Ordering number : ENN7509

ON Semiconductor®

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DATA SHEET

30A01C

PNP Epitaxial Planar Silicon Transistor
Low-Frequency General-Purpose Amplifier Applications

Applications

- Low-frequency power amplifier, muting circuit.

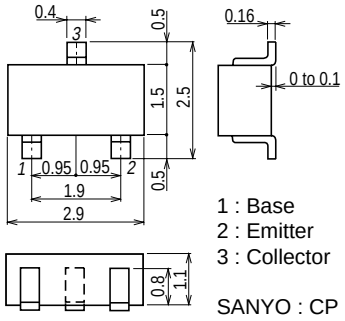
Features

- Large current capacity.
- Low collector-to-emitter saturation voltage (resistance). R_{CE}(sat) typ=0.67Ω[I_C=0.3A, I_B=15mA].
- Ultrasmall package facilitates miniaturization in end products.
- Small ON-resistance (Ron).

Package Dimensions

unit : mm
2018B

[30A01C]



1 : Base
2 : Emitter
3 : Collector

SANYO : CP

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		−300	mA
Collector Current (Pulse)	I_{CP}		−600	mA
Collector Dissipation	P_C	Mounted on a glass epoxy board (20×30×1.6mm).	300	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			−0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=−4V, I_C=0			−0.1	μA
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		3		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=−100mA, I_B=−5mA		−110	−220	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=−100mA, I_B=−5mA		−0.9	−1.2	V

Marking : XQ

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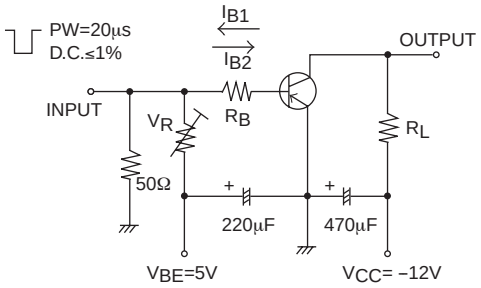
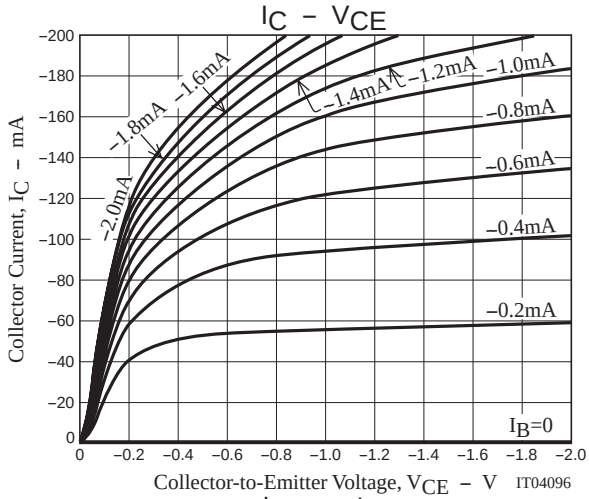
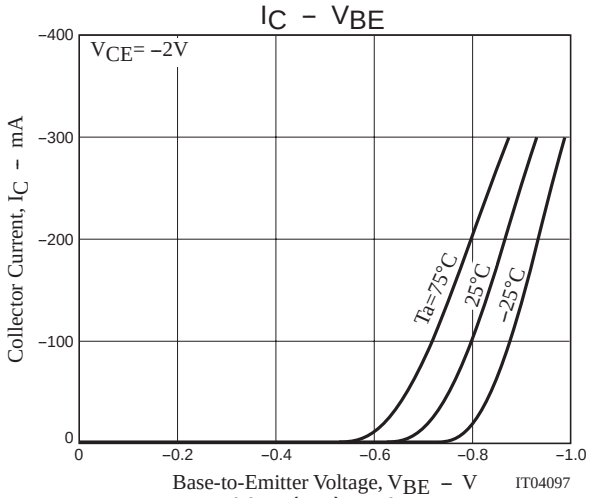
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–10μA, I_E=0	–30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	–30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=–10μA, I_C=0	–5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		39		ns
Storage Time	t_{stg}	See specified Test Circuit.		200		ns
Fall Time	t_f	See specified Test Circuit.		48		ns

