

**12A01SP**

Low-Frequency General-Purpose Amplifier Applications

Applications

- Low-frequency Amplifier, small motor drive, muting circuit.

Features

- Large current capacitance.
- Low collector-to-emitter saturation voltage (resistance).
RCE (sat) typ.=0.57Ω [IC=0.5A, IB=25mA].
- Small ON-resistance (Ron).

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		-15	V
Collector-to-Emitter Voltage	VCEO		-12	V
Emitter-to-Base Voltage	VEBO		-5	V
Collector Current	IC		-500	mA
Collector Current (Pulse)	ICP		-1.0	A
Collector Dissipation	PC		400	mW
Junction Temperature	TJ		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta=25°C

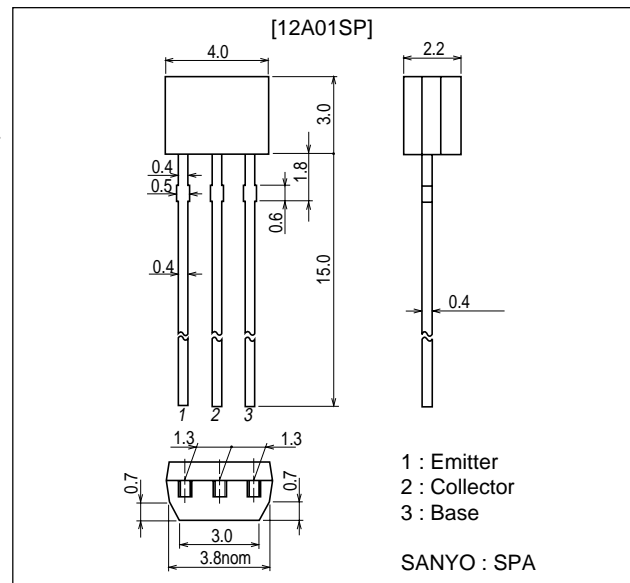
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =-12V, I _E =0			-0.1	μA
Emitter Cutoff Current	IEBO	V _{EB} =-4V, I _C =0			-0.1	μA
DC Current Gain	hFE	V _{CE} =-2V, I _C =-10mA	300		700	
Gain-Bandwidth Product	f _T	V _{CE} =-2V, I _C =-50mA		490		MHz

