



## 2SA1855/2SC4837

### 50V/4A Switching Applications

#### Applications

- Power supplies, relay drivers, lamp drivers.

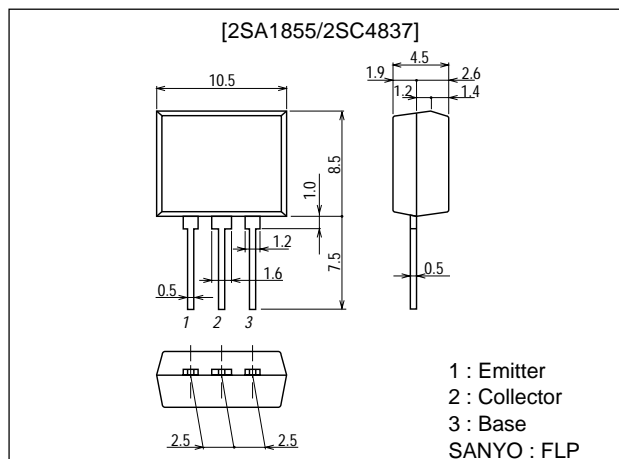
#### Features

- 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  $T_a = 25^\circ\text{C}$ 

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
Collector Current (Pulse)	$I_{CP}$		(-)6	A
Collector Dissipation	$P_C$		1.5	W
Junction Temperature	$T_J$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=(-)40\text{V}, I_E=0$			(-)1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)4\text{V}, I_C=0$			(-)1	$\mu\text{A}$
DC Current Gain	$h_{FE1}$	$V_{CE}=(-)2\text{V}, I_C=(-)10\text{mA}$	100*		400*	
	$h_{FE2}$	$V_{CE}=(-)2\text{V}, I_C=(-)3\text{A}$	40			
Gain Bandwidth Product	$f_T$	$V_{CE}=(-)10\text{V}, I_C=(-)50\text{mA}$		150		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		(39)25		pF

