Ordering number : ENN7362

PNP Epitaxial Planar Silicon Transistor

30A02SS

Low-Frequency General-Purpose Amplifier Applications

Applications

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

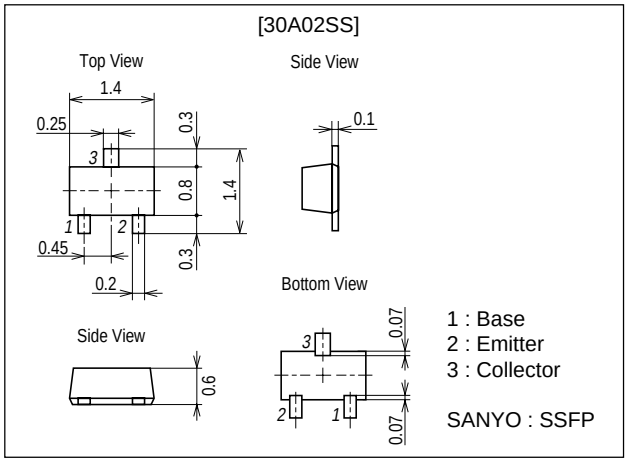
Features

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

Package Dimensions

unit : mm

2159A



Specifications

Absolute Maximum Ratings at Ta=25°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 (20×30×1.6mm)	200	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	I_{CBO}	V_{CB}=-30V, 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	200		500	
Gain-Bandwidth Product	f_T	V_{CE}=-10V, I_C=-50mA		520		MHz
Output Capacitance	Cob	V_{CB}=-10V, f=1MHz		4.7		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=-200mA, I_B=-10mA		-110	-220	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=-200mA, I_B=-10mA		-0.9	-1.2	V

Marking : XM

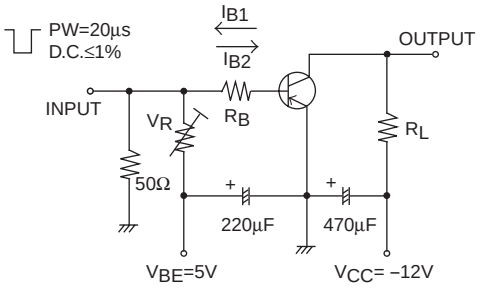
Continued on next page.

SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

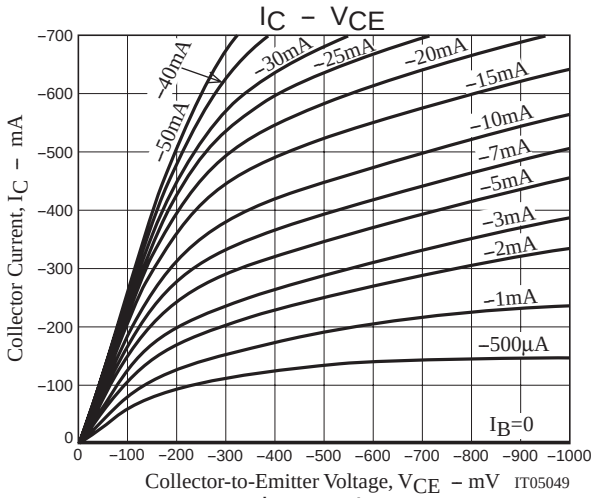
Continued from preceding page.

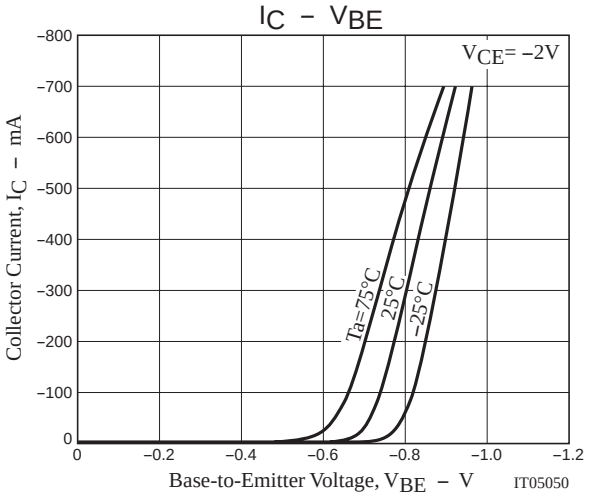
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–10μA, I_E=0	–30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	–30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=–10μA, I_C=0	–5			V
Turn-ON Time	t_{on}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

