Ordering number:ENN3136

PNP Epitaxial Planar Silicon Transistor

2SA1732

High-Speed Switching Applications

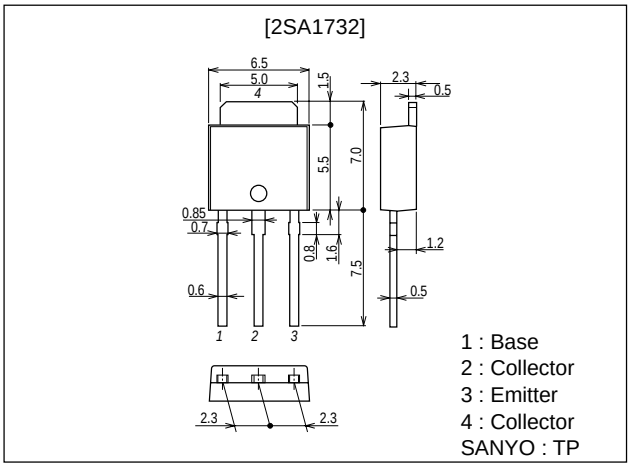
Features

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

Package Dimensions

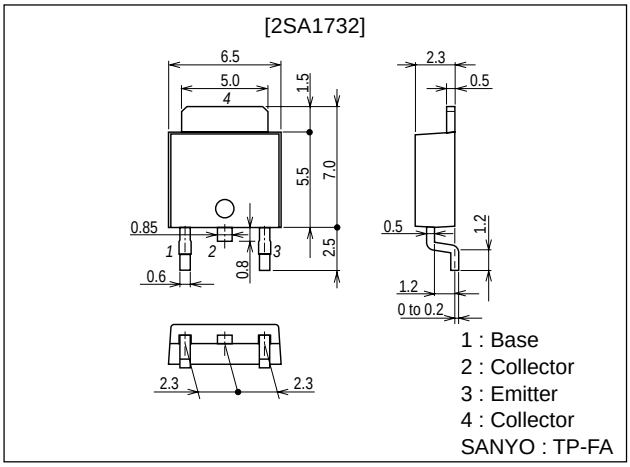
unit:mm

2045B



unit:mm

2044B



SANYO Electric Co.,Ltd. Semiconductor Company

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}		–50	V
Collector-to-Emitter Voltage	V_{CEO}		–40	V
Emitter-to-Base Voltage	V_{EBO}		–5	V
Collector Current	I_C		–8	A
Collector Current (Pulse)	I_{CP}		–12	A
Collector Dissipation	P_C		1	W
		Tc=25˚C	15	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

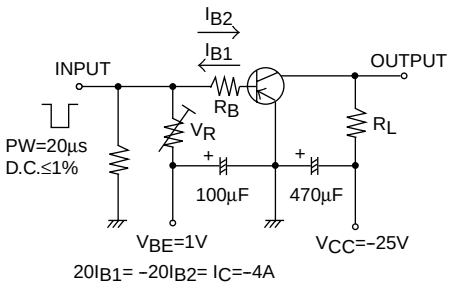
Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=–40V, I_E=0			–1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–3V, I_C=0			–1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=–2V, I_C=–500mA	70*		280*	
	$h_{FE}2$	V_{CE}=–2V, I_C=–8A	25			
Gain-Bandwidth Product	f_T	V_{CE}=–2V, I_C=–500mA		250		MHz
Output Capacitance	C_{ob}	V_{CB}=–10V, f=1MHz		100		pF
Collector-to-Emitter Saturatin Voltage	$V_{CE(sat)}$	I_C=–4A, I_B=–200mA		–0.3	–0.8	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=–4A, I_B=–200mA		–0.95	–1.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–100μA, I_E=0	–50			V
Collector-to-Emitter Saturation Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	–40			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=–100μA, I_C=0	–5			V
Turn-ON Time	t_{on}	See specified Test Circuit		50	100	ns
Storage Time	t_{stg}	See specified Test Circuit		120	220	ns
Turn-OFF Time	t_{off}	See specified Test Circuit		150	300	ns

