Ordering number: EN3973

SANYO

No.3973

2SA1814

PNP Epitaxial Planar Silicon Transistor

Low-Frequency General-Purpose Amp, Driver, Muting Circuit Applications

Features

- Very small-sized package permitting 2SA1814-applied sets to be made smaller and slimmer.
- Adoption of FBET process.
- High DC current gain (h_{FE} = 500 to 1200).
- Low collector-to-emitter saturation voltage ($V_{CE(sat)} \leqq 0.3V$).
- High V_{EBO} ($V_{EBO} \geqq 15V$).

Absolute Maximum Ratings at Ta = 25°C

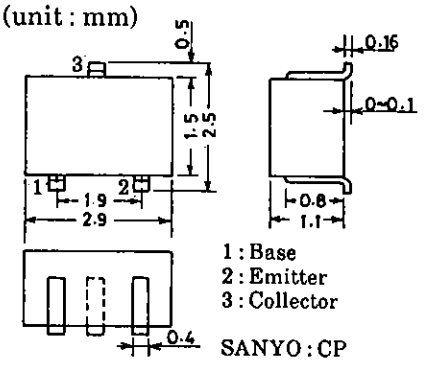
				unit
Collector-to-Base Voltage	V_{CBO}		−30	V
Collector-to-Emitter Voltage	V_{CEO}		−25	V
Emitter-to-Base Voltage	V_{EBO}		−15	V
Collector Current	I_C		−150	mA
Collector Current (Pulse)	I_{CP}		−300	mA
Base Current	I_B		−30	mA
Collector Dissipation	P_C	Mounted on board	250	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=-20V, I_E=0$			−0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-10V, I_C=0$			−0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=-5V, I_C=-1mA$	500	800	1200	
Gain-Bandwidth Product	f_T	$V_{CE}=-10V, I_C=-10mA$		210		MHz
Output Capacitance	Cob	$V_{CB}=-10V, f=1MHz$		2.6		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=-50mA, I_B=-1mA$		−0.15	−0.3	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=-50mA, I_B=-1mA$		−0.78	−1.1	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	−30			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	−25			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	−15			V

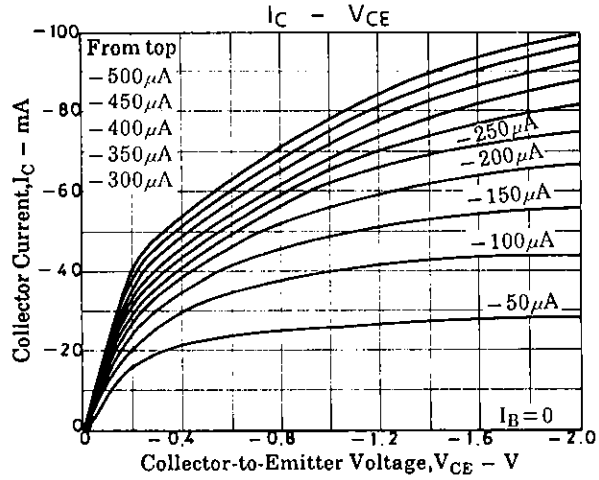
Marking : KS

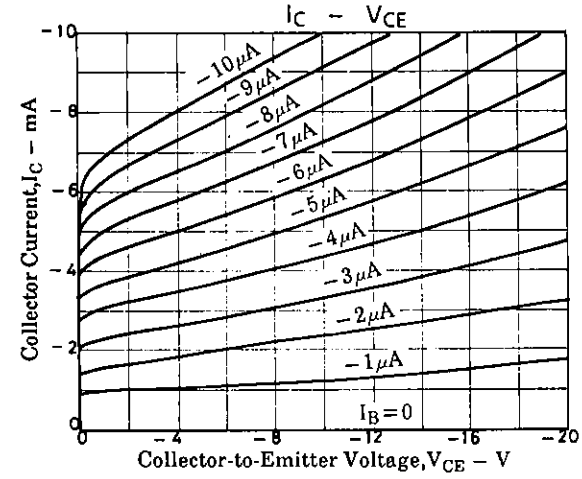
Package Dimensions 2018B
(unit : mm)