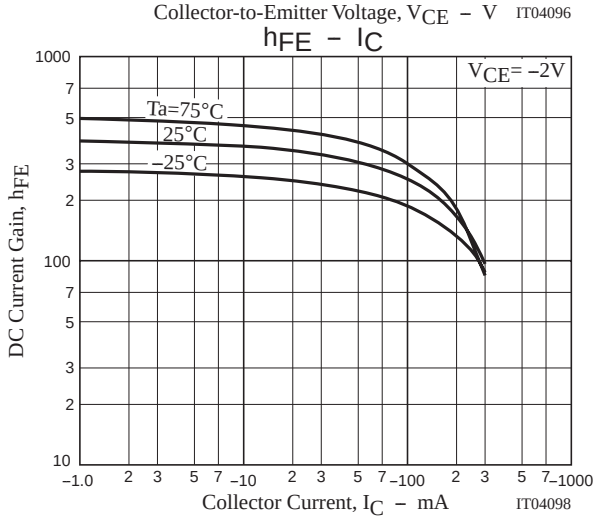
Switching Time Test Circuit

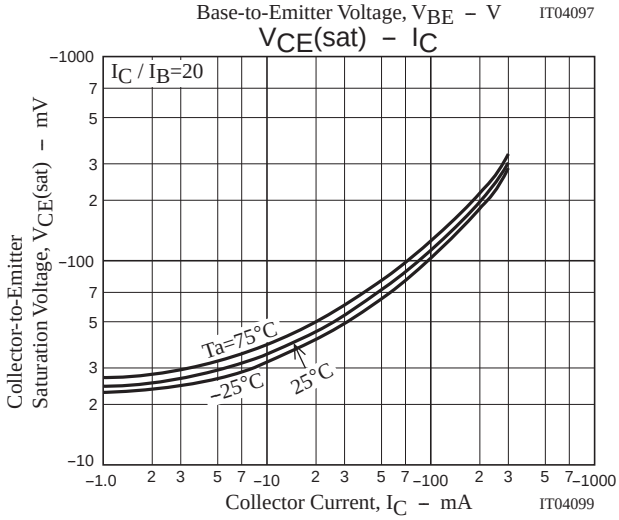


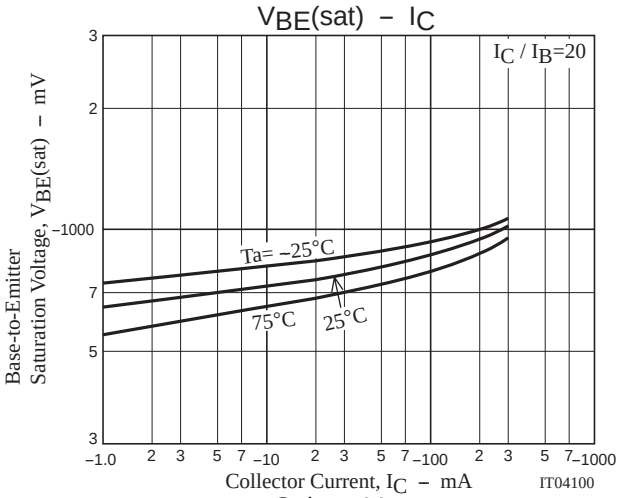
I_C=20I_{B1}= –20I_{B2}= –100mA

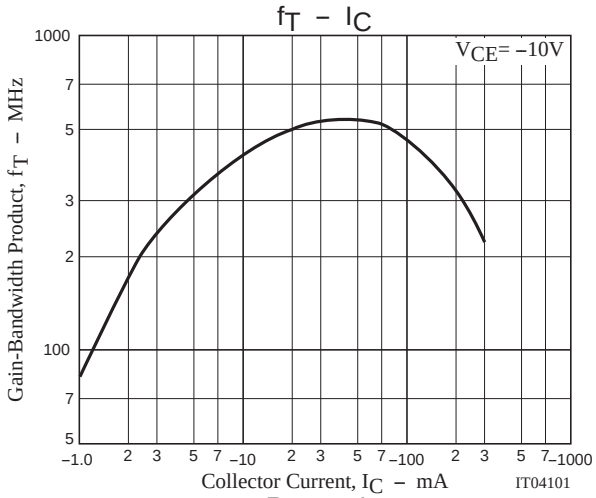


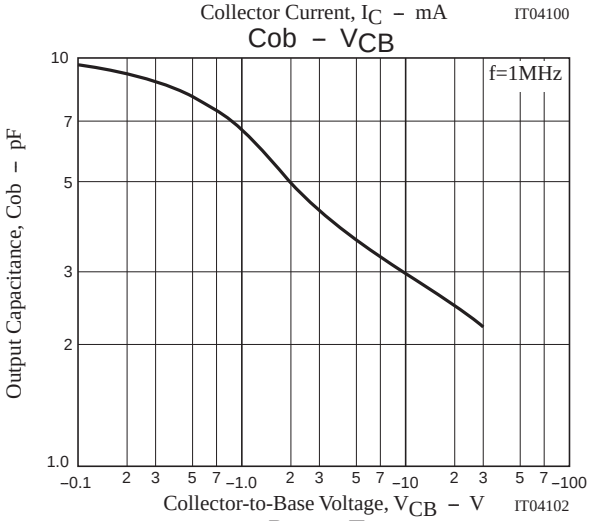


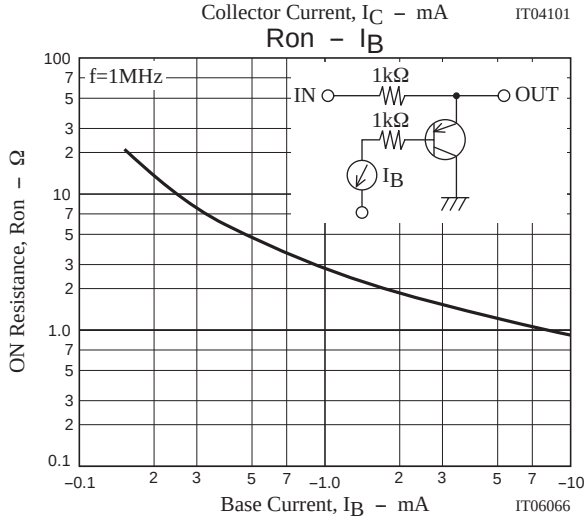


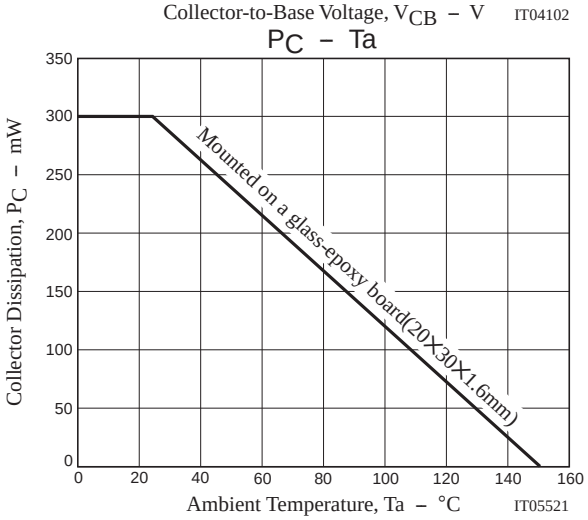



VBE(sat) – IC
IC / IB=20
Ta= –25°C
75°C
25°C
Base-to-Emitter Saturation Voltage, VBE(sat) – mV
Collector Current, IC – mA
IT04100


fT – IC
VCE= –10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
IT04101


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT04102


Ron – IB
f=1MHz
IN
1kΩ
1kΩ
OUT
IB
ON Resistance, Ron – Ω
Base Current, IB – mA
IT06066


PC – Ta
Mounted on a glass-epoxy board(20X30X1.6mm)
Collector Dissipation, PC – mW
Ambient Temperature, Ta – °C
IT05521

PUBLICATION ORDERING INFORMATION

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