

**15C02SP**

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).
RCE(sat) typ=300mΩ [IC=1A, IB=50mA].
- Ultrasmall package facilitates miniaturization in end products.
- Small ON-resistance (Ron).

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		20	V
Collector-to-Emitter Voltage	V _{CEO}		15	V
Emitter-to-Base Voltage	V _{EBO}		5	V
Collector Current	I _C		1	A
Collector Current (Pulse)	I _{CP}		2	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} =12V, 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} =2V, I _C =50mA		440		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		4		pF

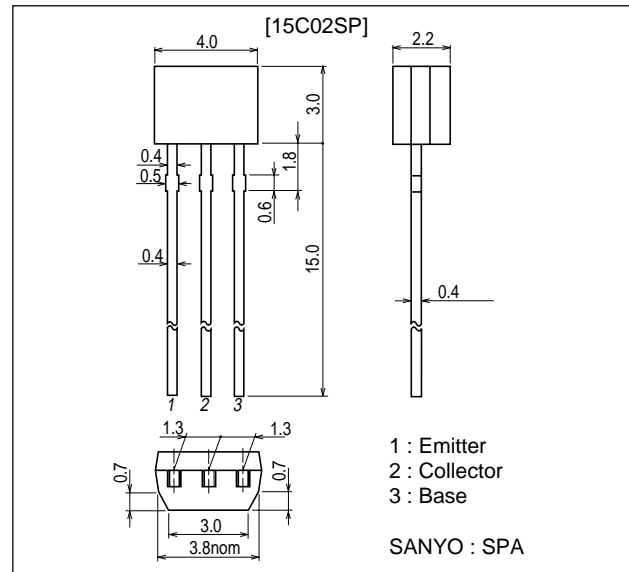
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Package Dimensions

