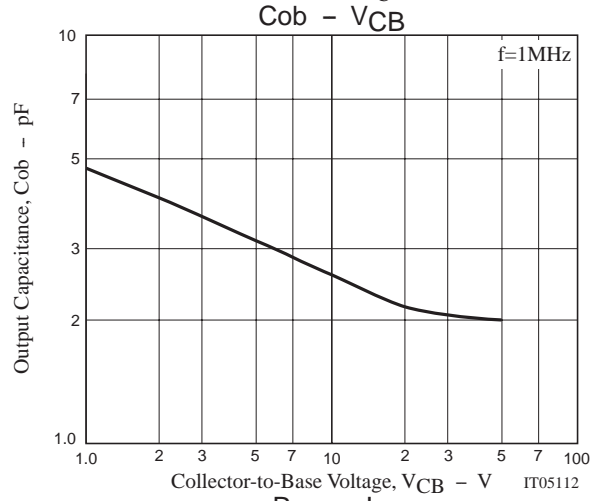
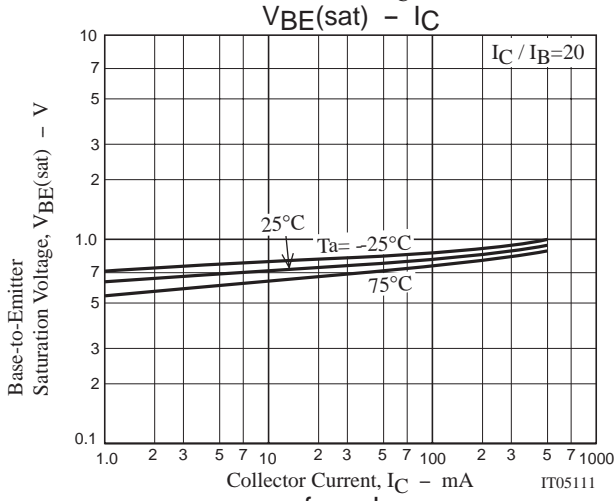
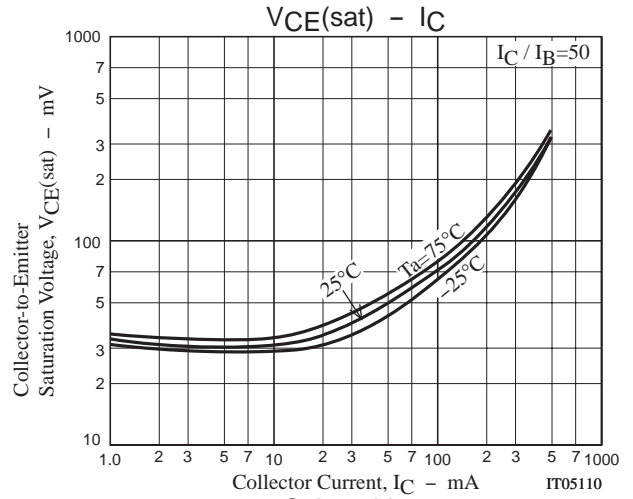
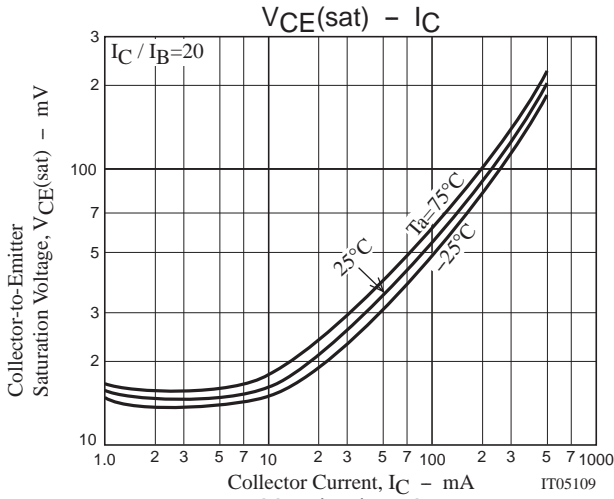
Switching Time Test Circuit



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



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