Ordering number : EN7920A

SANYO Semiconductors
DATA SHEET

An ON Semiconductor Company

2SA2124 — PNP Epitaxial Planar Silicon Transistor
High-Current Switching Applications

Applications

- Voltage regulators, relay drivers, lamp drivers, electrical equipment.

Features

- Adoption of MBIT processes.
- Low collector-to-emitter saturation voltage.
- High current capacity.
- High-speed switching.

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}		–6	V
Collector Current	I_C		–2	A
Collector Current (Pulse)	I_{CP}		–5	A
Base Current	I_B		–400	mA
Collector Dissipation	P_C	Mounted on a ceramic board (450mm²×0.8m)	1.3	W
		Tc=25°C	3.5	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		–55 to +150	°C

Marking : AX

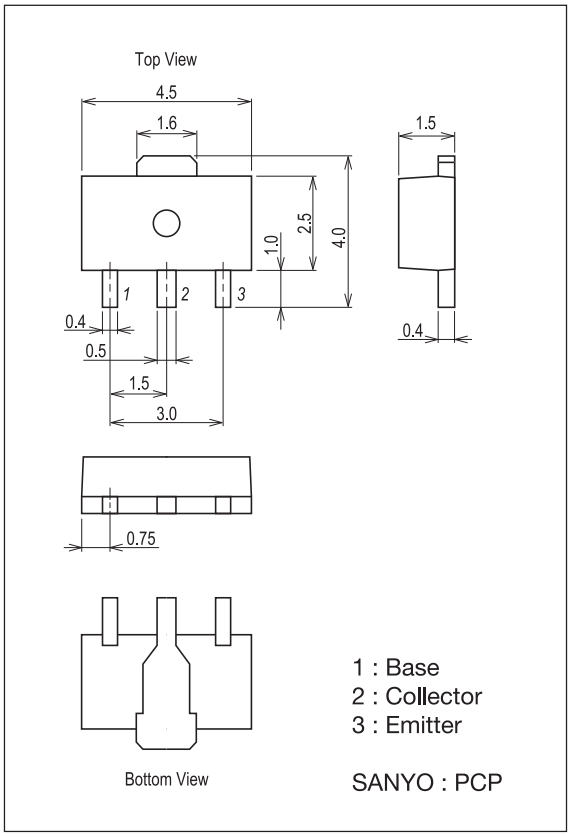
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=–30V, I_E=0A			–0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–4V, I_C=0A			–0.1	μA
DC Current Gain	$h_{FE}(1)$	V_{CE}=–2V, I_C=–100mA	200		560	
	$h_{FE}(2)$	V_{CE}=–2V, I_C=–1.5A	65			
Gain-Bandwidth Product	f_T	V_{CE}=–10V, I_C=–300mA		440		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE}(sat)$	I_C=–1.5A, I_B=–75mA		–0.2	–0.4	V
Base-to-Emitterr Saturation Voltage	$V_{BE}(sat)$	I_C=–1.5V, I_B=–75mA		–0.95	–1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–10μA, I_E=0A	–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=0A	–6			V
Output Capacitance	Cob	V_{CB}=–10V, f=1MHz		17		pF
Turn-On Time	t_{on}	See specified Test Circuit.		45		ns
Storage Time	t_{stg}	See specified Test Circuit.		200		ns
Fall Time	t_f	See specified Test Circuit.		23		ns

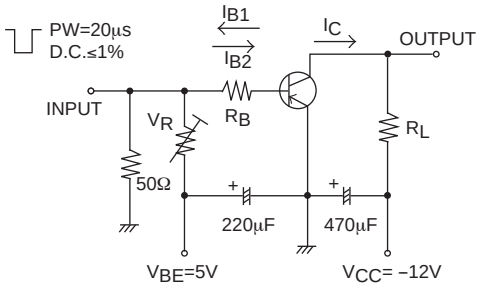
Package Dimensions

unit : mm (typ)