unit : mm
2033A

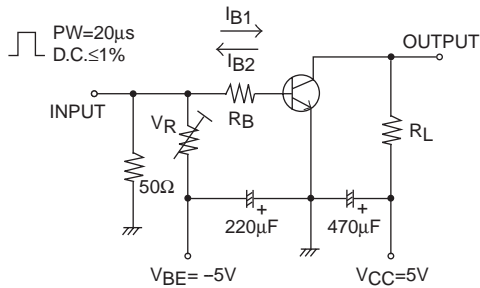


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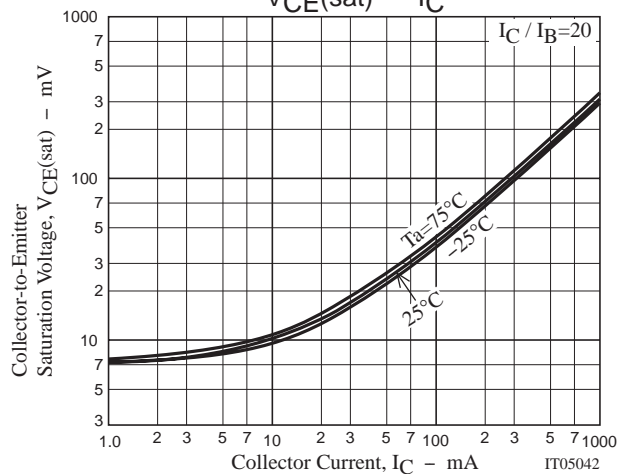
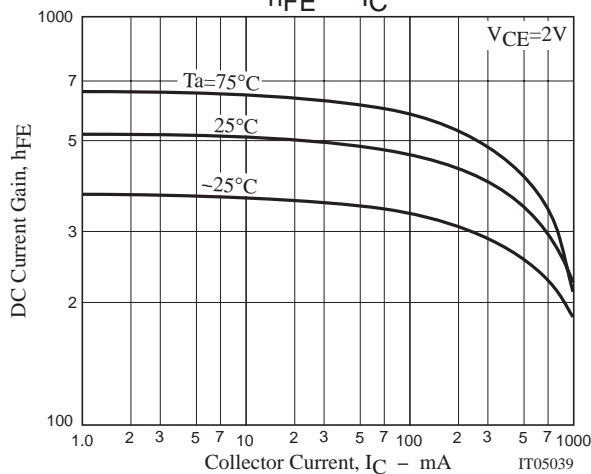
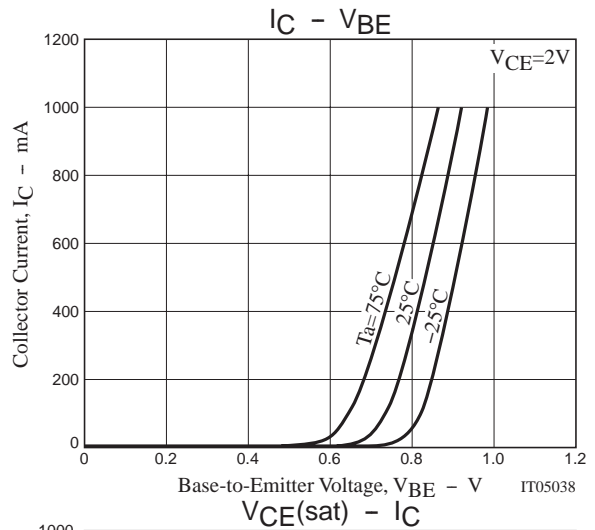
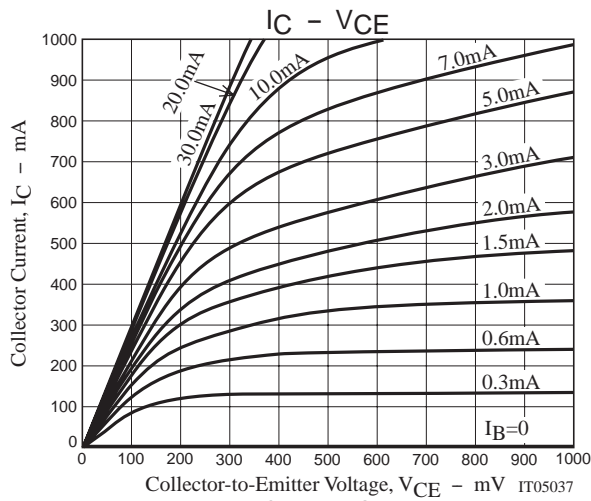
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=400mA, I_B=20mA$		140	280	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=400mA, I_B=20mA$		0.9	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	20			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	15			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.		30		ns
Storage Time	t_{stg}	See specified Test Circuit.		165		ns
Turn-OFF Delay Time	t_f	See specified Test Circuit.		25		ns

