

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.

( ) : 2SA1855

### Specifications

#### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		(-)60	V
Collector-to-Emitter Voltage	V <sub>CE0</sub>		(-)50	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		(-)6	V
Collector Current	I <sub>C</sub>		(-)4	A
Collector Current (Pulse)	I <sub>CP</sub>		(-)6	A
Collector Dissipation	P <sub>C</sub>		1.5	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

#### Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =(-)40V, I <sub>E</sub> =0			(-)1	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0			(-)1	μA
DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)10mA	100*		400*	
	h <sub>FE2</sub>	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)3A	40			
Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =(-)10V, I <sub>C</sub> =(-)50mA		150		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =(-)10V, f=1MHz		(39)25		pF

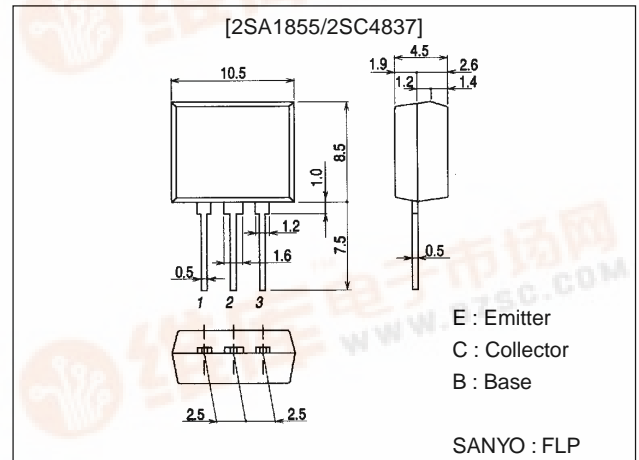
\* : The 2SA1855/2SC4837 are classified by 100mA h<sub>FE</sub> as follows :

100 R	200	140 S	280	200 T	400
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### Package Dimensions

unit:mm

2084B



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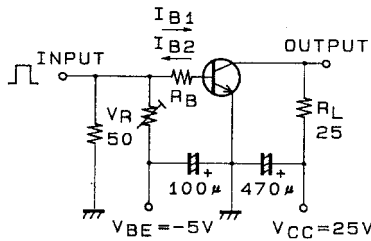


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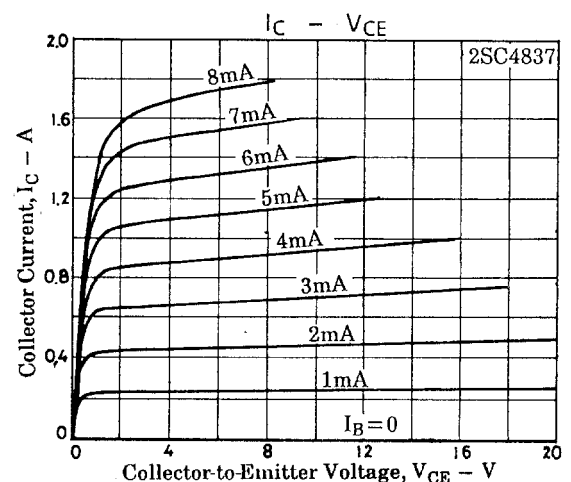
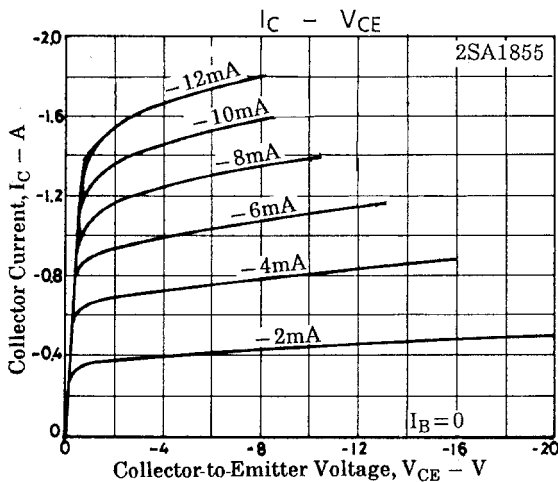
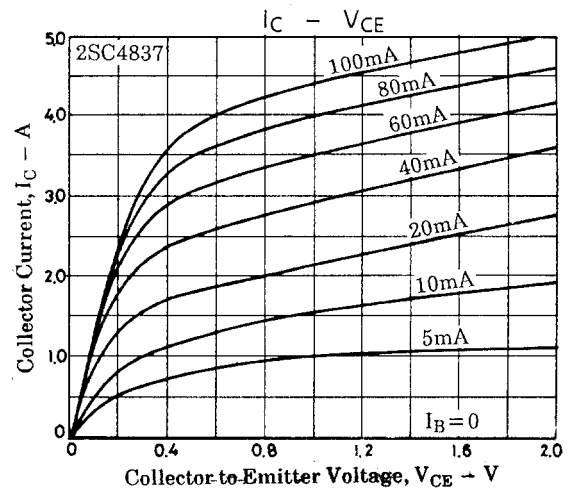
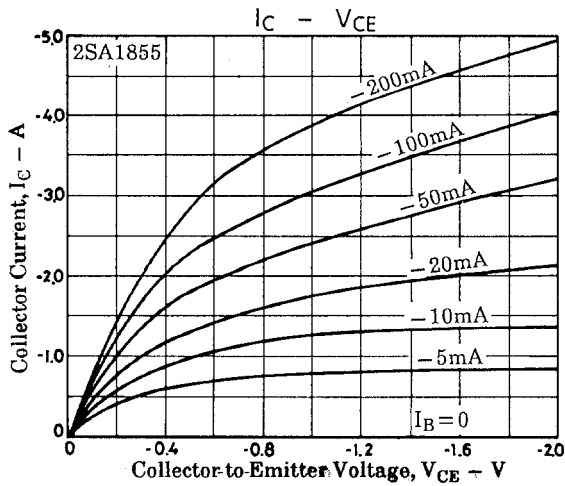
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)2A, I_B=(-)100mA$		(-350)	(-700)	mV
				190	500	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)2A, I_B=(-)100mA$		(-0.94)	(-1.2)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	(-60)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	(-50)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	(-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