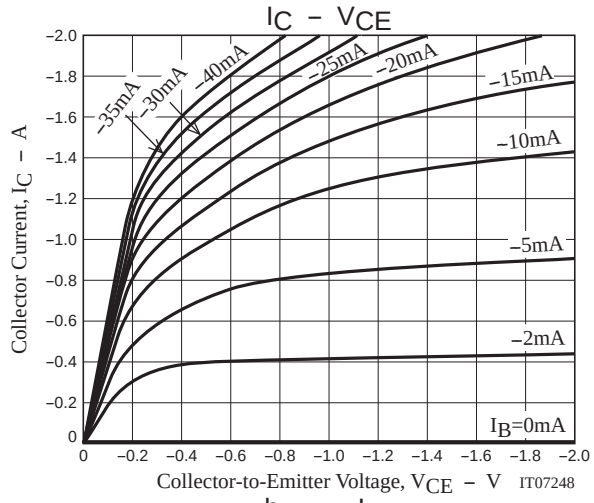
7007B-004

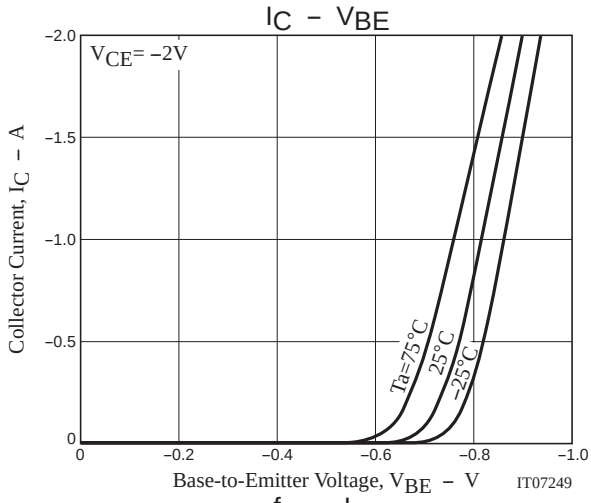


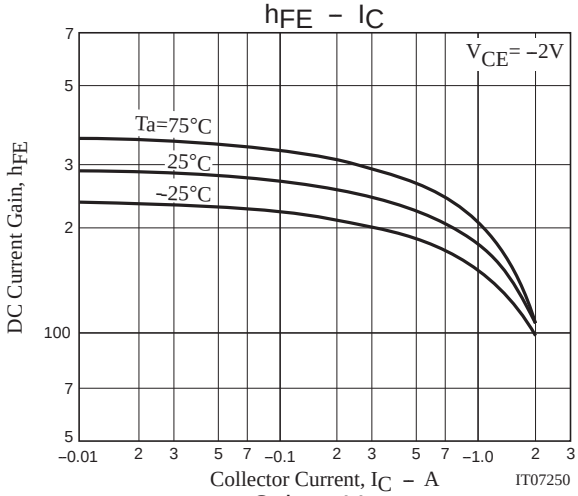
Switching Time Test Circuit

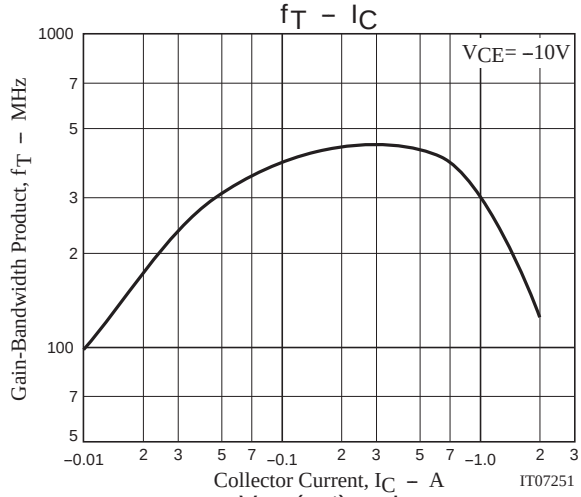


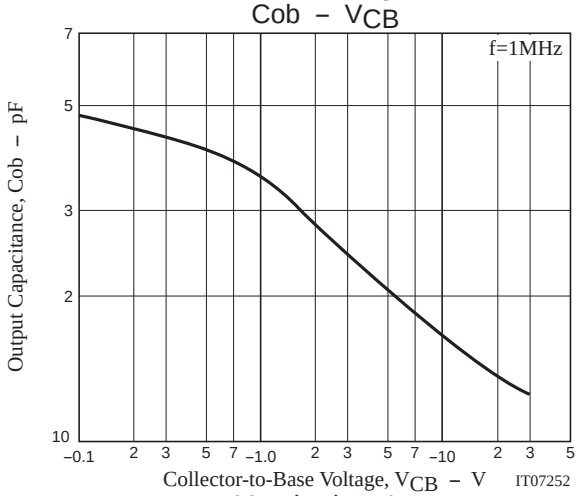
I_C= –20I_{B1}=20I_{B2}= –0.5A

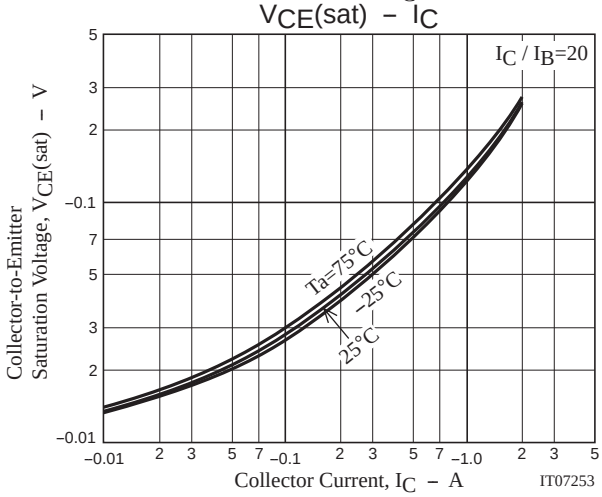

IC – VCE
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT07248
–35mA
–30mA
–40mA
–25mA
–20mA
–15mA
–10mA
–5mA
–2mA
IB=0mA

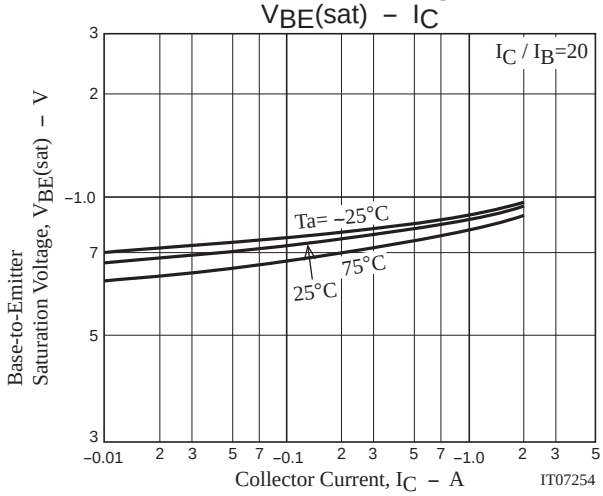

IC – VBE
VCE= –2V
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
IT07249
Ta=75°C
25°C
–25°C

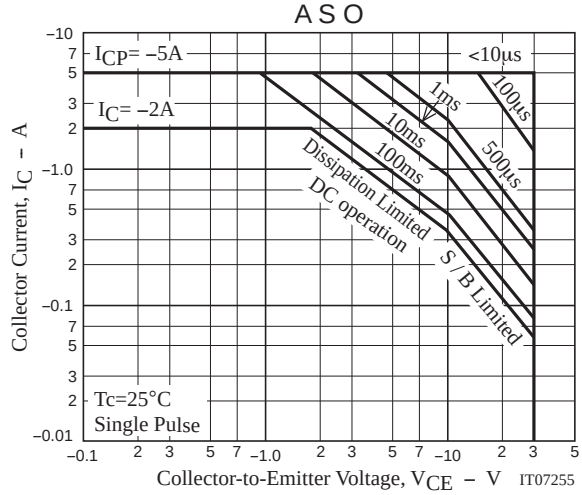

hFE – IC
VCE= –2V
DC Current Gain, hFE
Collector Current, IC – A
IT07250
Ta=75°C
25°C
–25°C


fT – IC
VCE= –10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT07251


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT07252


VCE(sat) – IC
IC / IB=20
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT07253
Ta=75°C
–25°C
25°C


VBE(sat) – IC
IC / IB=20
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT07254
Ta= –25°C
75°C
25°C


A S O
ICP= –5A
IC= –2A
<10µs
100µs
1ms
10ms
100ms
500µs
Dissipation Limited
DC operation
S / B Limited
Tc=25°C
Single Pulse
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT07255