

**SANYO**

No.3879

**2SA1827/2SC4731**

PNP/NPN Epitaxial Planar Silicon Transistors

100V/4A Switching Applications

**Applications**

- Relay drivers, high-speed inverters, converters, and other general high-current switching applications.

**Features**

- Low collector-to-emitter saturation voltage.
- High Gain-Bandwidth Product.
- Excellent linearity of DC Current Gain.
- Fast switching speed.

( ): 2SA1827

**Absolute Maximum Ratings at  $T_a = 25^\circ\text{C}$** 

			unit
Collector-to-Base Voltage	$V_{CB0}$	(- )120	V
Collector-to-Emitter Voltage	$V_{CEO}$	(- )100	V
Emitter-to-Base Voltage	$V_{EBO}$	(- )6	V
Collector Current	$I_C$	(- )4	A
Collector Current (Pulse)	$I_{CP}$	(- )8	A
Base Current	$I_B$	(- )0.8	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  $T_a = 25^\circ\text{C}$** 

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)100\text{V}, I_E = 0$			(- )1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4\text{V}, I_C = 0$			(- )1	$\mu\text{A}$
DC Current Gain	$h_{FE(1)}$	$V_{CE} = (-)5\text{V}, I_C = (-)500\text{mA}$	100*		400*	
	$h_{FE(2)}$	$V_{CE} = (-)5\text{V}, I_C = (-)3\text{A}$	40			
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)10\text{V}, I_C = (-)500\text{mA}$	(130)180			MHz
Output Capacitance	$C_{ob}$	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$	(65)40			pF

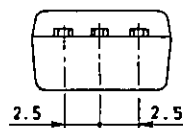
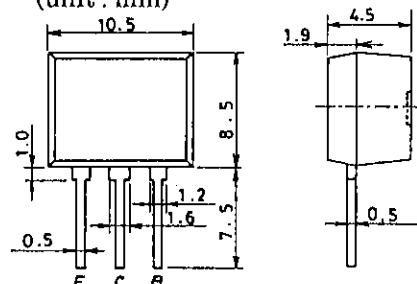
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\* : The 2SA1827/2SC4731 are classified by 500mA  $h_{FE}$  as follows

100	R	200	140	S	280	200	T	400
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**Package Dimensions 2084**

(unit: mm)