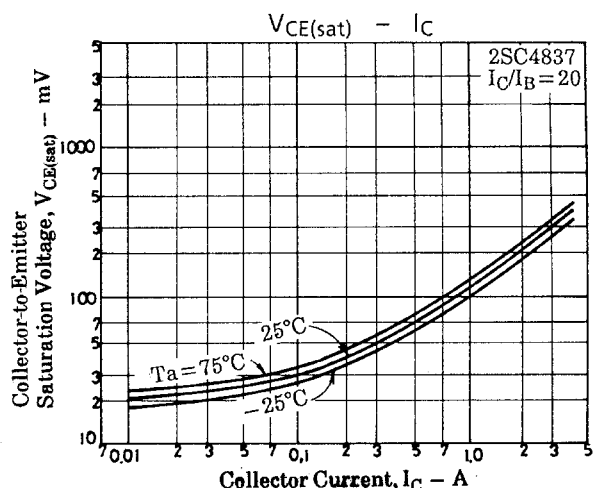
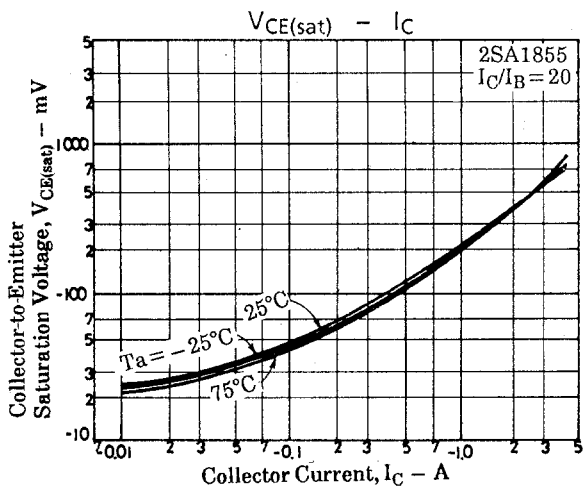
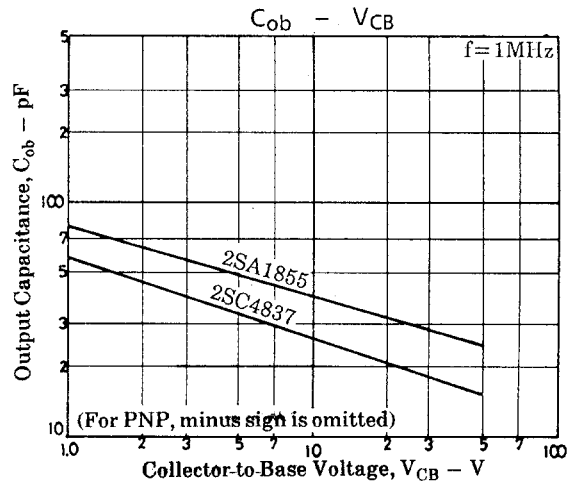
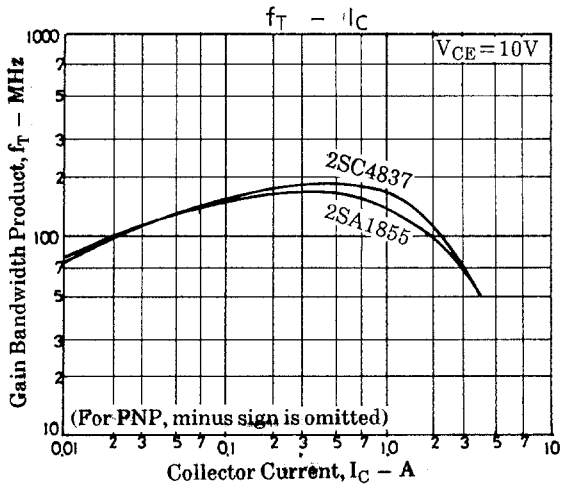