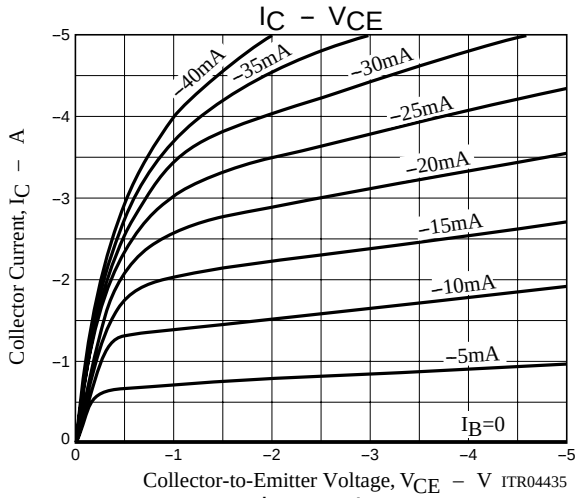
* : The 2SA1732 is classified by 500mA h_{FE} as follows :

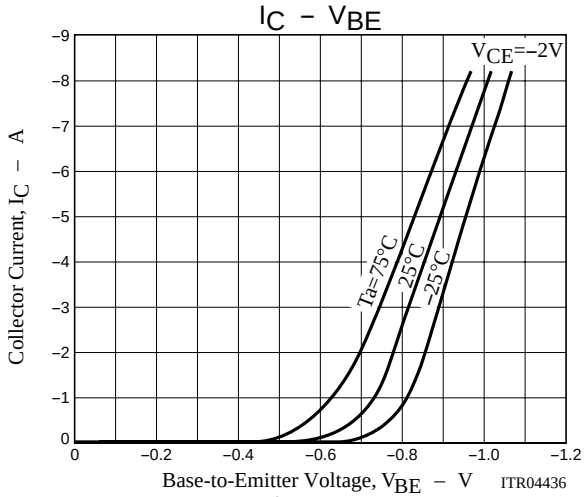
Rank	Q	R	S
h_{FE}	70 to 140	100 to 200	140 to 280

