Ordering number:EN2926A

PNP Epitaxial Planar Silicon Transistor

2SA1641

High-Current Switching Applications

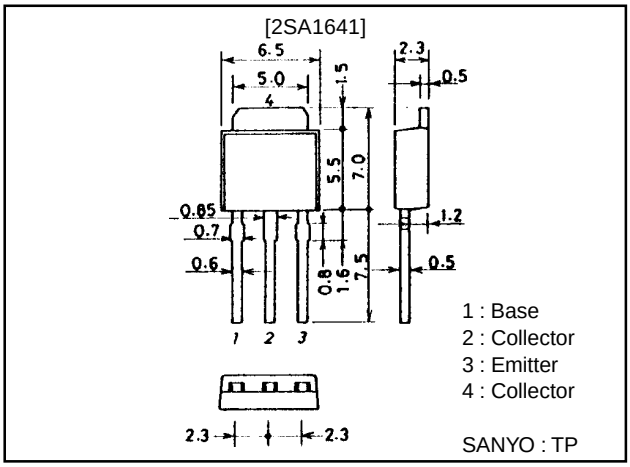
Features

- Adoption of FBET, MBIT processes.
- Low saturation voltage.
- Fast switching speed.
- Large current capacity.
- Small and slim package making it easy to make 2SA1641-used set smaller.

Package Dimensions

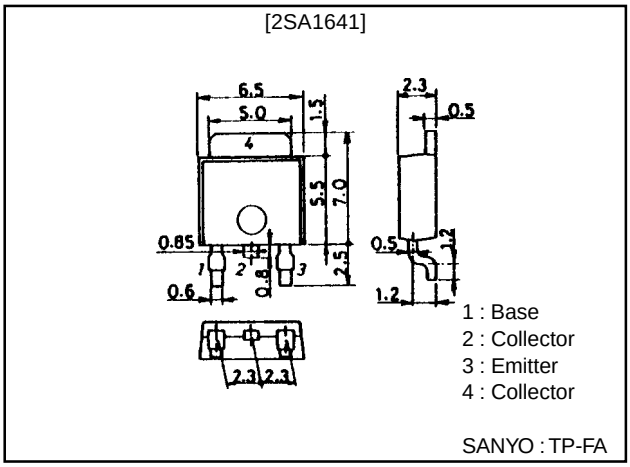
unit:mm

2045B



unit:mm

2044B



SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		–25	V
Collector-to-Emitter Voltage	V_{CEO}		–20	V
Emitter-to-Base Voltage	V_{EBO}		–5	V
Collector Current	I_C		–8	A
Colletor Current (Pulse)	I_{CP}		–12	A
Base Current	I_B		–1.5	A
Collector Dissipation	P_C		1	W
		Tc=25˚C	15	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

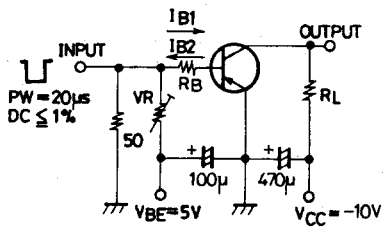
Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=–20V, I_E=0			–1	µA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–4V, I_C=0			–1	µA
DC Current Gain	$h_{FE}1$	V_{CE}=–2V, I_C=–500mA	100*		400*	
	$h_{FE}2$	V_{CE}=–2V, I_C=–6A	60			
Gain-Bandwidth Product	f_T	V_{CE}=–2V, I_C=–500mA		200		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=–5A, I_B=–250mA		–220	–400	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=–5A, I_B=–250mA		–1	–1.3	V
Collector Output Capacitance	C_{ob}	V_{CB}=–10V, f=1MHz		85		pF
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–10µA, I_E=0	–25			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	–20			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		30	300	ns
Storage Time	t_{stg}	See specified Test Circuit		200	800	ns
Fall Time	t_f	See specified Test Circuit		15	150	ns

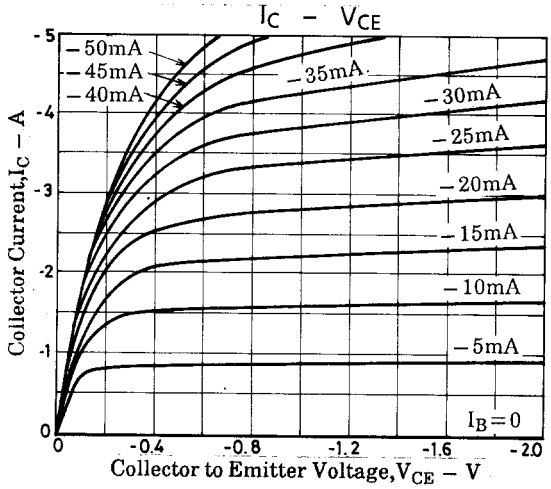
* : The 2SA1641 is classified by 500mA h_{FE} as follows :

