Ordering number:EN4135

PNP/NPN Epitaxial Planar Silicon Transistor

2SA1855/2SC4837

50V/4A Switching Applications

Applications

· Power supplies, relay drivers, lamp drivers.

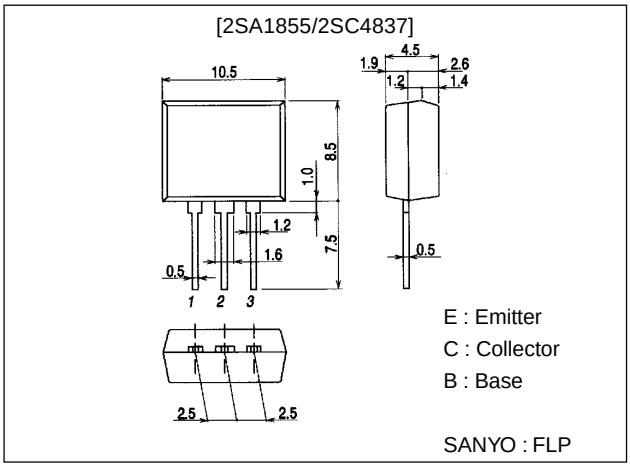
Features

· Adoption of FBET and MBIT processes.
· Large allowable collector dissipation.
· Low saturation voltage.
· Wide ASO and large current capacity.
· Usage of radial taping to meet automatic mounting.

Package Dimensions

unit:mm

2084B



( ) : 2SA1855

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)60	V
Collector-to-Emitter Voltage	V_{CEO}		(–)50	V
Emitter-to-Base Voltage	V_{EBO}		(–)6	V
Collector Current	I_C		(–)4	A
Colletor Current (Pulse)	I_{CP}		(–)6	A
Collector Dissipation	P_C		1.5	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}=(–)4V, I_C=0			(–)1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=(–)2V, I_C=(–)10mA	100*		400*	
	$h_{FE}2$	V_{CE}=(–)2V, I_C=(–)3A	40			
Gain Bandwidth Product	f_T	V_{CE}=(–)10V, I_C=(–)50mA		150		MHz
Output Capacitance	C_{ob}	V_{CB}=(–)10V, f=1MHz		(39)25		pF

* : The 2SA1855/2SC4837 are classified by 100mA h_{FE} as follows :

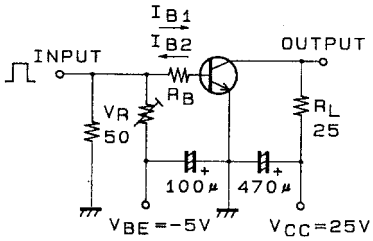
100 R 200	140 S 280	200 T 400

SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

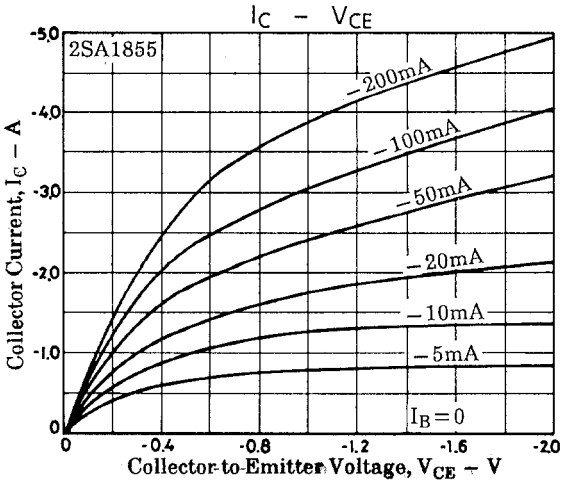
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)2A, I_B=(–)100mA		(–350)	(–700)	mV
				190	500	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)2A, I_B=(–)100mA		(–)0.94	(–)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–10μA, I_E=0	(–)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	(–)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=–10μA, I_C=0	(–)6			V
Turn-ON Time	t_{on}	See specified Test CIrcuit		70		ns
Storage Time	t_{stg}	See specified Test CIrcuit		(450)		ns
				650		ns
Fall Time	t_f	See specified Test Circuit		(30)35		ns

