

**30A02SS**

Low-Frequency General-Purpose Amplifier Applications

Applications

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

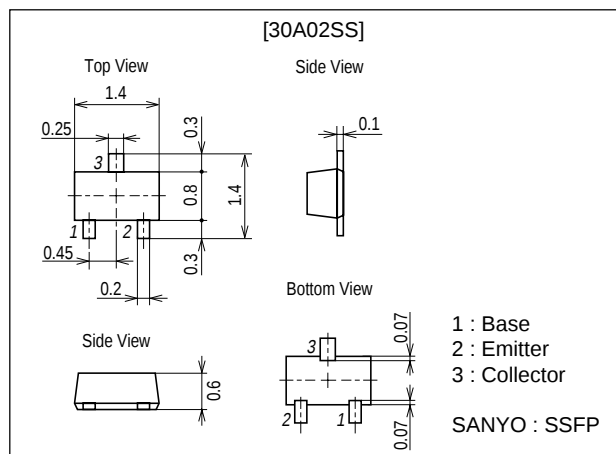
Features

- Large current capacitance.
- Low collector-to-emitter saturation voltage (resistance).
 $R_{CE(sat)} \text{ typ} = 580 \text{ m}\Omega$ [$I_C = 0.7 \text{ A}$, $I_B = 35 \text{ mA}$].
- Ultrasmall package facilitates miniaturization in end products.
- Small ON-resistance (R_{on}).

Package Dimensions

unit : mm

2159A



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-30	V
Collector-to-Emitter Voltage	V_{CEO}		-30	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-600	mA
Collector Current (Pulse)	I_{CP}		-1.2	A
Collector Dissipation	P_C	Mounted on a glass epoxy board (20X30X1.6mm)	200	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
Output Capacitance	C_{ob}	$V_{CB} = -10 \text{ V}$, $f = 1 \text{ MHz}$		4.7		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -200 \text{ mA}$, $I_B = -10 \text{ mA}$		-110	-220	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -200 \text{ mA}$, $I_B = -10 \text{ mA}$		-0.9	-1.2	V