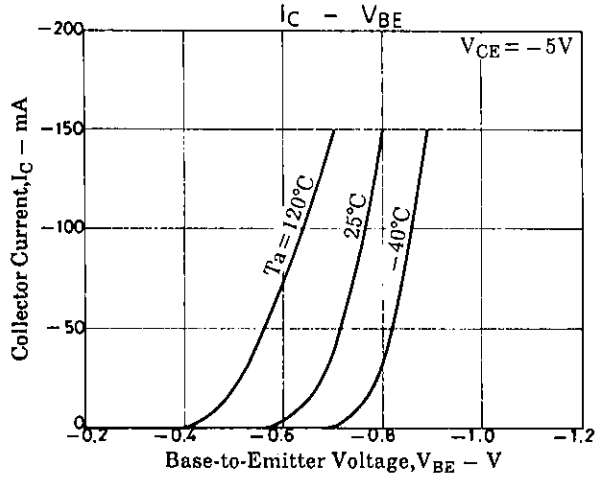


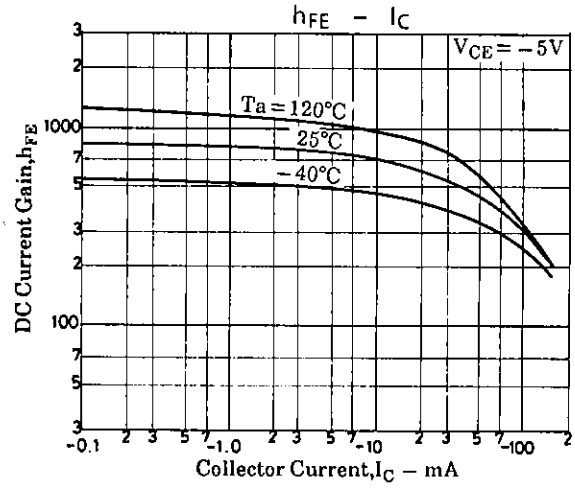
1 : Base
2 : Emitter
3 : Collector

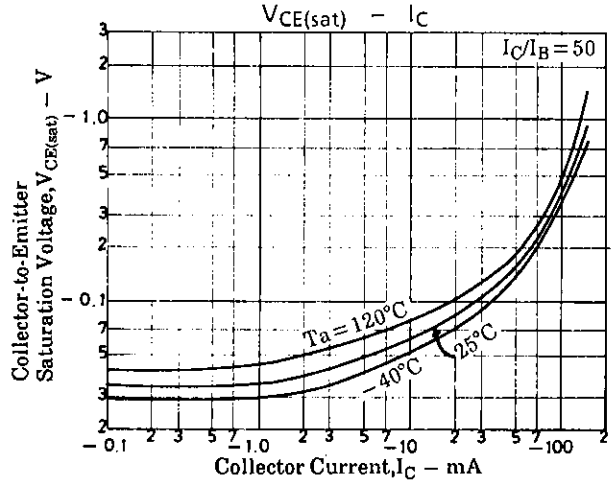
SANYO : CP

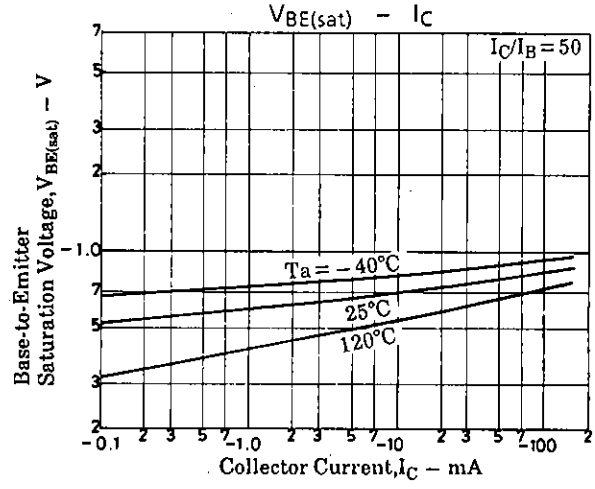

I_C – V_{CE}
From top
−500μA
−450μA
−400μA
−350μA
−300μA
−250μA
−200μA
−150μA
−100μA
−50μA
I_B=0
Collector Current,I_C – mA
Collector-to-Emitter Voltage,V_{CE} – V