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

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

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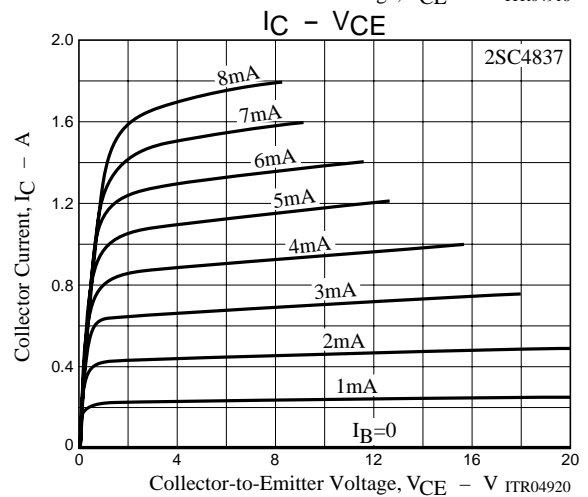
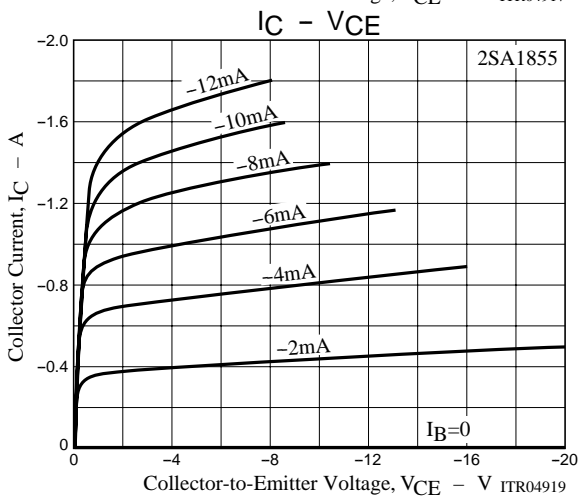
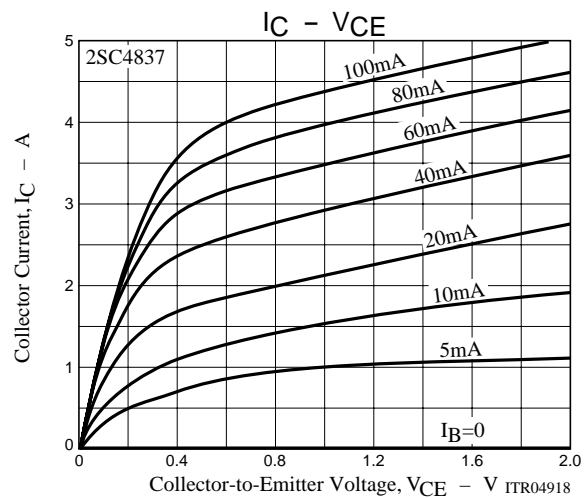
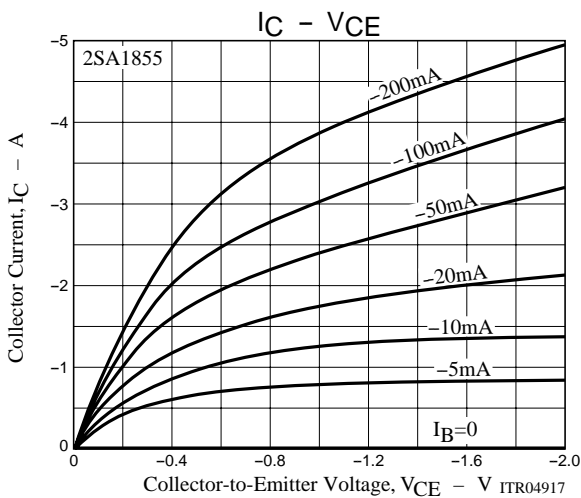
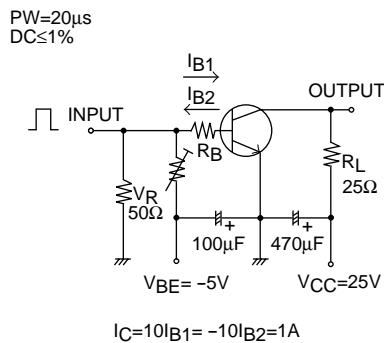
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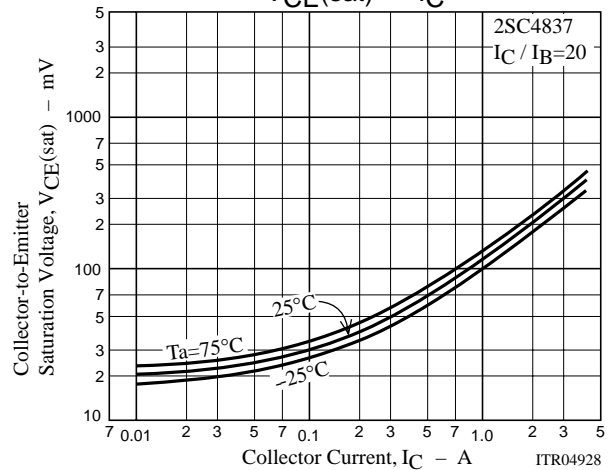