Marking : XM

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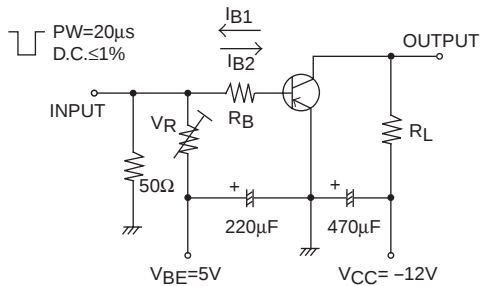
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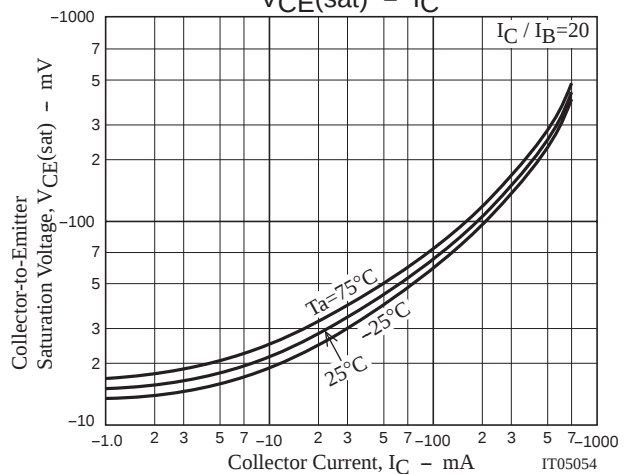
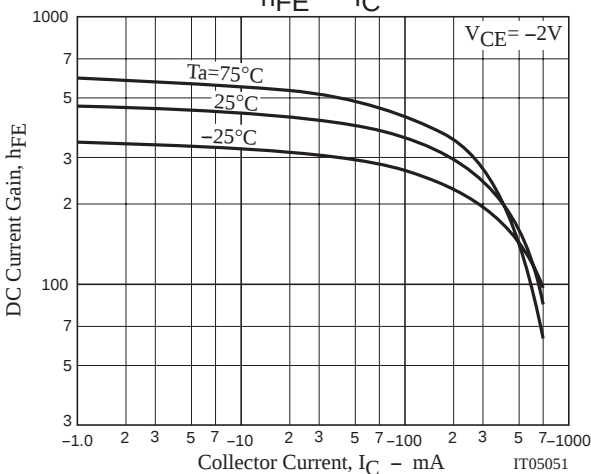
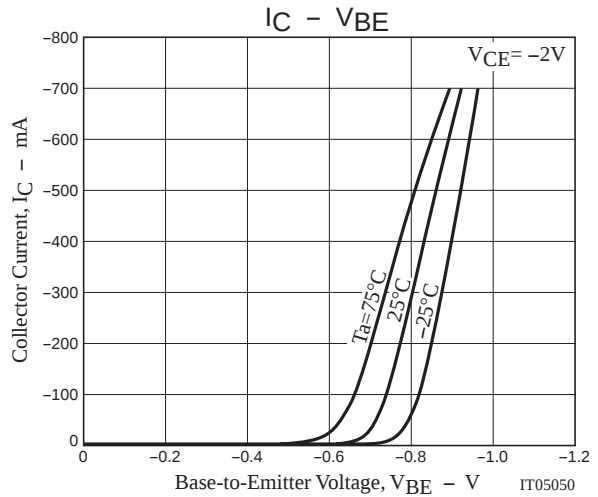
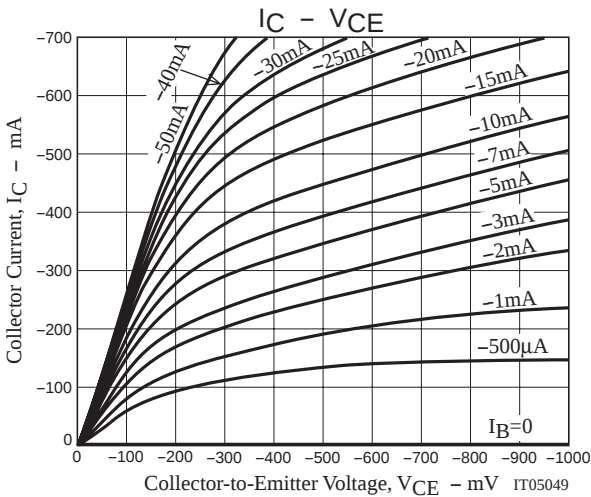
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		35		ns
Storage Time	t_{stg}	See specified Test Circuit.		125		ns
Fall Time	t_f	See specified Test Circuit.		25		ns

