

**30C01S**

## Low-Frequency General-Purpose Amplifier Applications

### Applications

- Low-frequency Amplifier, muting circuit.

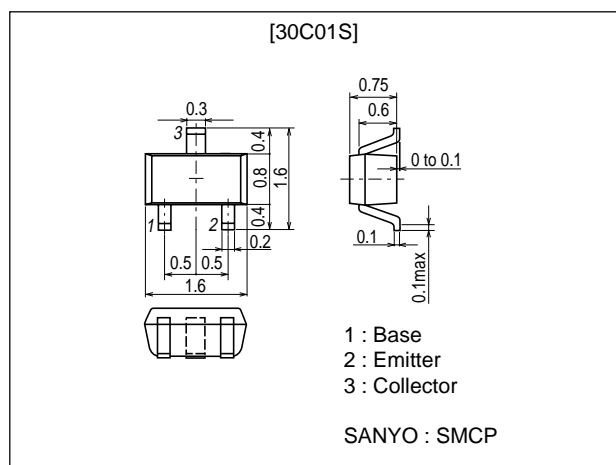
### Features

- Large current capacitance.
- Low collector-to-emitter saturation voltage (resistance).  
 $R_{CE(sat)}$  typ=0.70Ω [ $I_C=0.4A$ ,  $I_B=20mA$ ].
- Ultrasmall package facilitates miniaturization in end products.
- Small ON-resistance (Ron).

### Package Dimensions

unit : mm

2106A



### Specifications

#### Absolute Maximum Ratings at $T_a=25^\circ C$

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	$I_C$		400	mA
Collector Current (Pulse)	$I_{CP}$		800	mA
Collector Dissipation	$P_C$	Mounted on a glass epoxy board (20X30X1.6mm)	200	mW
Junction Temperature	$T_J$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

#### Electrical Characteristics at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=30V$ , $I_E=0$			0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4V$ , $I_C=0$			0.1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=2V$ , $I_C=10mA$	300		800	
Gain-Bandwidth Product	$f_T$	$V_{CE}=10V$ , $I_C=50mA$		380		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V$ , $f=1MHz$		2.4		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100mA$ , $I_B=5mA$		100	200	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=100mA$ , $I_B=5mA$		0.9	1.2	V