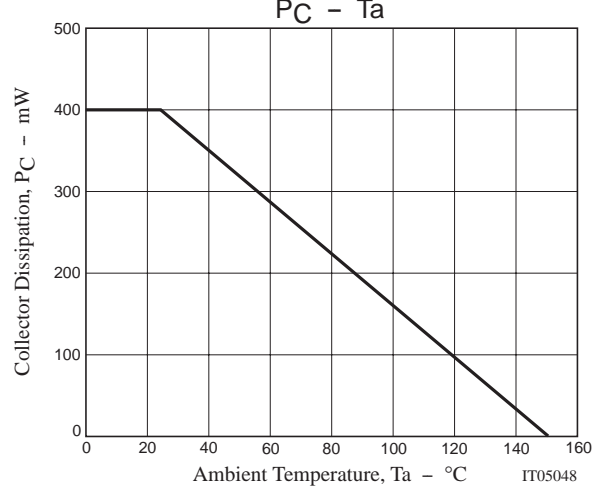
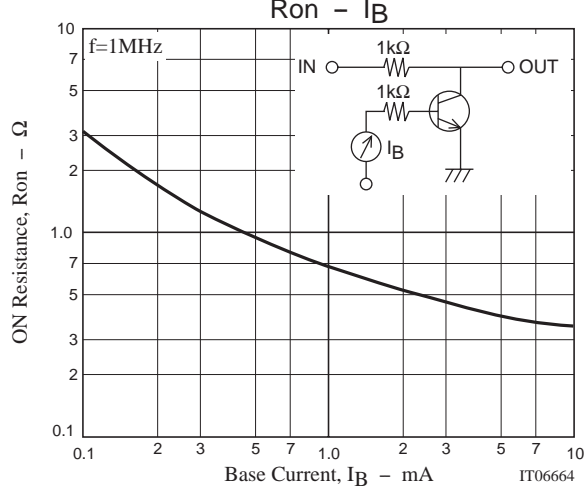
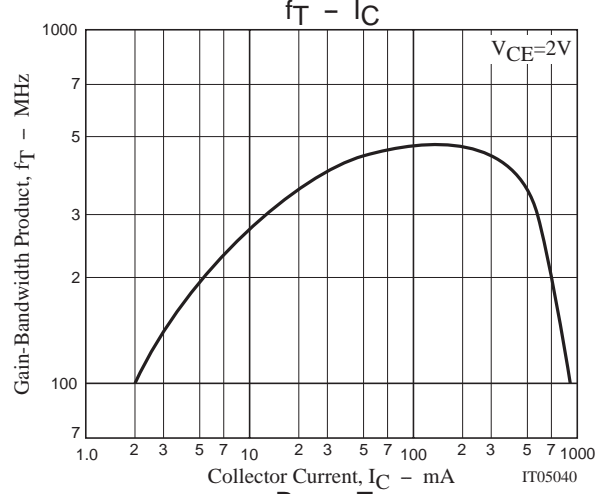
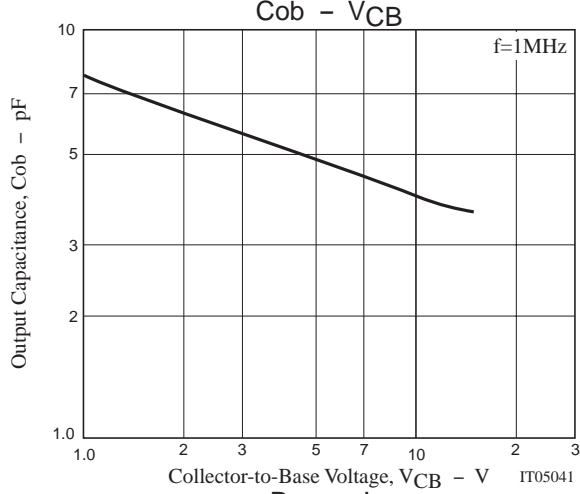
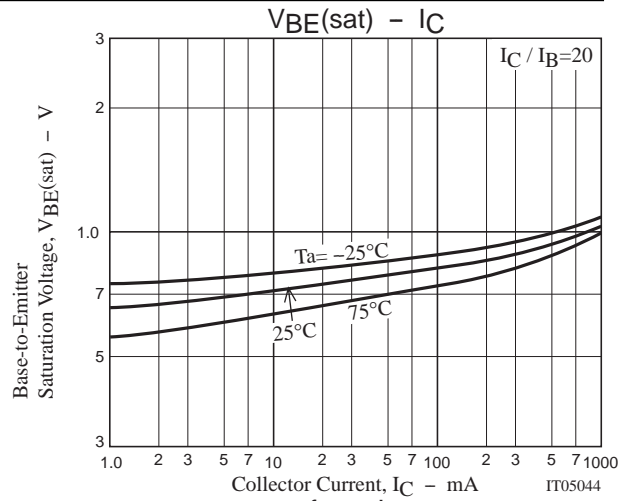
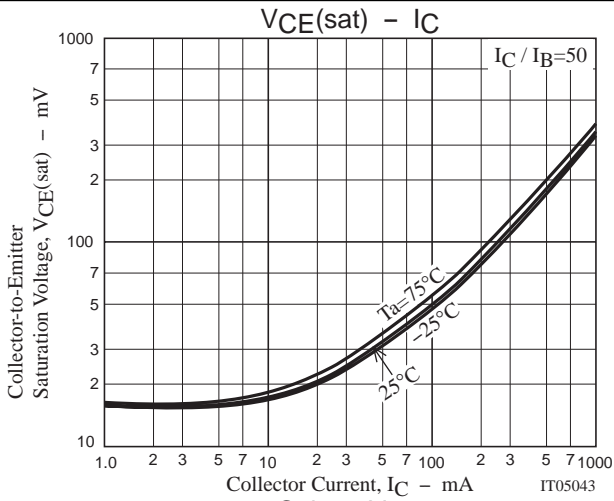
Switching Time Test Circuit



$$I_C=20I_{B1} = -20I_{B2}=400mA$$



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