Ordering number:ENN4135

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1855/2SC4837

50V/4A Switching Applications

An ON Semiconductor Company

Applications

· Power supplies, relay drivers, lamp drivers.

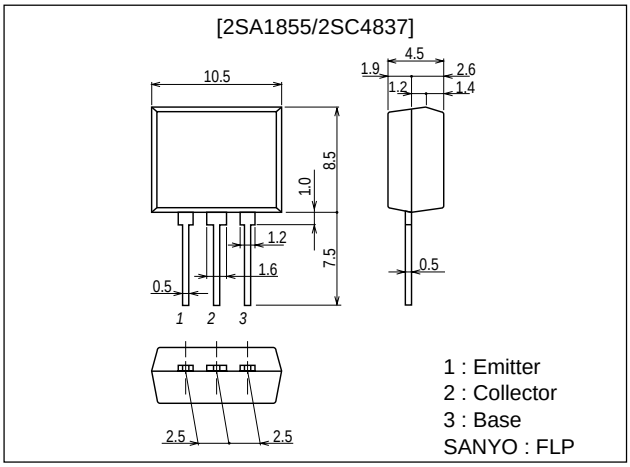
Features

· 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 :

Continued on next page.

Rank	R	S	T
h_{FE}	100 to 200	140 to 280	200 to 400

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

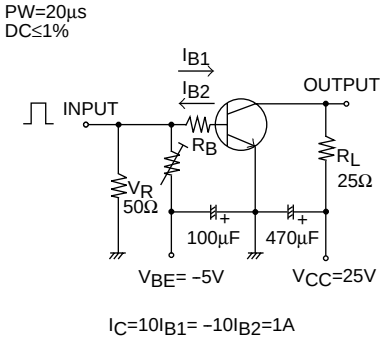
■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges,or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

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

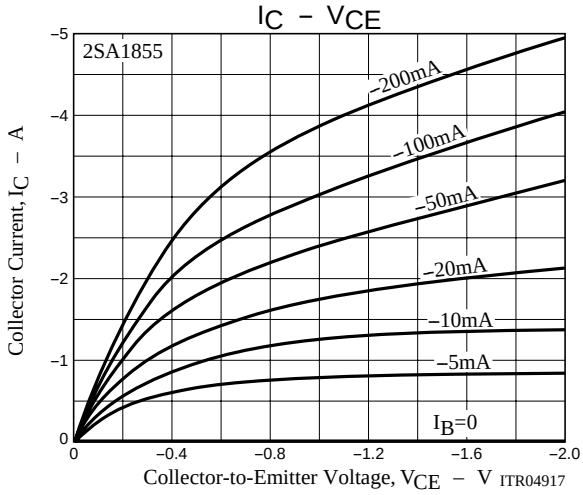
Continued from preceding page.

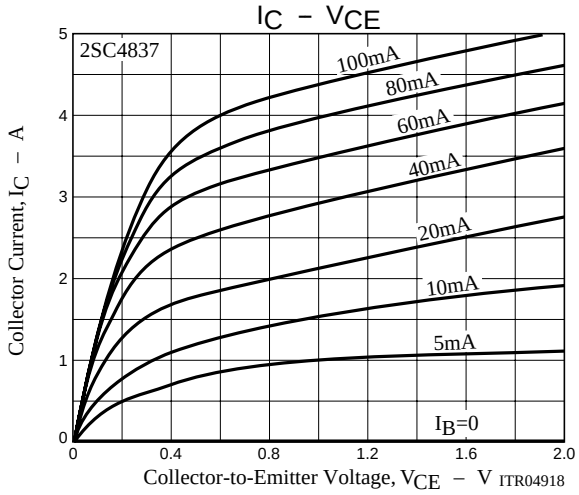
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)2A, I_B=(–)100mA		(–350)	(–700)	mV
				190	500	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)2A, I_B=(–)100mA		(–)0.94	(–)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	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