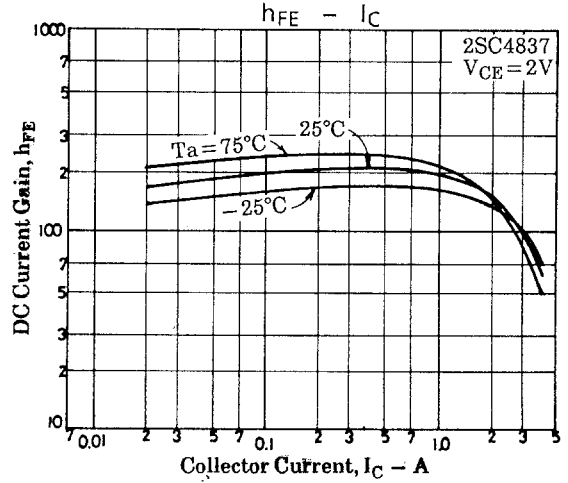
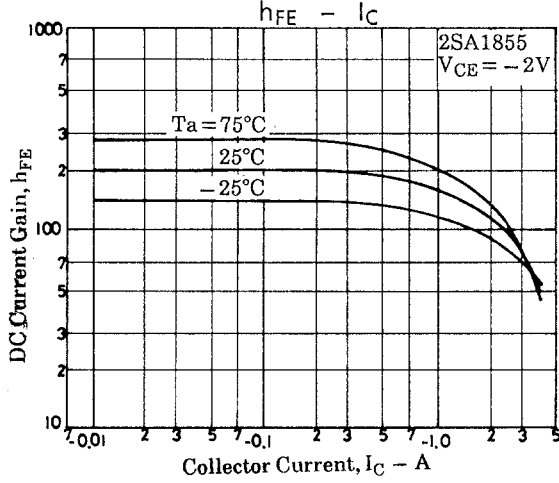
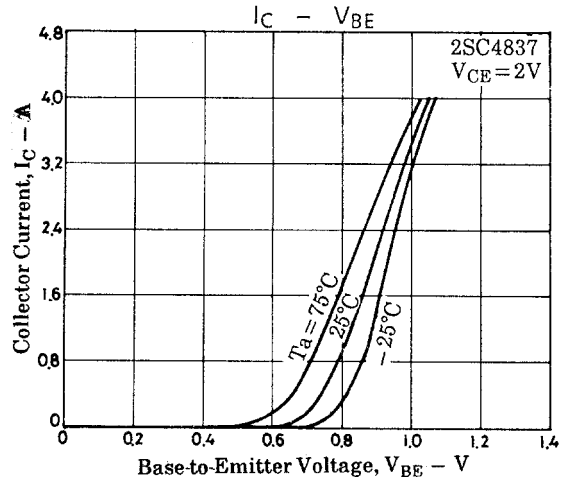
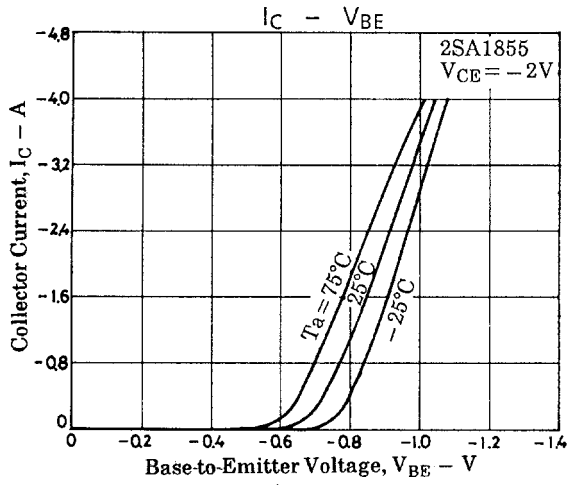
PW = 20  $\mu$ s  
DC  $\leq$  1%