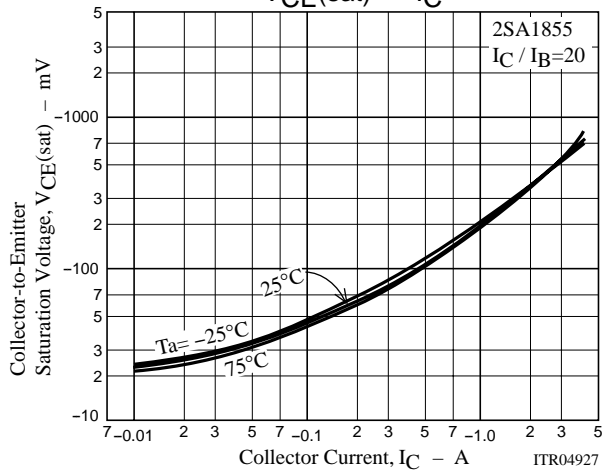
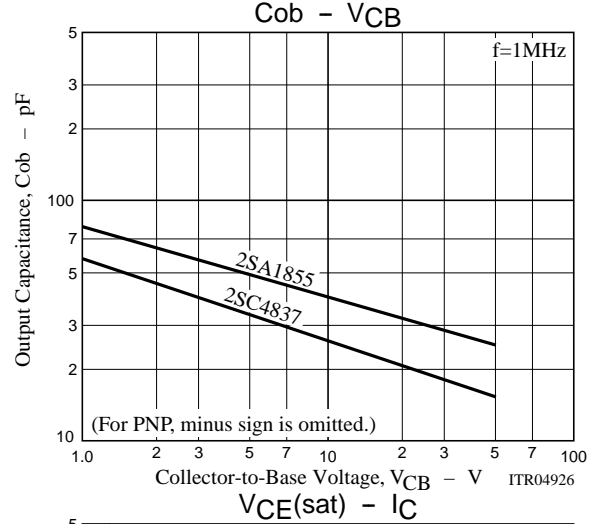
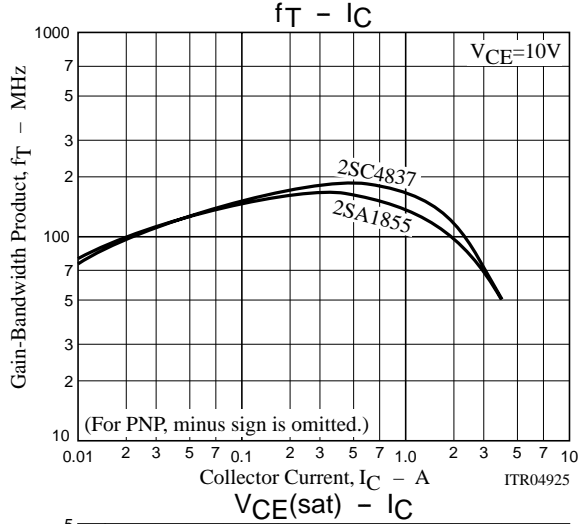
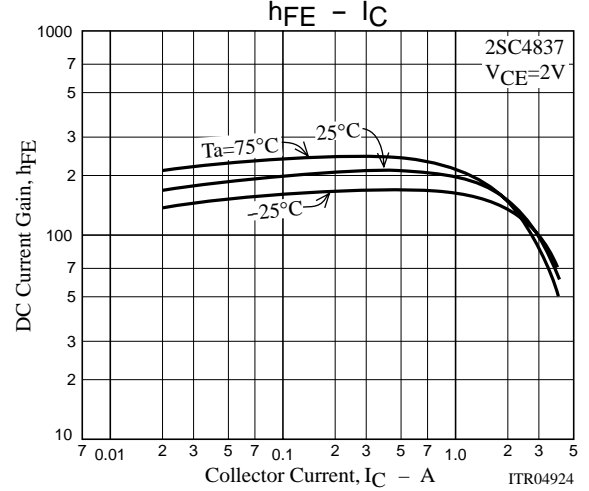
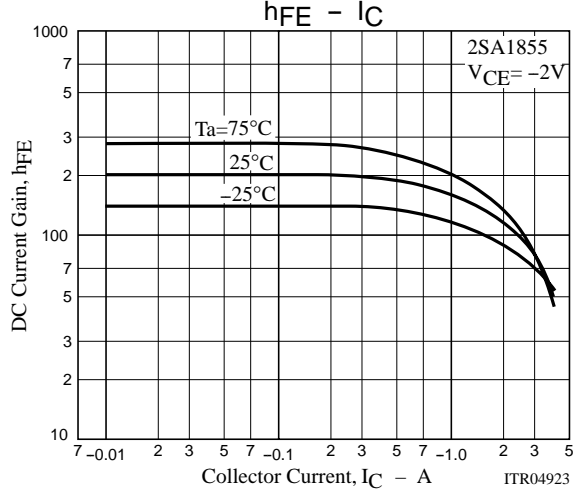
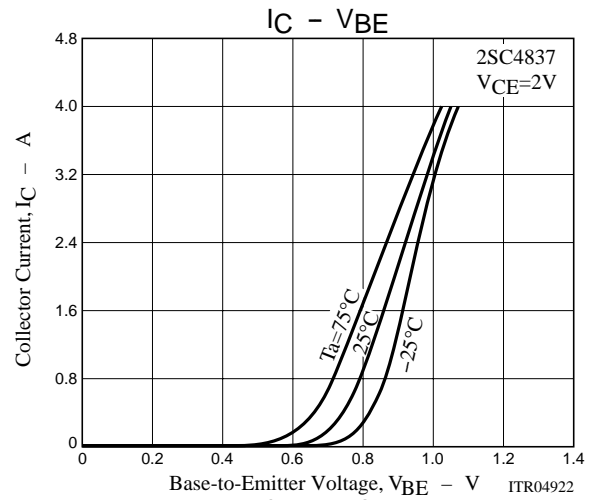
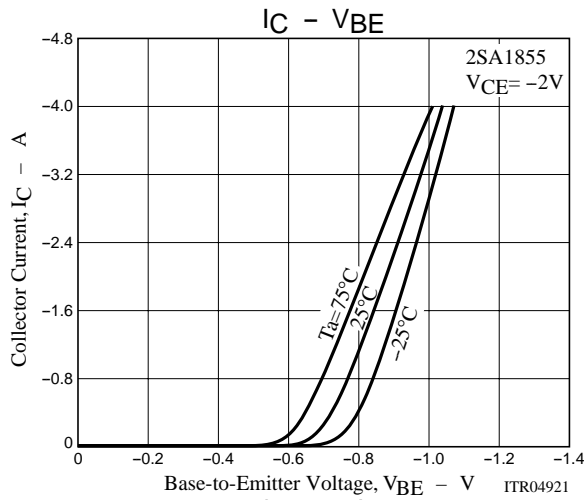
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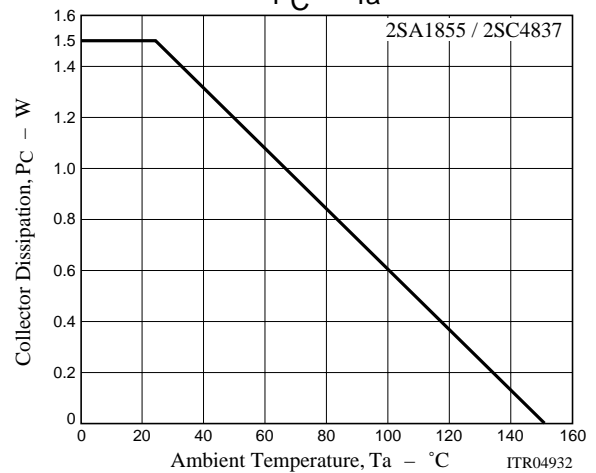
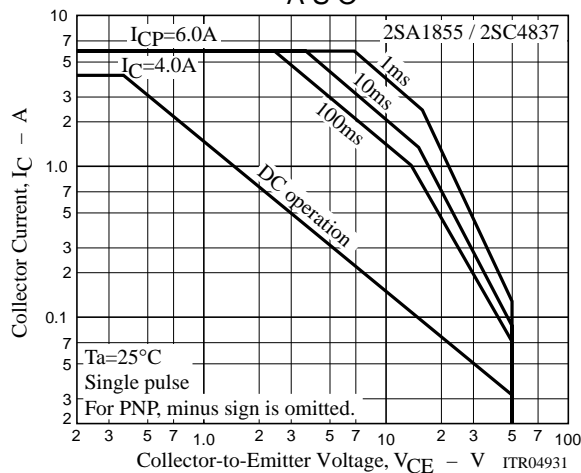