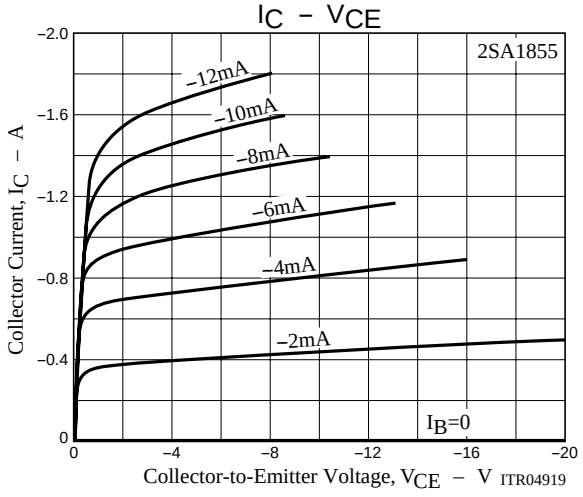
Switching Time Test Circuit

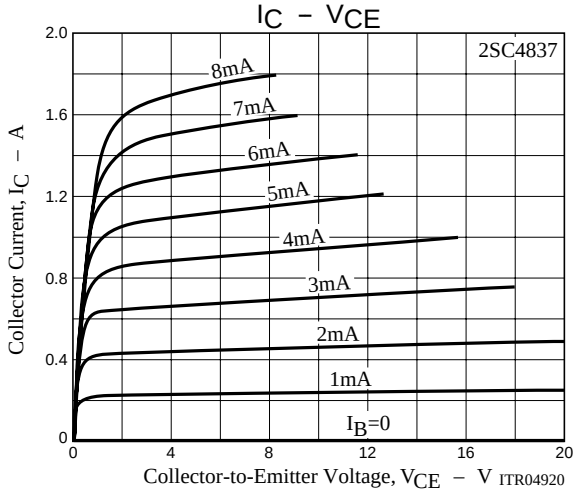


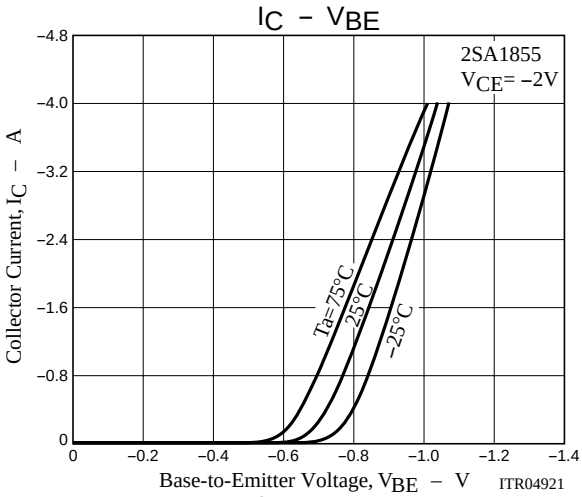
I_C=10I_{B1}= –10I_{B2}=1A

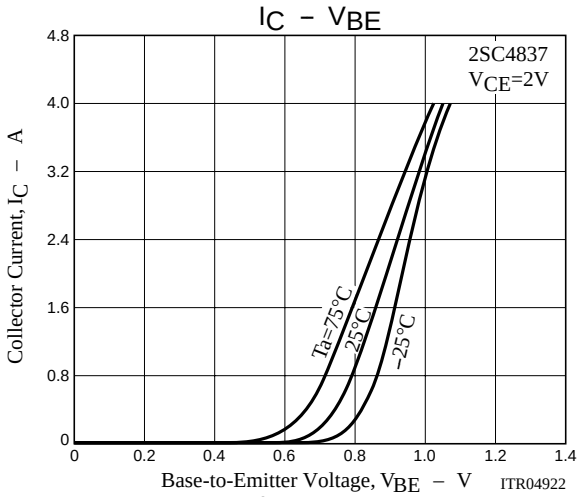


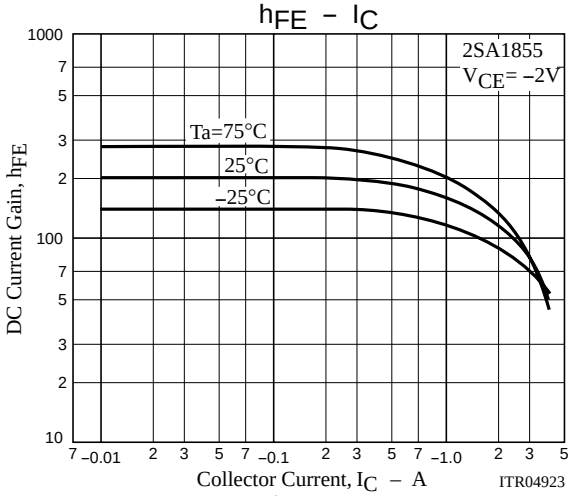


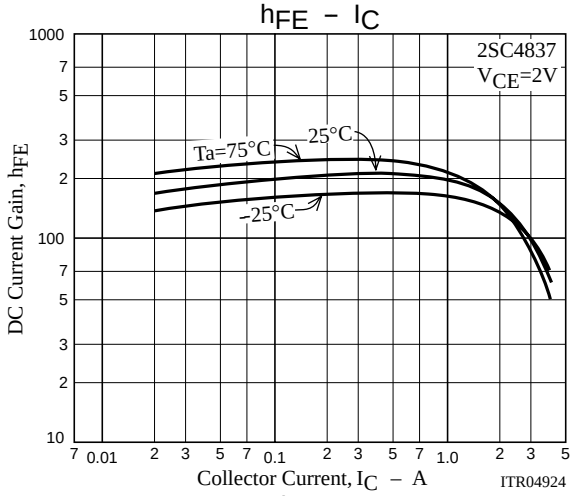


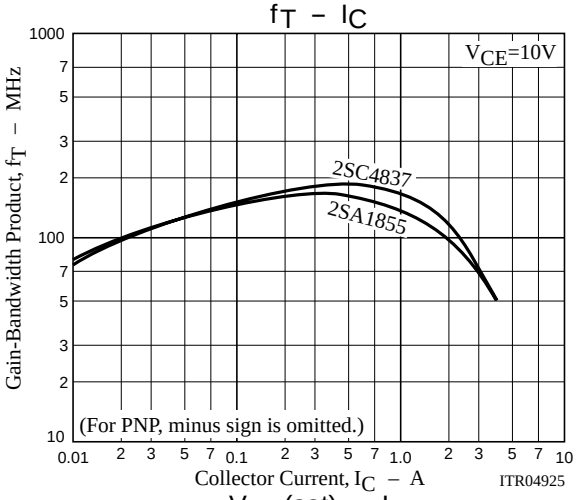


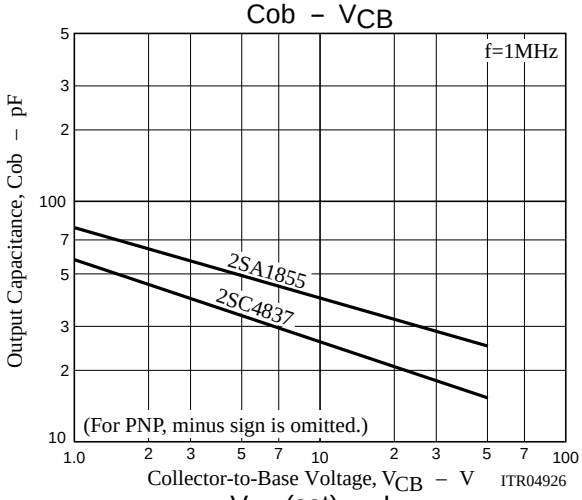