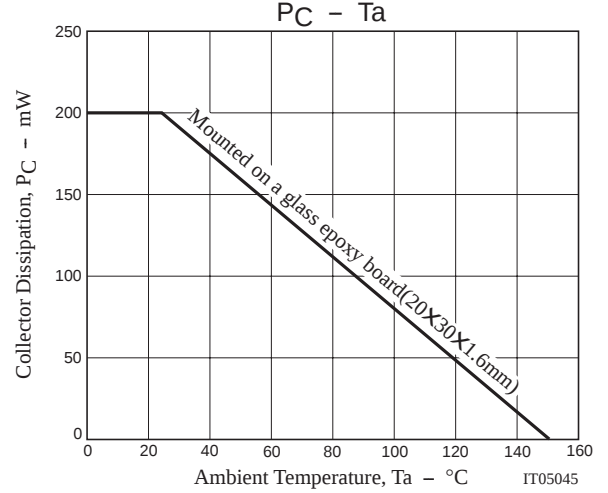
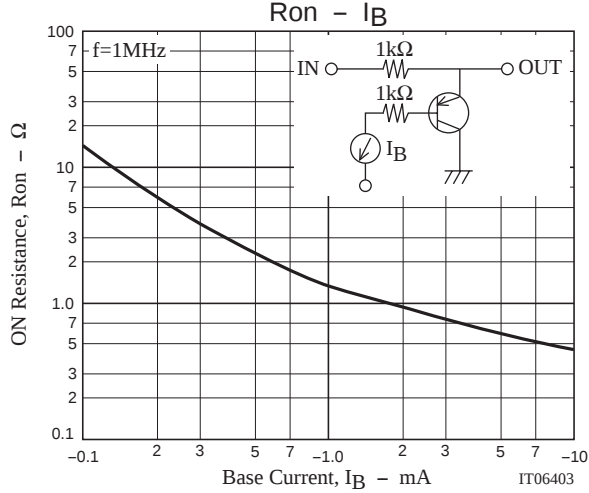
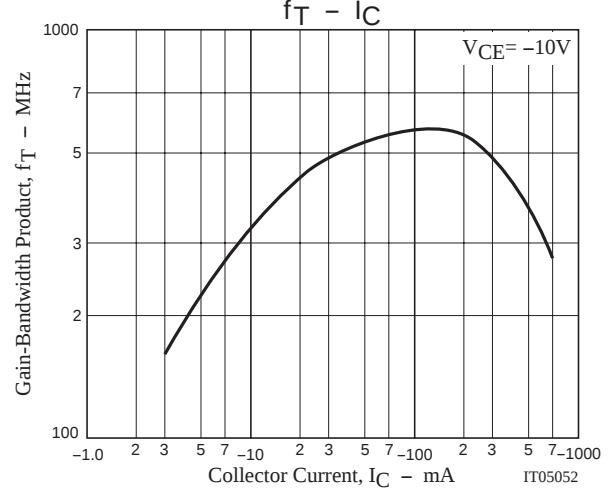
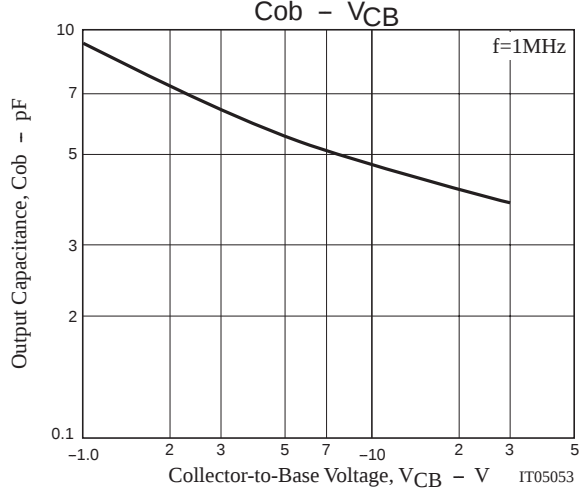
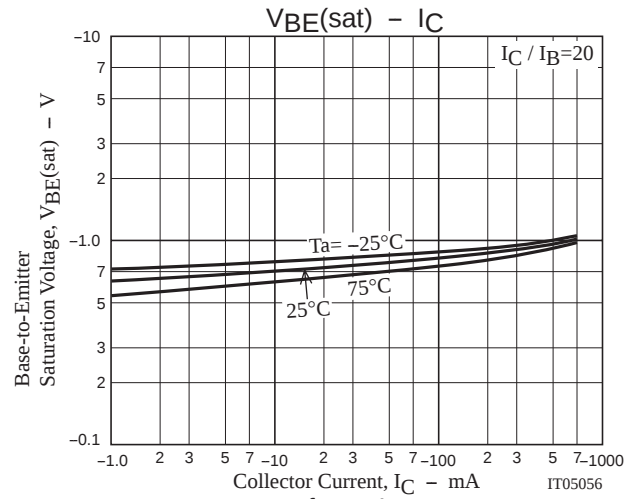
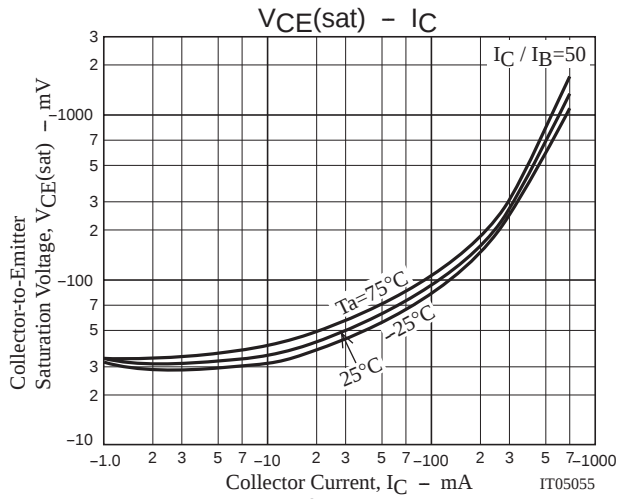
Switching Time Test Circuit



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



30A02SS



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