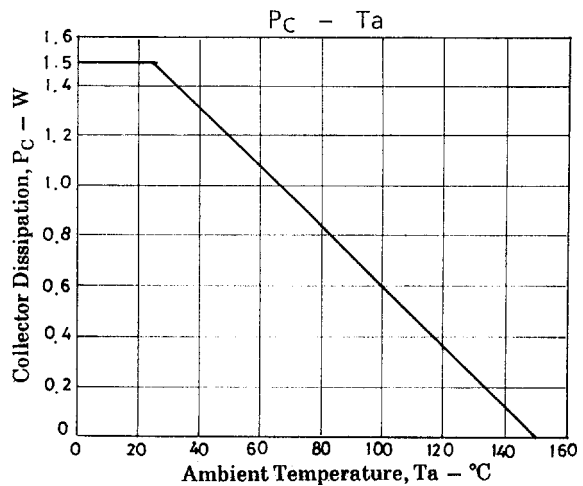
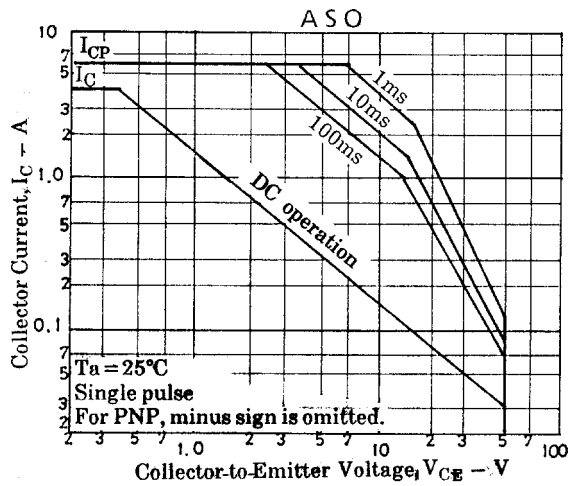
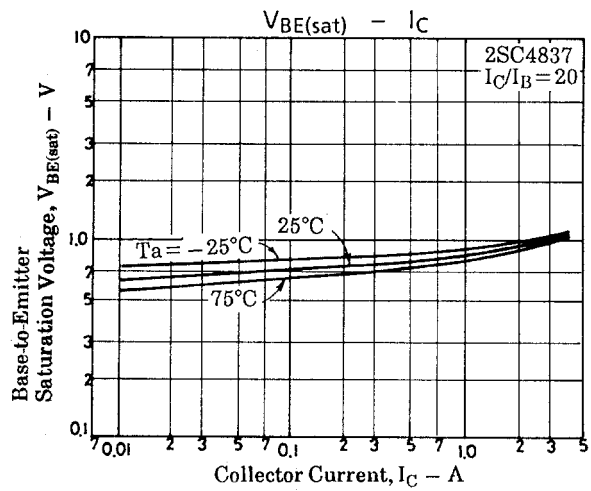
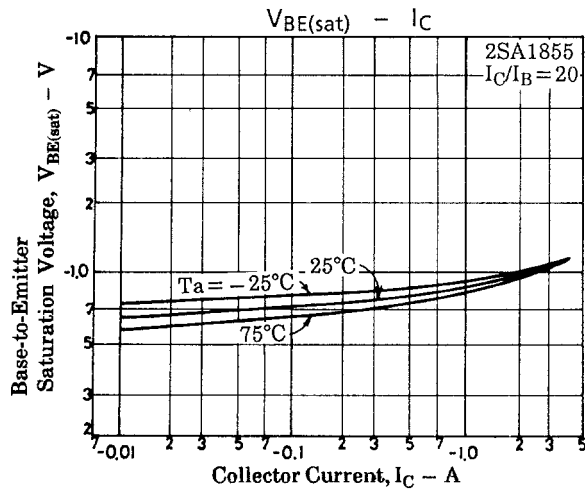
$I_C = 10I_{B1} = -10I_{B2} = 1A$  A00651  
Unit (resistance :  $\Omega$ , capacitance : F)



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