Marking : YQ

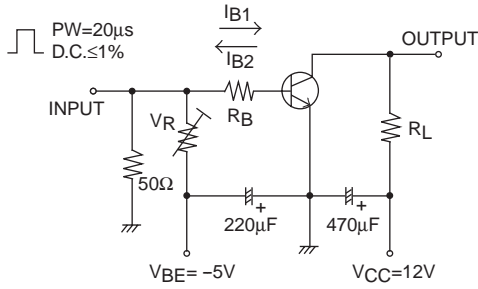
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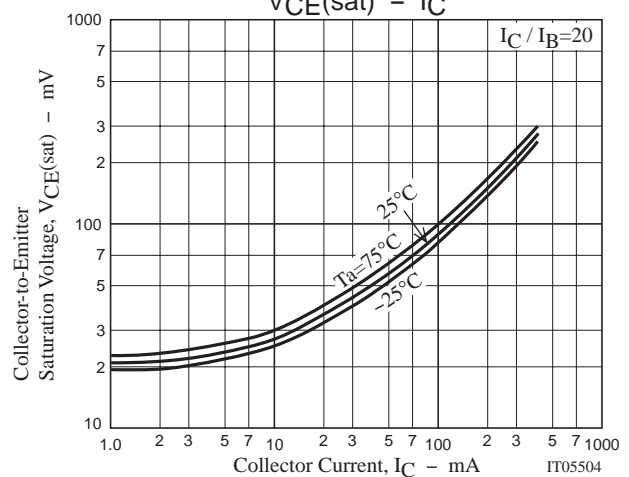
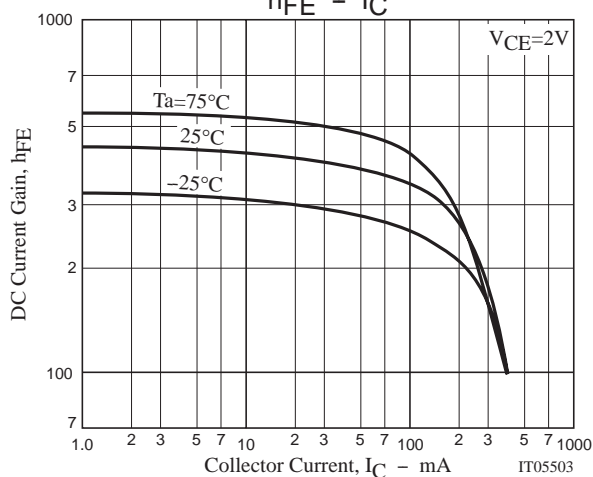
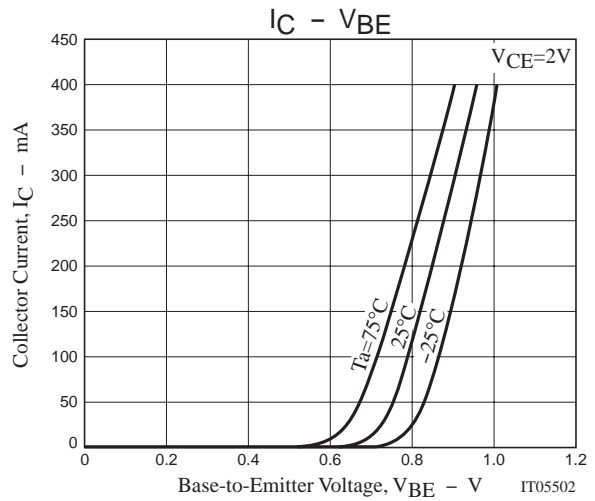
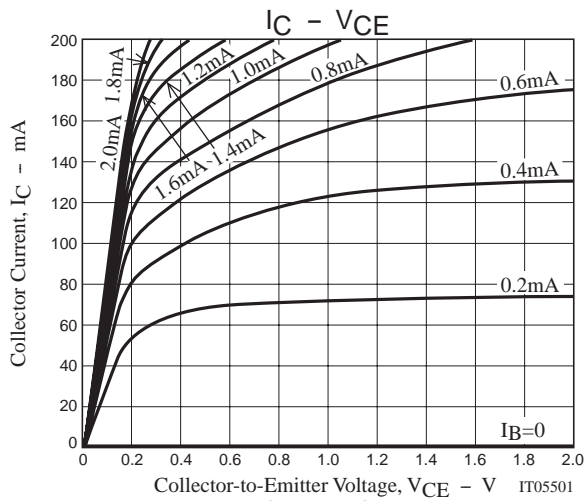
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	40			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	5			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		42		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		135		ns
Fall Time	$t_f$	See specified Test Circuit.		90		ns