Marking : XP

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Package Dimensions

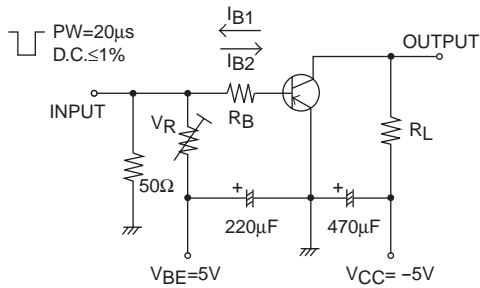
unit : mm
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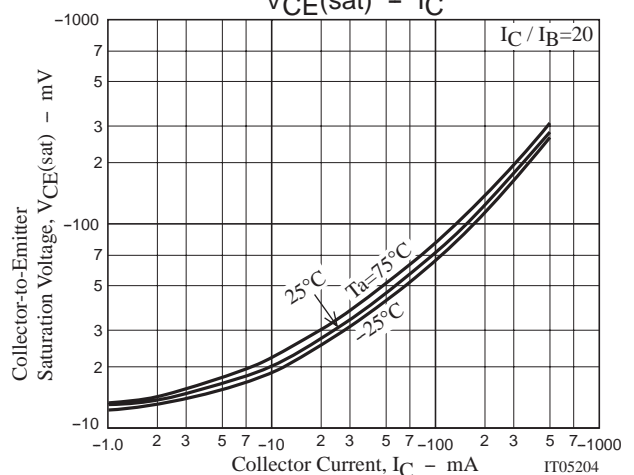
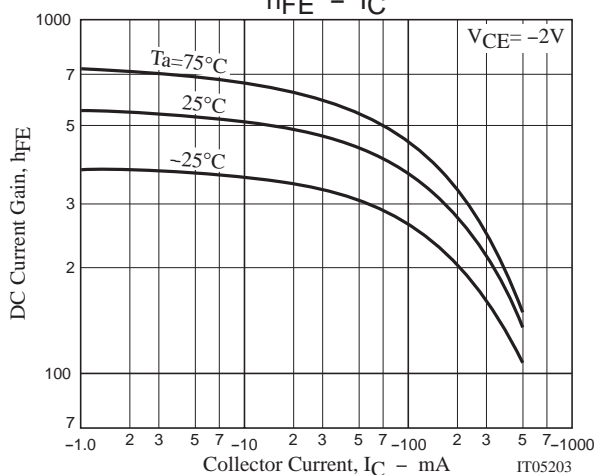
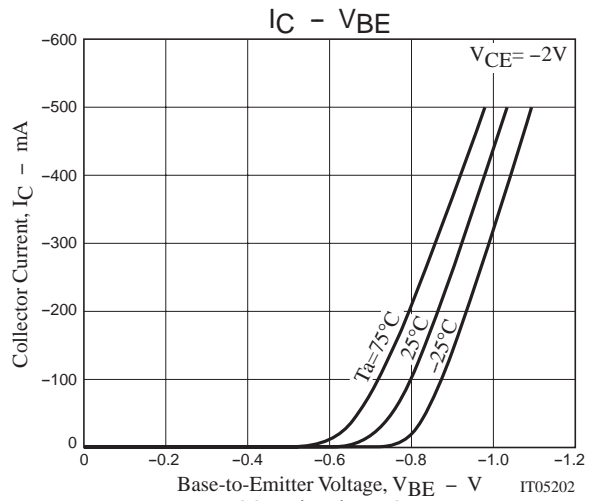
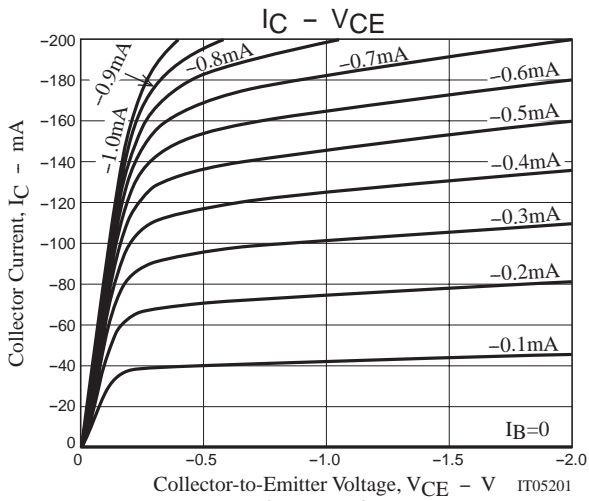
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CE} = -10V, f = 1MHz$		4		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -200mA, I_B = -10mA$		-150	-300	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -200mA, I_B = -10mA$		-0.9	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-12			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.		57		ns
Fall Time	t_f	See specified Test Circuit.		30		ns