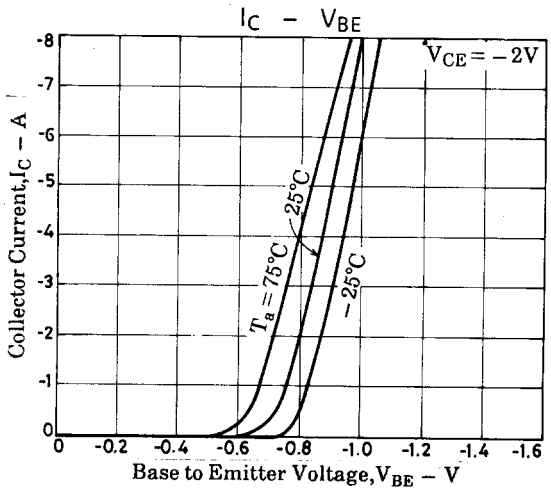
100 R 200	140 S 280	200 T 400

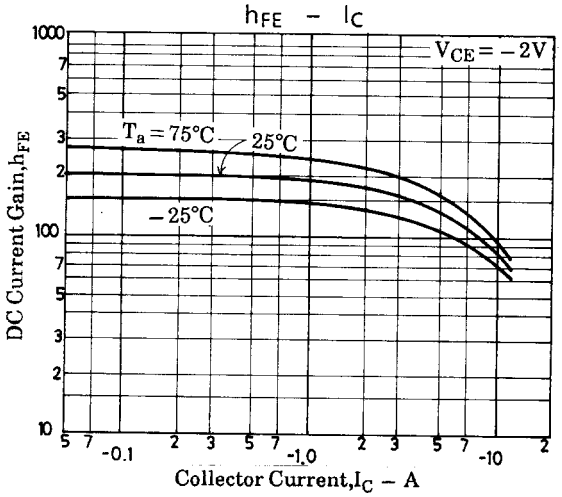
Switching Time Test Circuit

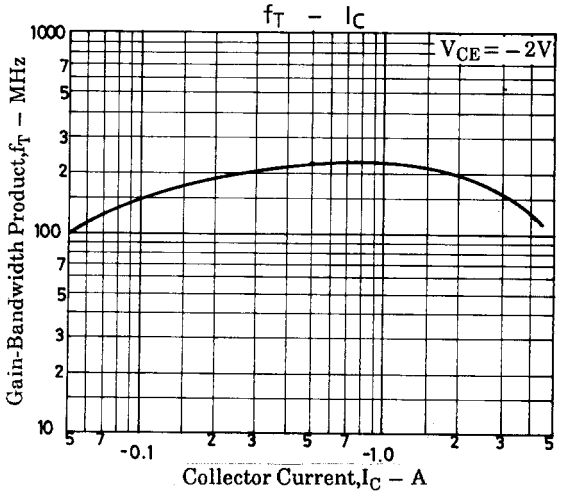


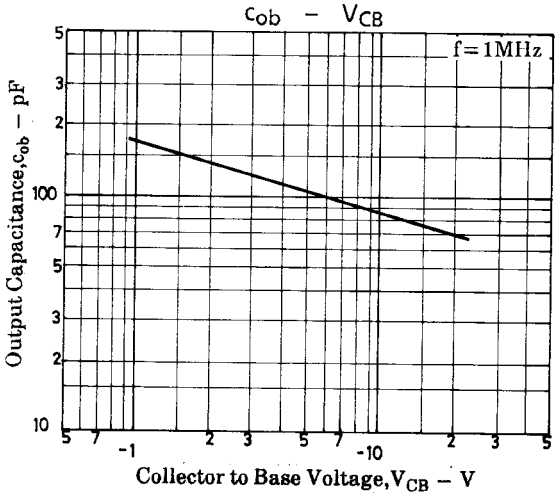
$20I_{B1}$=–$20I_{B2}$=I_C=–5A
Unit (resisitance : Ω, capacitance : F)

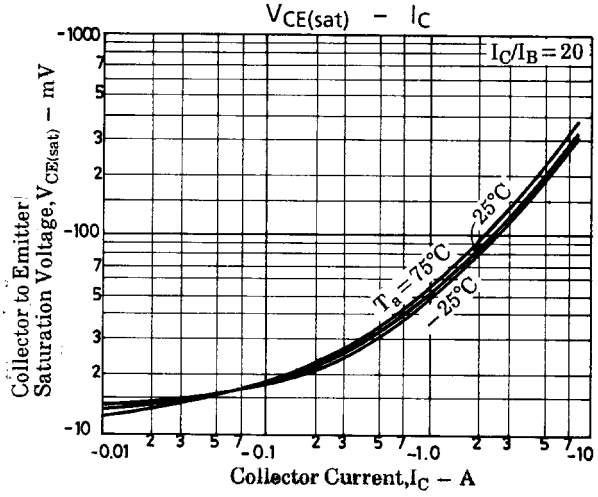

I_C – V_{CE}
–50mA
–45mA
–40mA
–35mA
–30mA
–25mA
–20mA
–15mA
–10mA
–5mA
I_B=0
Collector Current,I_C – A
Collector to Emitter Voltage,V_{CE} – V


I_C – V_{BE}
V_{CE}=–2V
T_a=75°C
25°C
–25°C
Collector Current,I_C – A
Base to Emitter Voltage,V_{BE} – V


h_{FE} – I_C
V_{CE}=–2V
T_a=75°C
25°C
–25°C
DC Current Gain,h_{FE}
Collector Current,I_C – A


f_T – I_C
V_{CE}=–2V
Gain-Bandwidth Product,f_T – MHz
Collector Current,I_C – A


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


$V_{CE(sat)}$ – I_C
I_C/I_B=20
T_a=75°C
25°C
–25°C
Collector to Emitter Saturation Voltage,$V_{CE(sat)}$ – mV
Collector Current,I_C – A