IC – VBE
2SA1855
VCE= –2V
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
Ta=75°C
25°C
–25°C
ITR04921

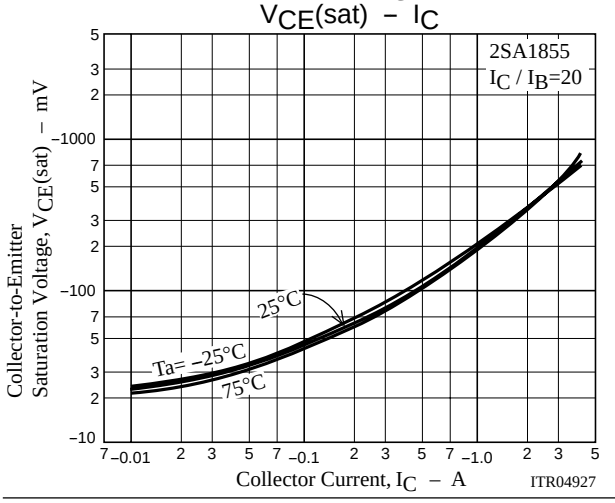

IC – VBE
2SC4837
VCE=2V
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
Ta=75°C
25°C
–25°C
ITR04922

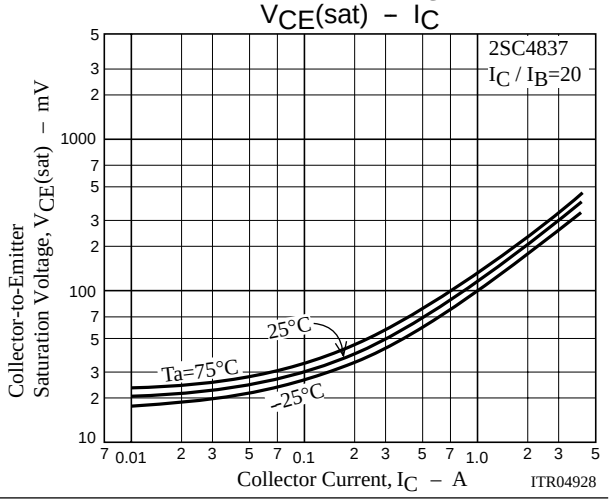

hFE – IC
2SA1855
VCE= –2V
DC Current Gain, hFE
Collector Current, IC – A
Ta=75°C
25°C
–25°C
ITR04923