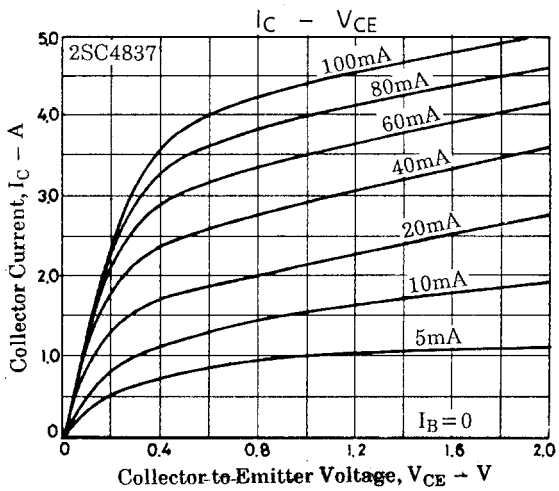
Switching Time Test Circui

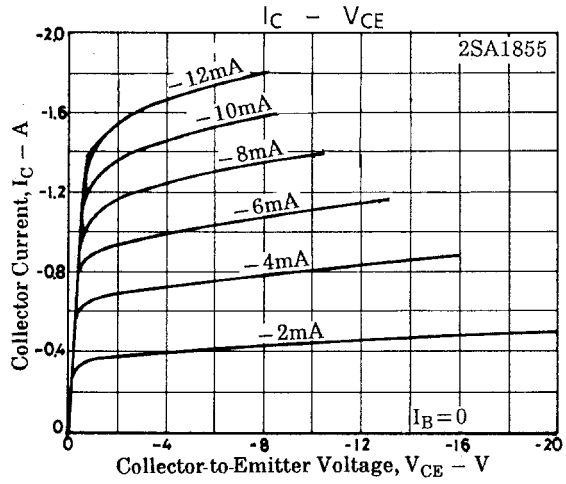
PW=20μs
DC≦1%

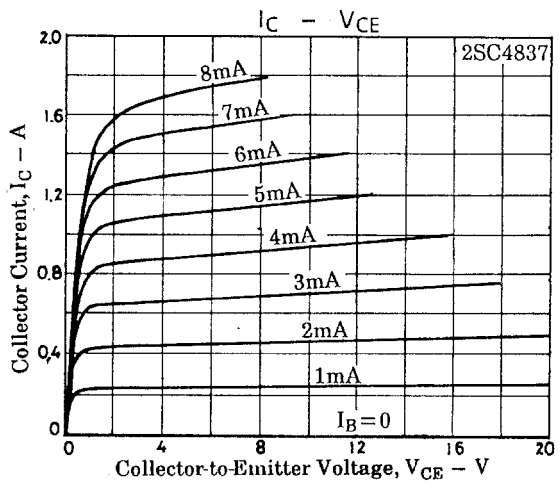


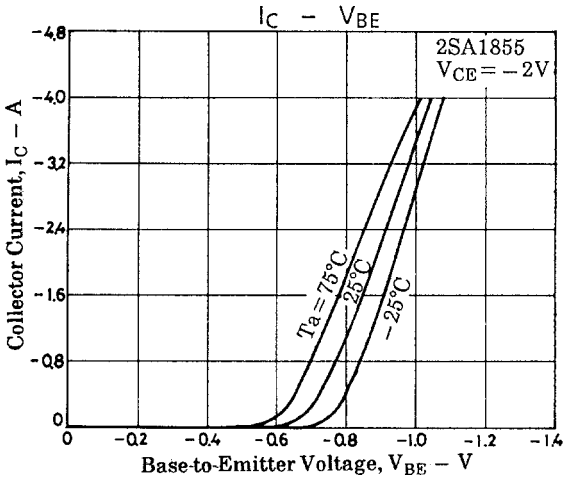
$I_C = 10I_B1 = -10I_B2 = 1A$ A00651
Unit (resistance : Ω, capacitance : F)

