



2SA1855/2SC4837

50V/4A Switching Applications

An ON Semiconductor Company

Applications

- Power supplies, relay drivers, lamp drivers.

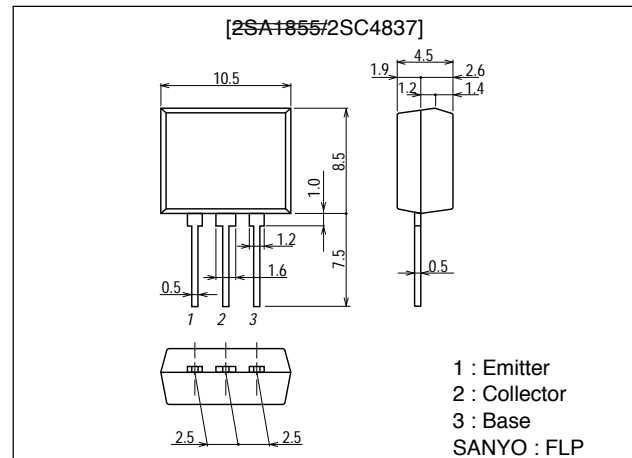
Features

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

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}	$V_{CB} = \approx 40\text{V}, I_E = 0$			≈ 1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = \approx 4\text{V}, I_C = 0$			≈ 1	μA
DC Current Gain	h_{FE1}	$V_{CE} = \approx 2\text{V}, I_C = \approx 10\text{mA}$	100*		400*	
	h_{FE2}	$V_{CE} = \approx 2\text{V}, I_C = \approx 3\text{A}$	40			
Gain Bandwidth Product	f_T	$V_{CE} = \approx 10\text{V}, I_C = \approx 50\text{mA}$		150		MHz
Output Capacitance	C_{ob}	$V_{CB} = \approx 10\text{V}, f = 1\text{MHz}$		≈ 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