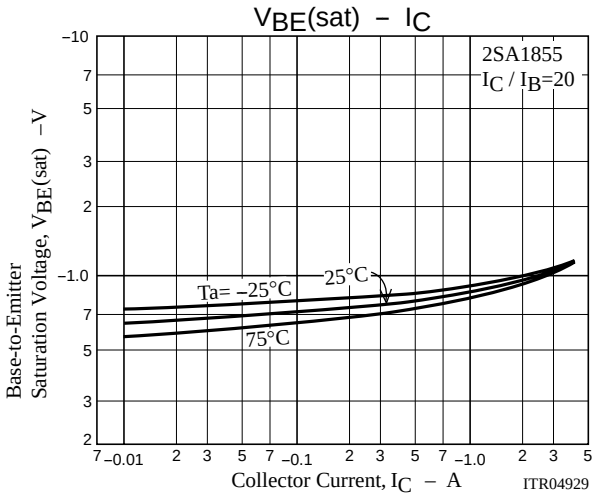

hFE – IC
2SC4837
VCE=2V
DC Current Gain, hFE
Collector Current, IC – A
Ta=75°C
25°C
–25°C
ITR04924

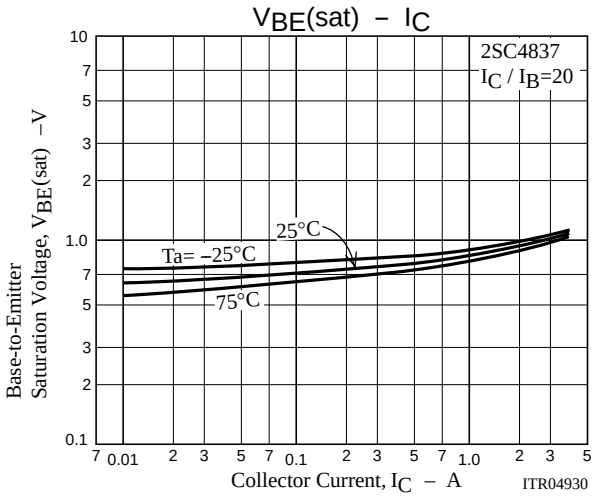

fT – IC
VCE=10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
2SC4837
2SA1855
(For PNP, minus sign is omitted.)
ITR04925

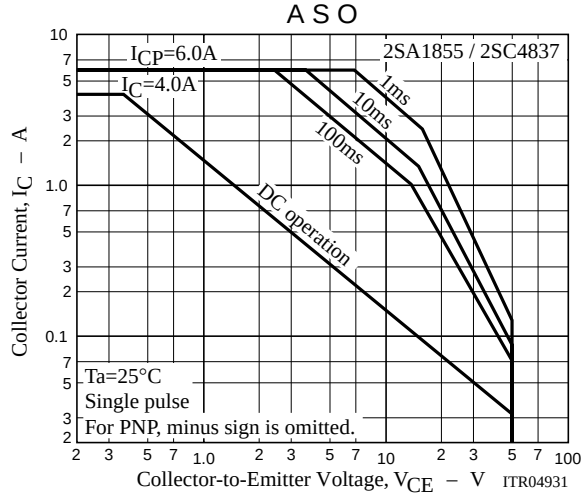

Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
2SA1855
2SC4837
(For PNP, minus sign is omitted.)
ITR04926

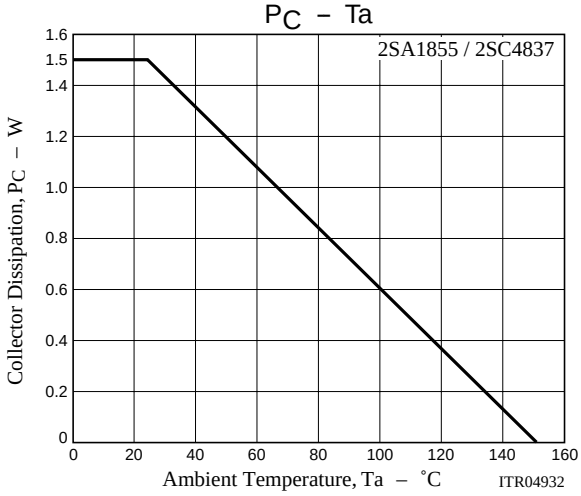

VCE(sat) – IC
2SA1855
IC / IB=20
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – A
25°C
Ta= –25°C
75°C
ITR04927


VCE(sat) – IC
2SC4837
IC / IB=20
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – A
25°C
Ta=75°C
–25°C
ITR04928









- Specifications of any and all SANYO products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- SANYO Electric Co., Ltd. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all SANYO products(including technical data,services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of SANYO Electric Co., Ltd.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the SANYO product that you intend to use.
- 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.

This catalog provides information as of September, 2003. Specifications and information herein are subject to change without notice.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ON Semiconductor:

2SC4837S-AY