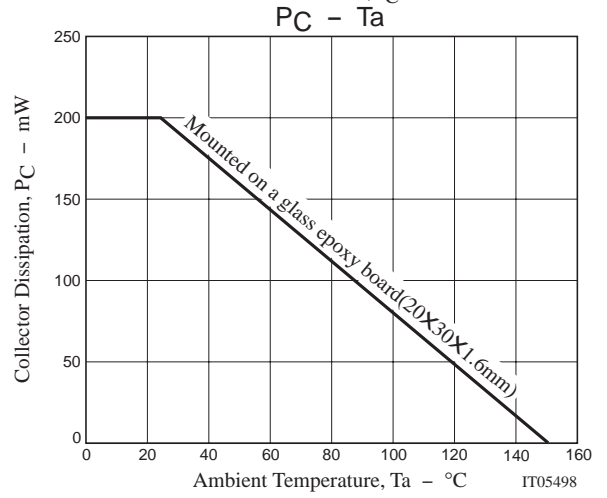
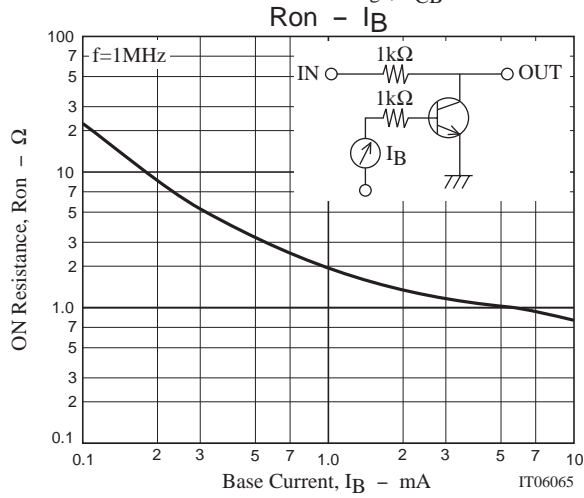
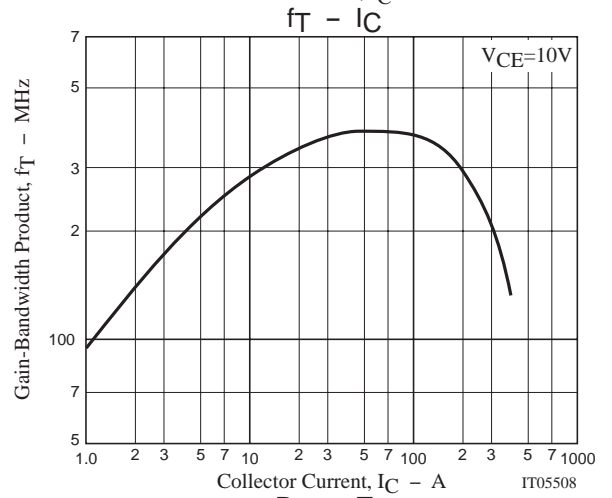
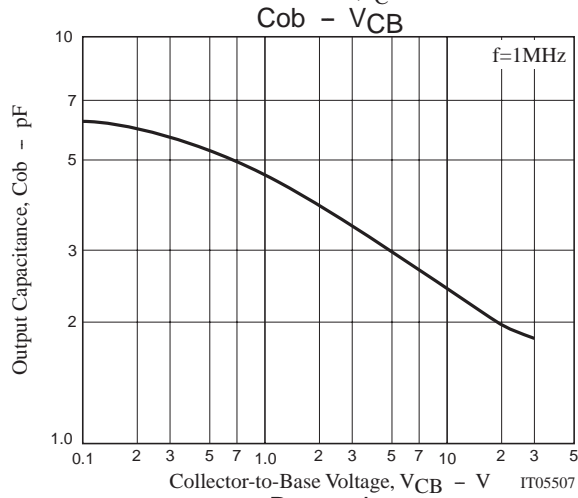
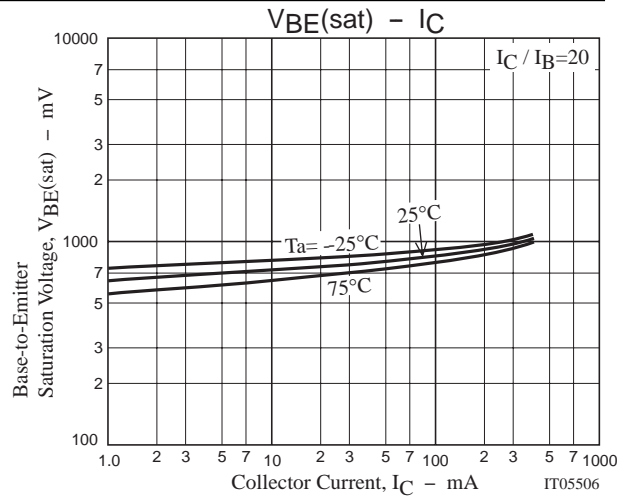
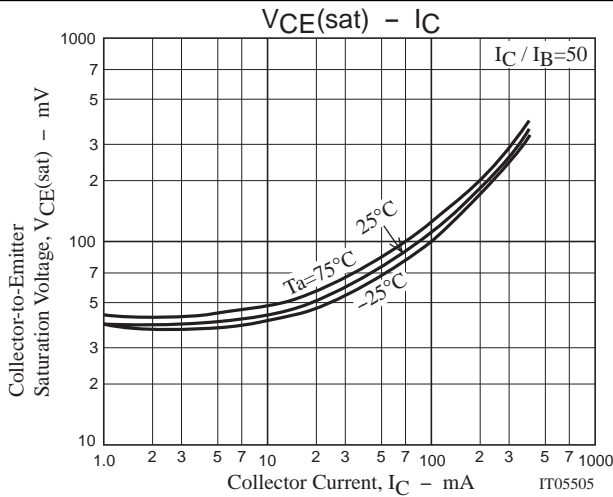
**Switching Time Test Circuit**



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



**30C01S**



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