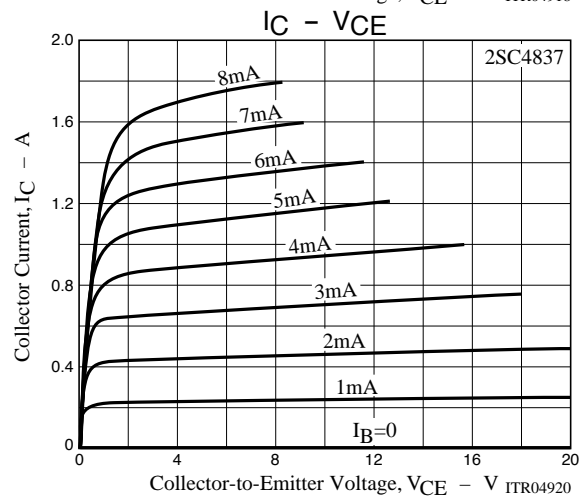
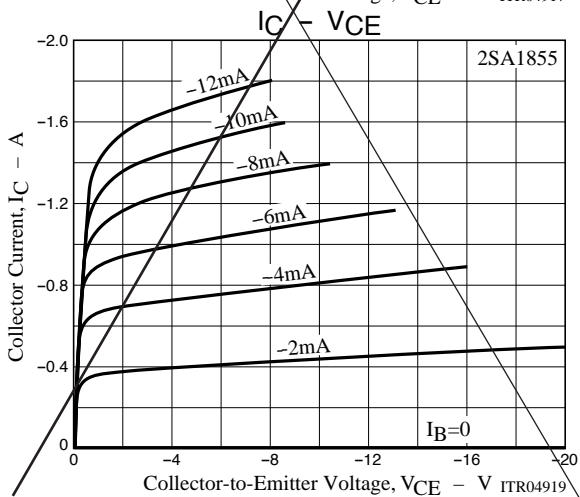
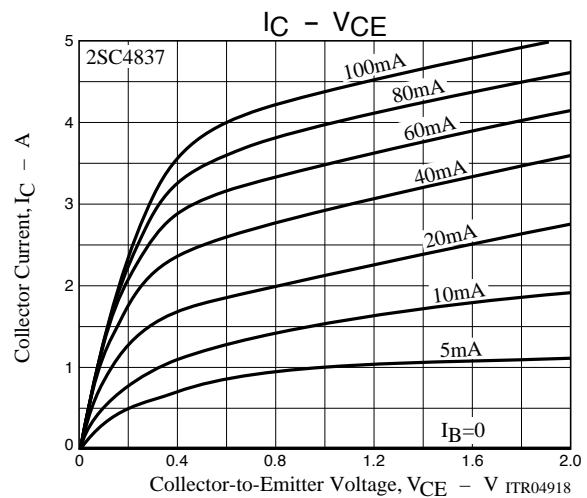
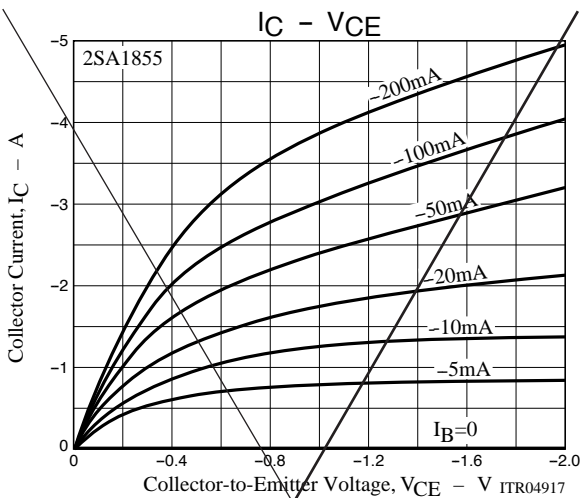
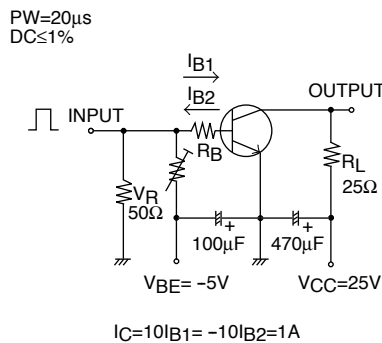
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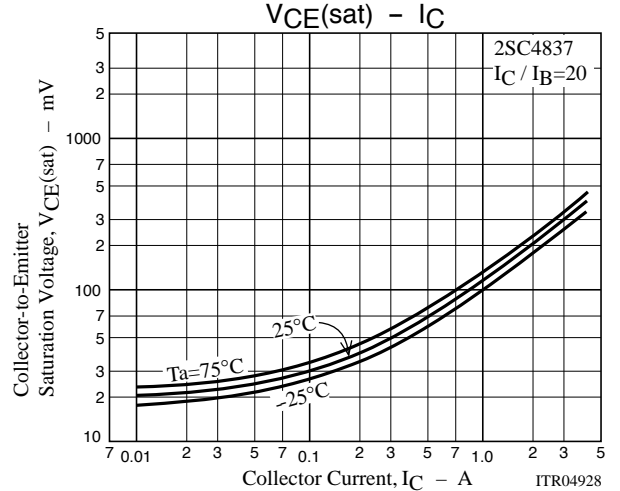
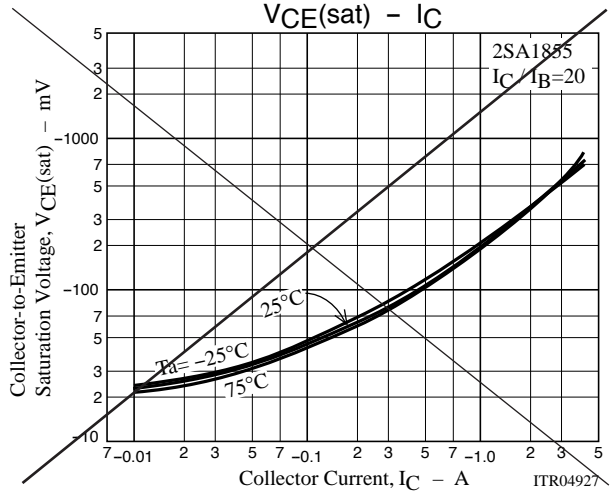
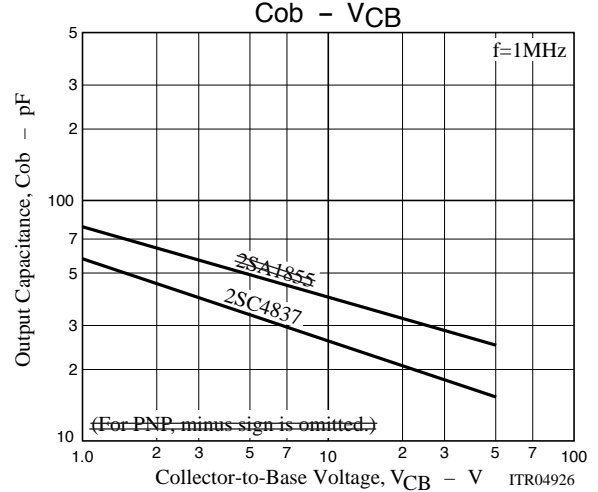
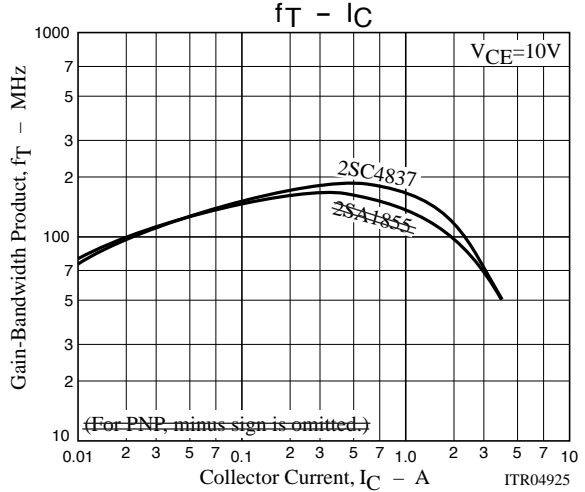
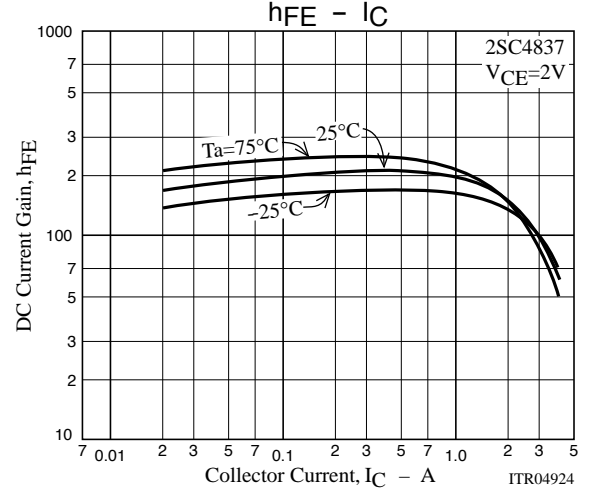