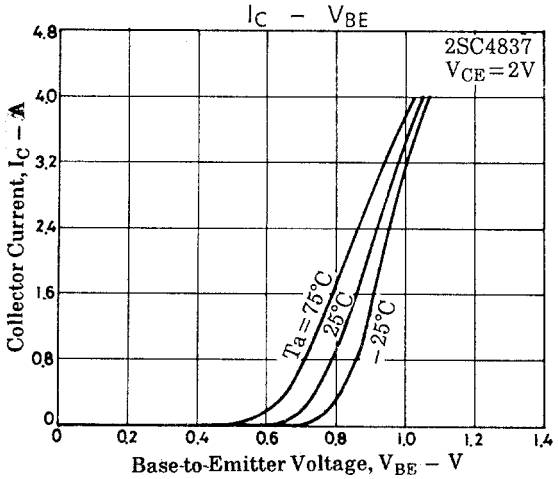


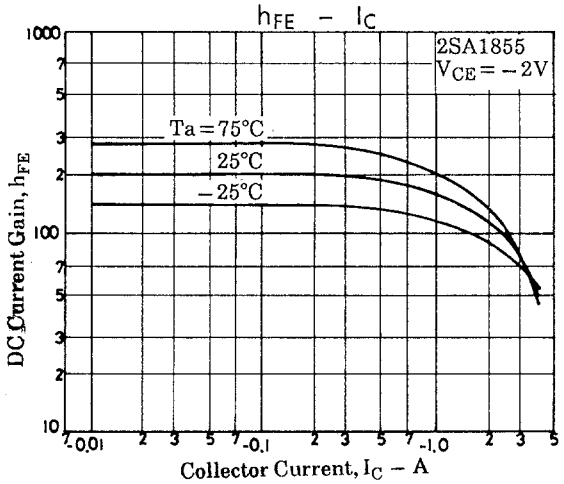


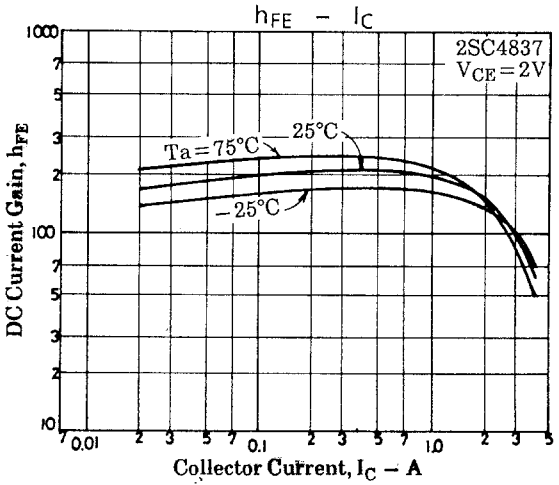


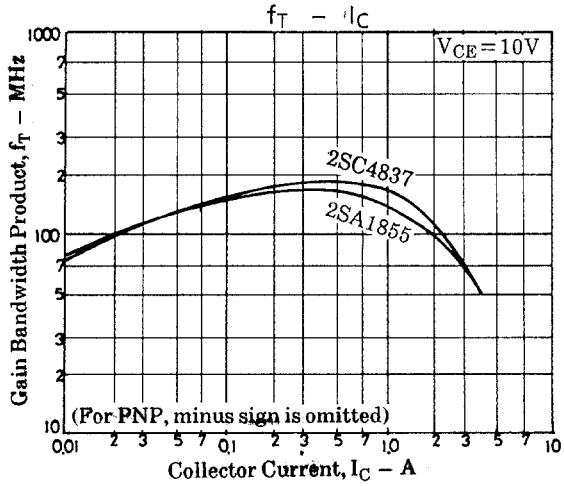


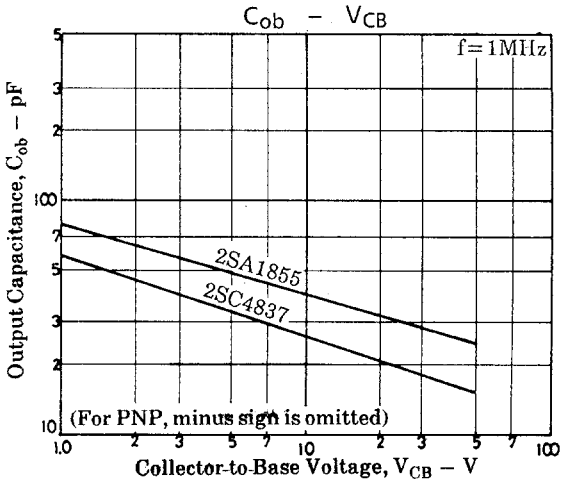

I_C – V_{BE}
2SA1855
V_{CE} = –2V
Collector Current, I_C – A
Base-to-Emitter Voltage, V_{BE} – V
Ta = 75°C
25°C
–25°C

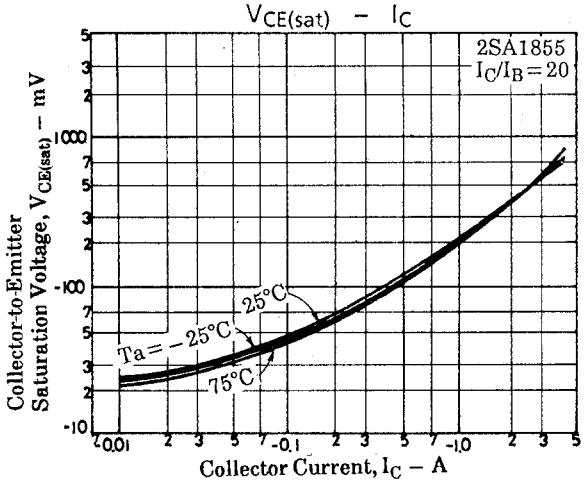

I_C – V_{BE}
2SC4837
V_{CE} = 2V
Collector Current, I_C – A
Base-to-Emitter Voltage, V_{BE} – V
Ta = 75°C
25°C
–25°C

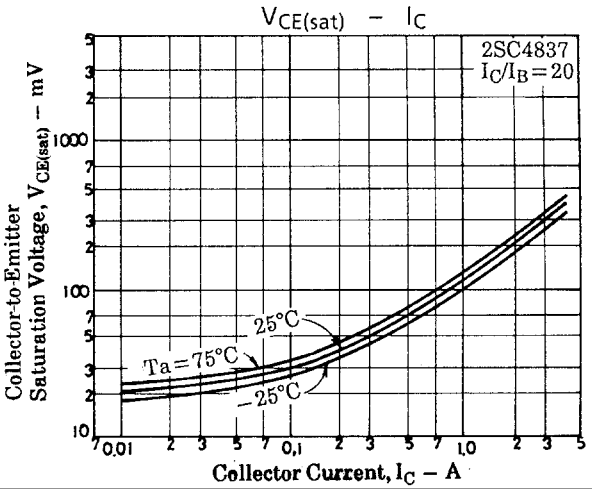

h_{FE} – I_C
2SA1855
V_{CE} = –2V
DC Current Gain, h_{FE}
Collector Current, I_C – A
Ta = 75°C
25°C
–25°C


h_{FE} – I_C
2SC4837
V_{CE} = 2V
DC Current Gain, h_{FE}
Collector Current, I_C – A
Ta = 75°C
25°C
–25°C


f_T – I_C
V_{CE} = 10V
Gain Bandwidth Product, f_T – MHz
Collector Current, I_C – A
2SC4837
2SA1855
(For PNP, minus sign is omitted)


C_{ob} – V_{CB}
f = 1MHz
Output Capacitance, C_{ob} – pF
Collector-to-Base Voltage, V_{CB} – V
2SA1855
2SC4837
(For PNP, minus sign is omitted)


$V_{CE(sat)}$ – I_C
2SA1855
I_C/I_B = 20
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$ – mV
Collector Current, I_C – A
Ta = –25°C
25°C
75°C


$V_{CE(sat)}$ – I_C
2SC4837
I_C/I_B = 20
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$ – mV
Collector Current, I_C – A
Ta = 75°C
25°C
–25°C