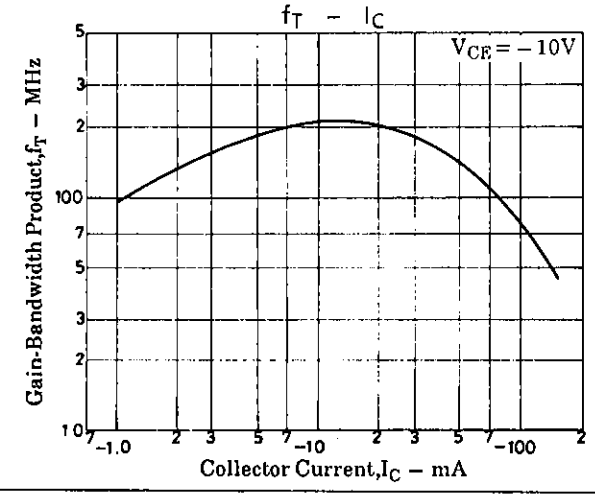

I_C – V_{CE}
−10μA
−9μA
−8μA
−7μA
−6μA
−5μA
−4μA
−3μA
−2μA
−1μA
I_B=0
Collector Current,I_C – mA
Collector-to-Emitter Voltage,V_{CE} – V

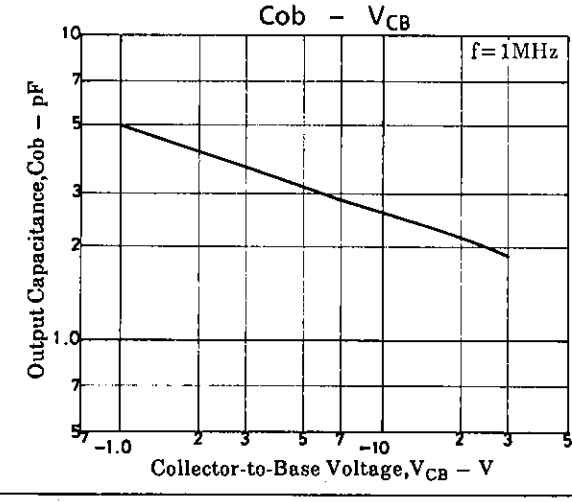

I_C – V_{BE}
V_{CE}=−5V
Ta=120°C
25°C
−40°C
Collector Current,I_C – mA
Base-to-Emitter Voltage,V_{BE} – V

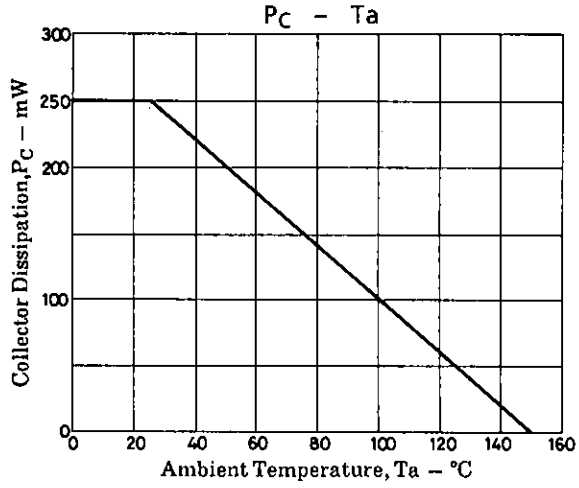

h_{FE} – I_C
V_{CE}=−5V
Ta=120°C
25°C
−40°C
DC Current Gain,h_{FE}
Collector Current,I_C – mA


$V_{CE(sat)}$ – I_C
I_C/I_B=50
Ta=120°C
25°C
−40°C
Collector-to-Emitter Saturation Voltage,$V_{CE(sat)}$ – V
Collector Current,I_C – mA


$V_{BE(sat)}$ – I_C
I_C/I_B=50
Ta=−40°C
25°C
120°C
Base-to-Emitter Saturation Voltage,$V_{BE(sat)}$ – V
Collector Current,I_C – mA


f_T – I_C
V_{CE}=−10V
Gain-Bandwidth Product,f_T – MHz
Collector Current,I_C – mA


Cob – V_{CB}
f=1MHz
Output Capacitance,Cob – pF
Collector-to-Base Voltage,V_{CB} – V



■ No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.

■ Anyone purchasing any products described or contained herein for an above-mentioned use shall:
① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.

■ Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.