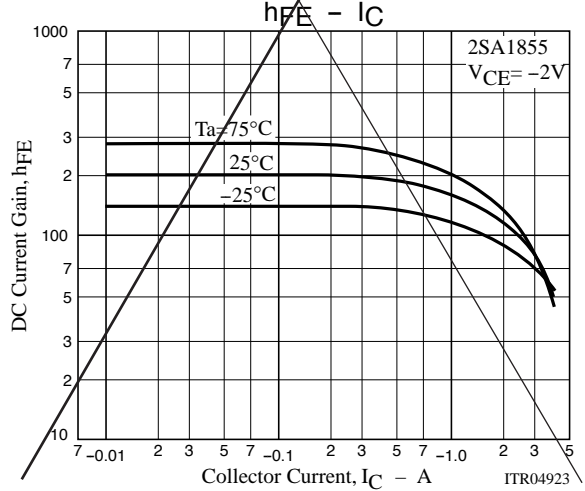
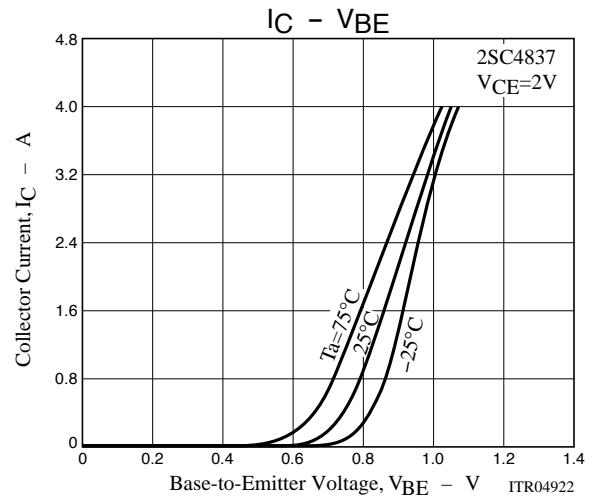
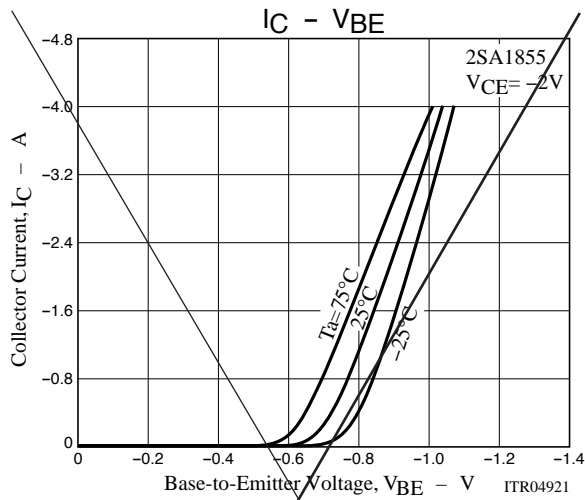
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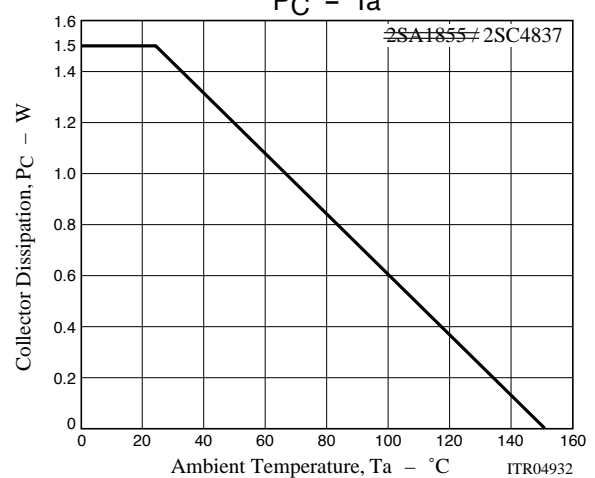
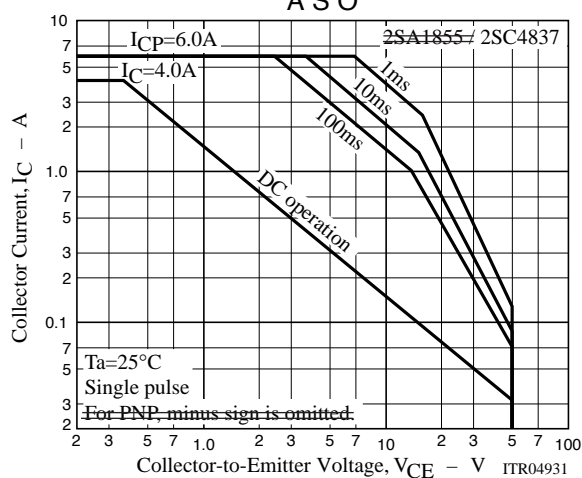
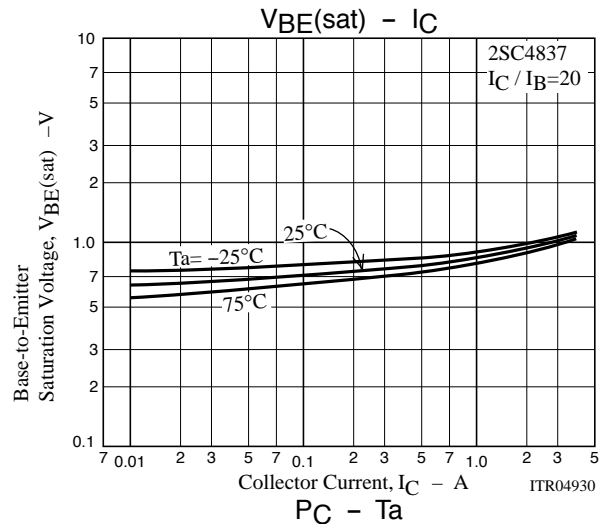
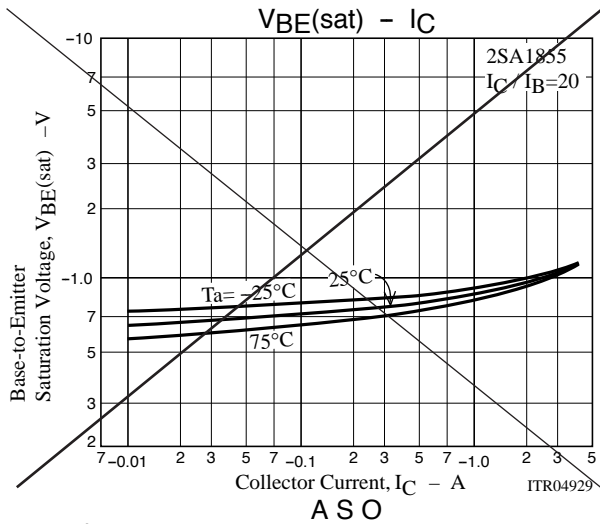
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (\pm)2A, I_B = (\pm)100mA$		(=350)	(=700)	mV
				190	500	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (\pm)2A, I_B = (\pm)100mA$		$(\pm)0.94$	$(\pm)1.2$	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	$(\pm)60$			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1mA, R_{BE} = \infty$	$(\pm)50$			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	$(\pm)6$			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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