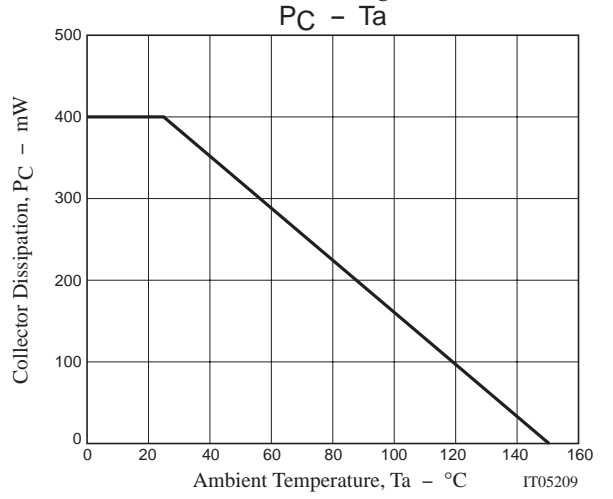
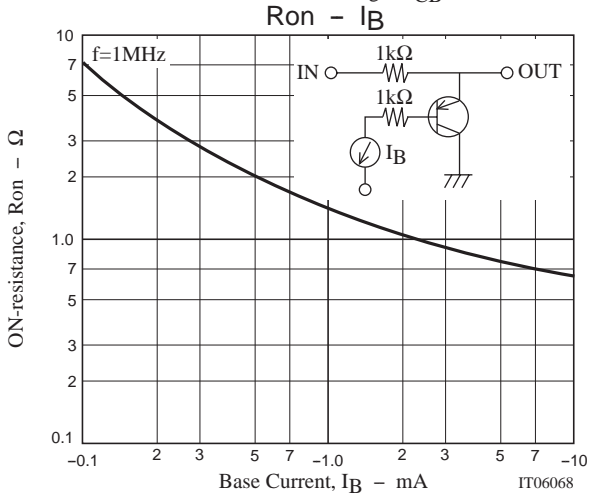
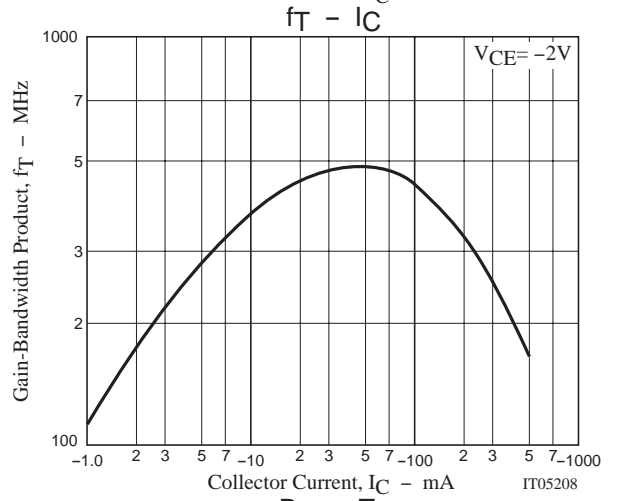
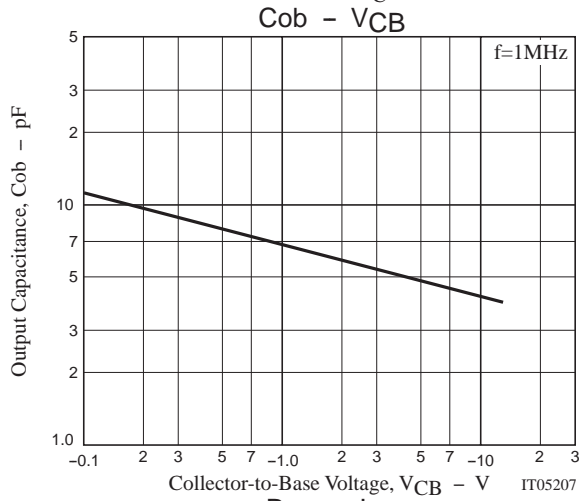
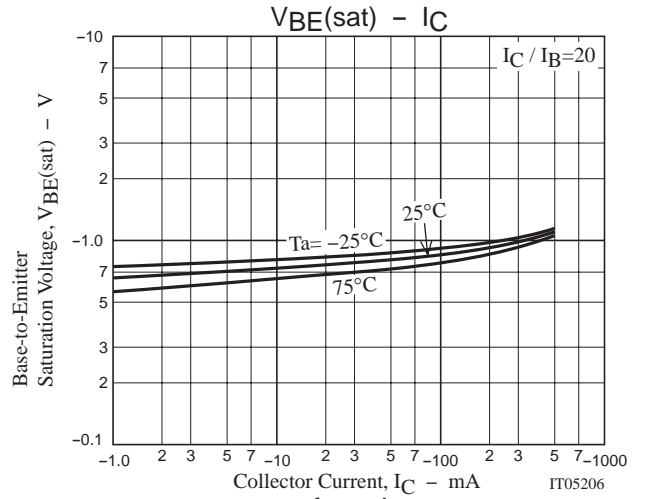
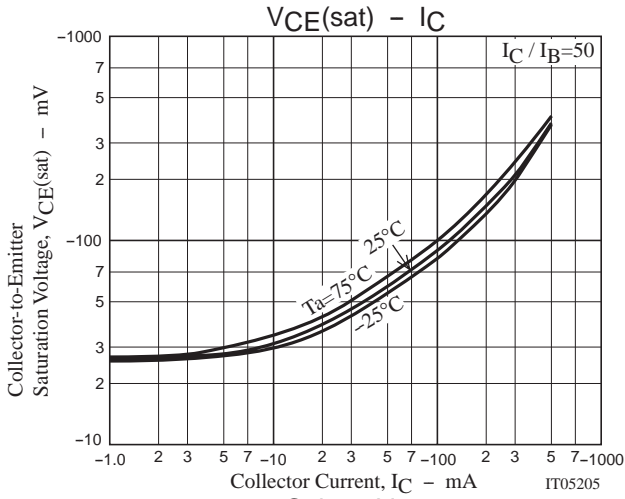
Switching Time Test Circuit



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



12A01SP



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