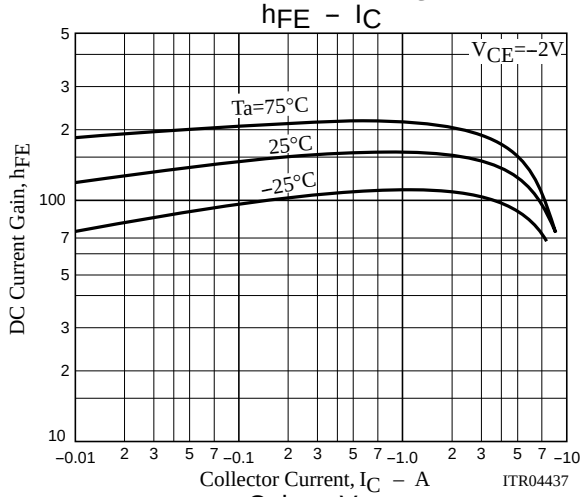
Switching Time Test Circuit

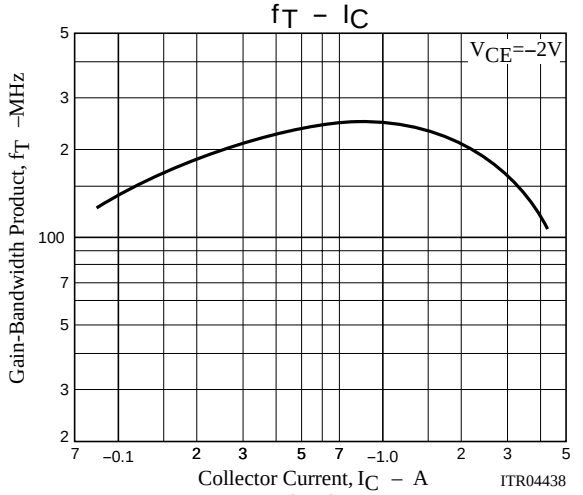


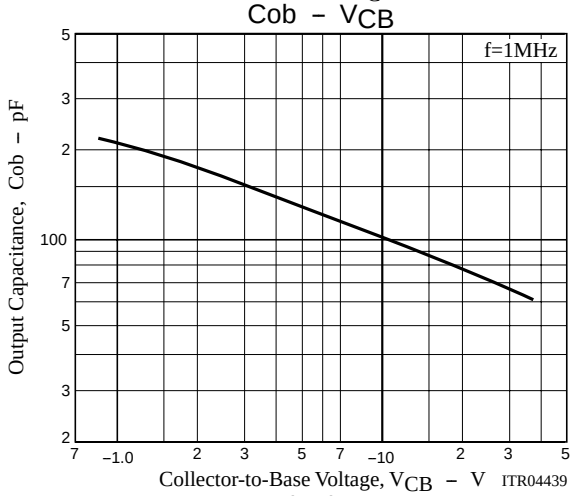
$20I_{B1}$= –$20I_{B2}$= I_C=–4A

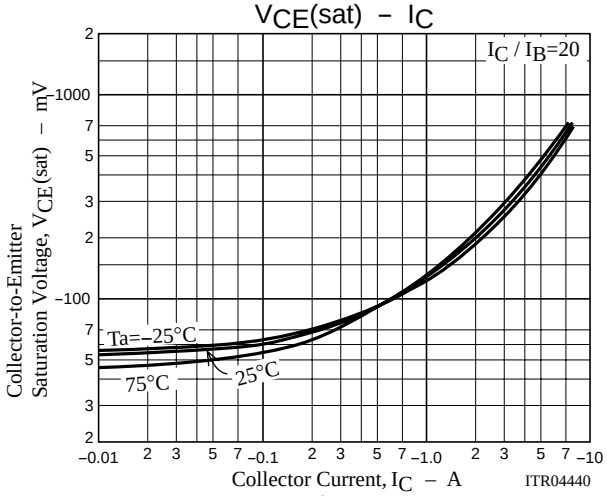

IC – VCE
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
ITR04435
–40mA
–35mA
–30mA
–25mA
–20mA
–15mA
–10mA
–5mA
IB=0

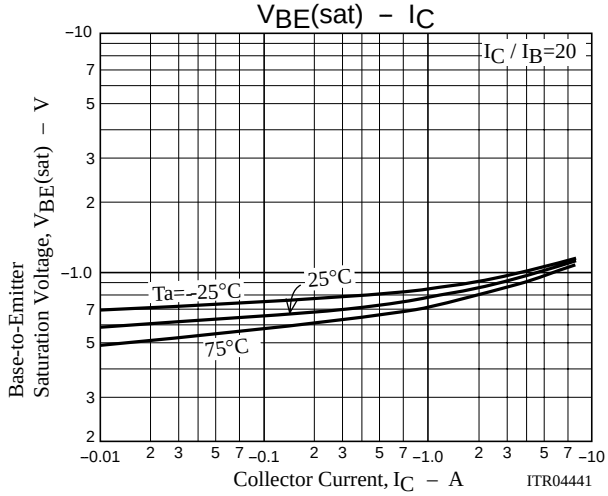

IC – VBE
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
ITR04436
VCE=–2V
Ta=75°C
25°C
–25°C

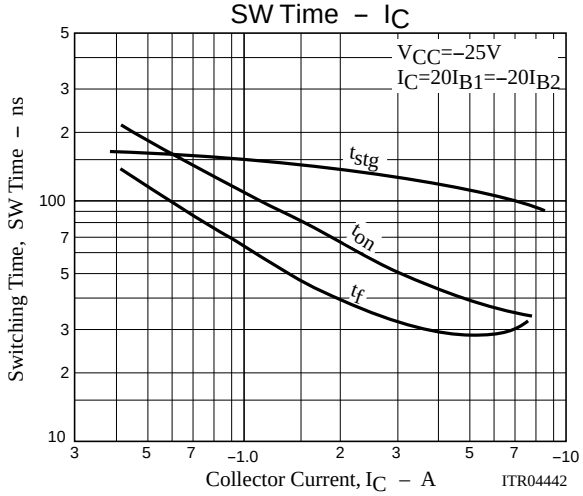

hFE – IC
DC Current Gain, hFE
Collector Current, IC – A
ITR04437
VCE=–2V
Ta=75°C
25°C
–25°C


fT – IC
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
ITR04438
VCE=–2V


Cob – VCB
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
ITR04439
f=1MHz


VCE(sat) – IC
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – A
ITR04440
IC / IB=20
Ta=–25°C
75°C
25°C


VBE(sat) – IC
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
ITR04441
IC / IB=20
Ta=–25°C
25°C
75°C


SW Time – IC
Switching Time, SW Time – ns
Collector Current, IC – A
ITR04442
VCC=–25V
IC=20IB1=–20IB2
tstg
ton
tf