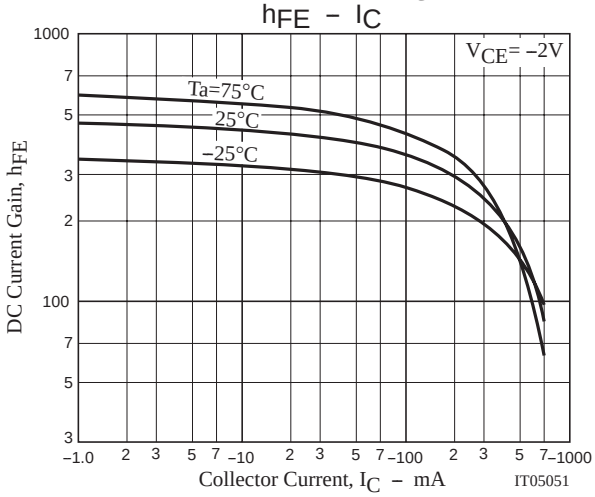
Switching Time Test Circuit

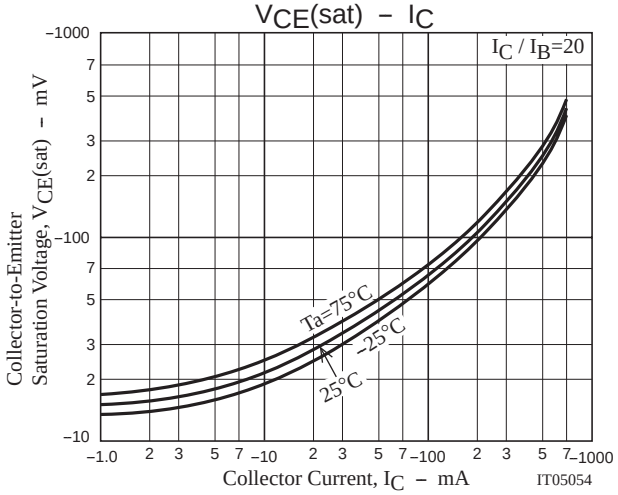


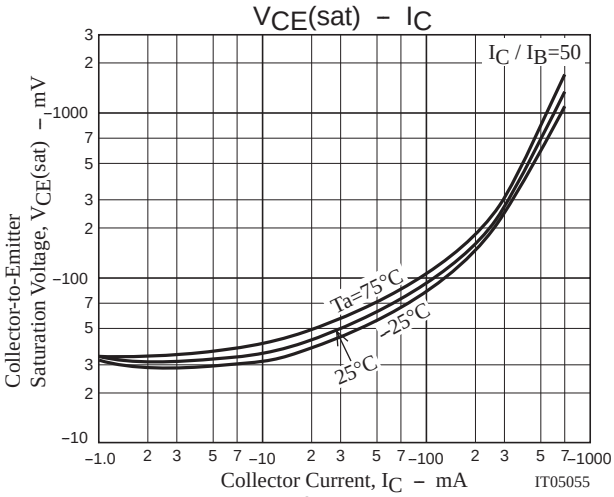
I_C=20I_{B1}= –20I_{B2}= –300mA

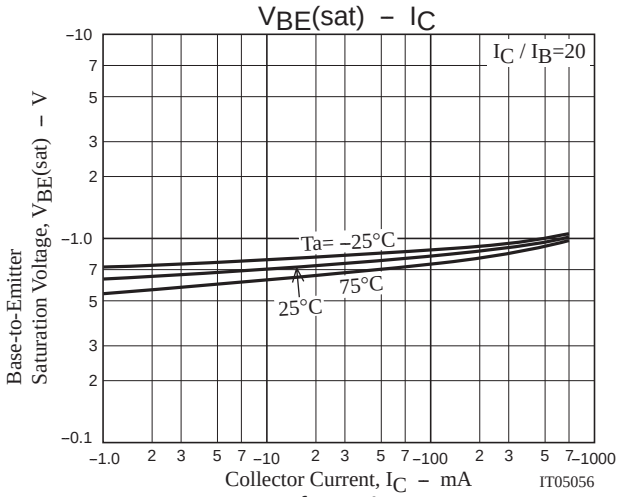


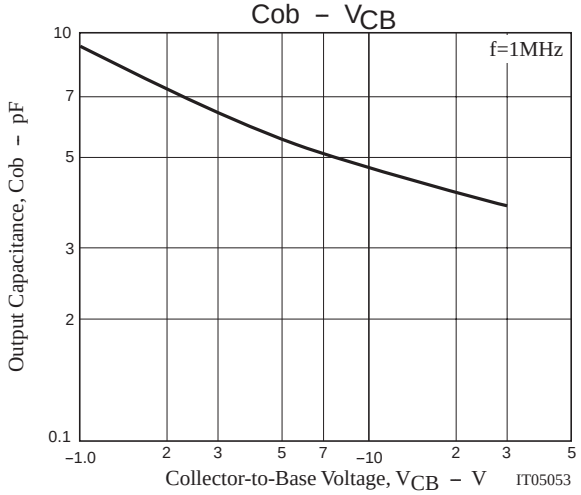


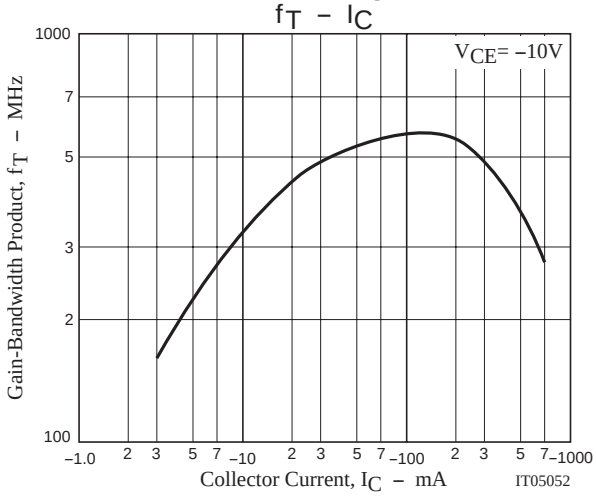


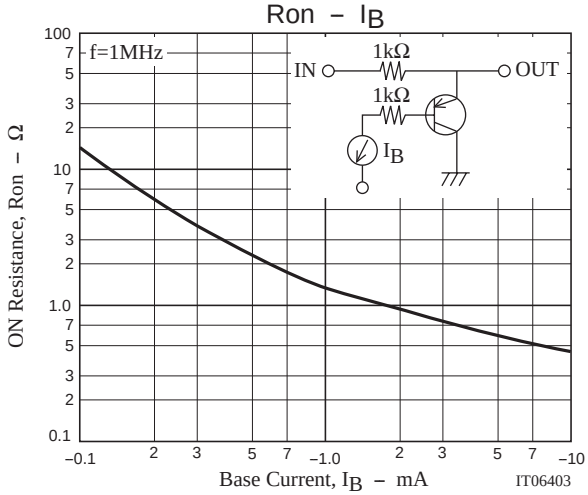


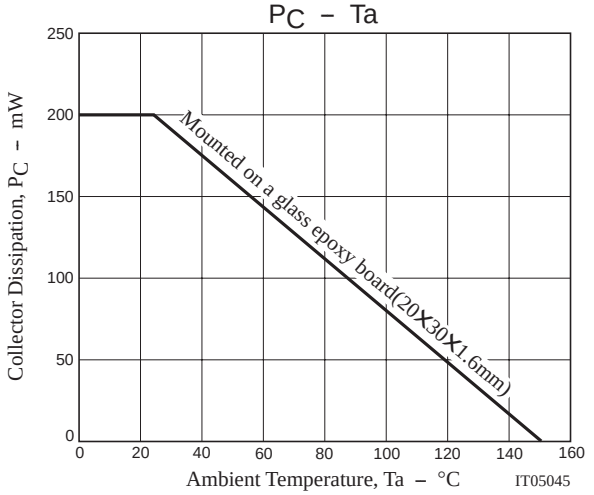

VCE(sat) – IC
IC / IB=50
Ta=75°C
–25°C
25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – mA
IT05055


VBE(sat) – IC
IC / IB=20
Ta= –25°C
75°C
25°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – mA
IT05056


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT05053


fT – IC
VCE= –10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
IT05052


Ron – IB
f=1MHz
IN
1kΩ
1kΩ
OUT
IB
ON Resistance, Ron – Ω
Base Current, IB – mA
IT06403


PC – Ta
Mounted on a glass epoxy board(20X30X1.6mm)
Collector Dissipation, PC – mW
Ambient Temperature, Ta – °C
IT05045