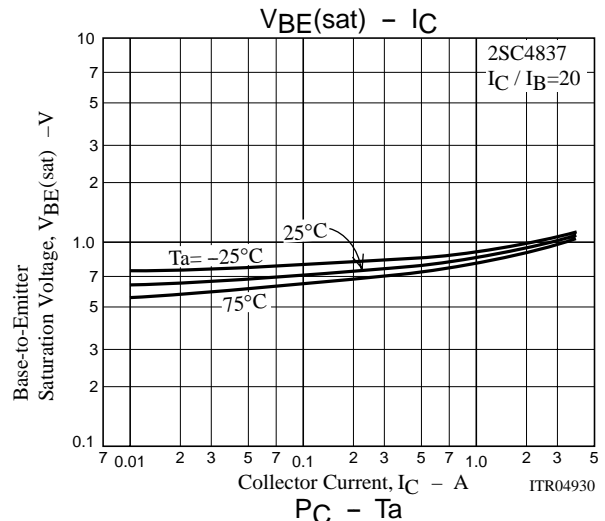
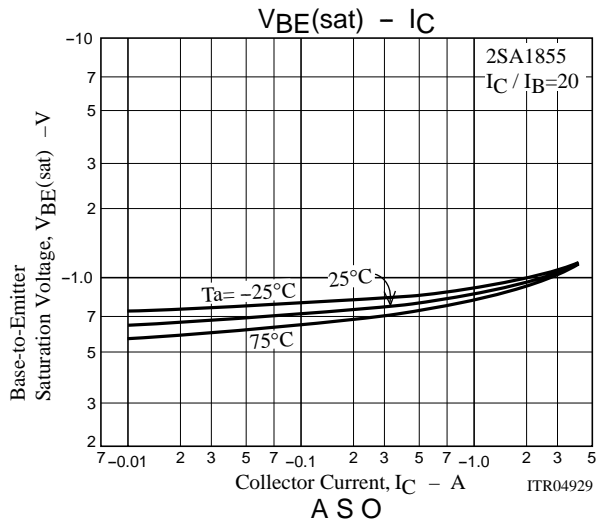
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)2A, I_B=(-)100mA$		(-350)	(-700)	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)2A, I_B=(-)100mA$		190	500	mV
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu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



2SA1855/2SC4837





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