E : Emitter  
C : Collector  
B : Base

SANYO: FLP

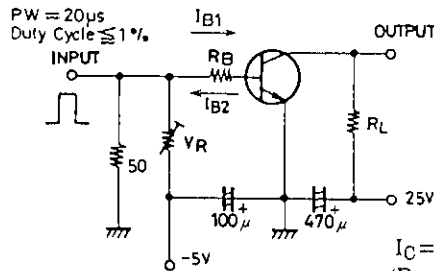
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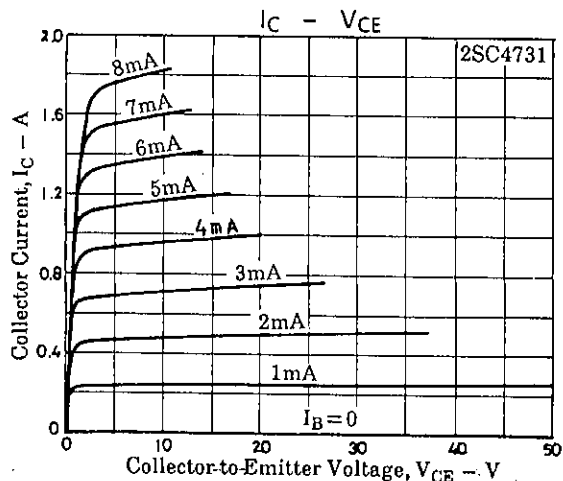
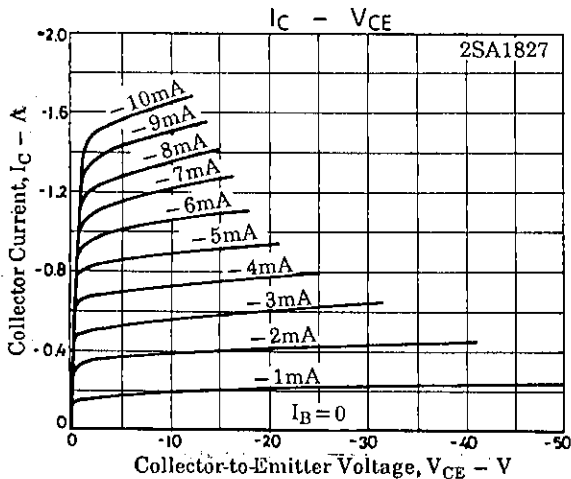
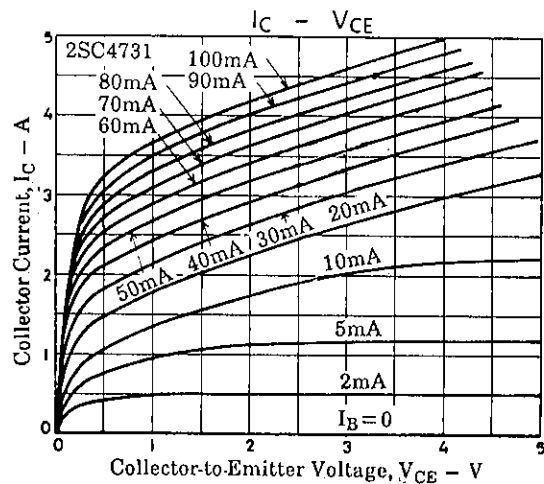
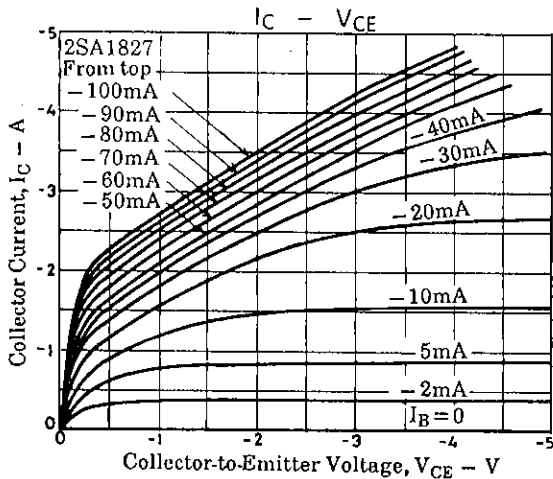
			min	typ	max	unit
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)2A, I_B = (-)0.2A$		(-200)	(-500)	mV
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)2A, I_B = (-)0.2A$		150	400	mV
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)	120		V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)	100		V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)	6		V
Turn-on Time	$t_{on}$	See specified Test Circuit.		100		ns
Storage Time	$t_{stg}$	"		(800)900		ns
Fall Time	$t_f$	"		50		ns

Switching Time Test Circuit

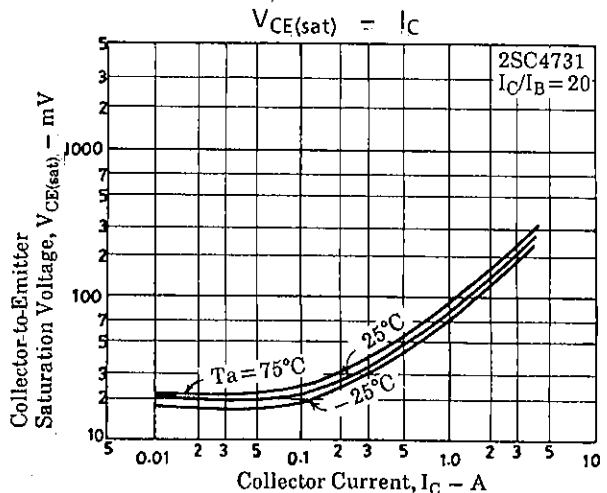
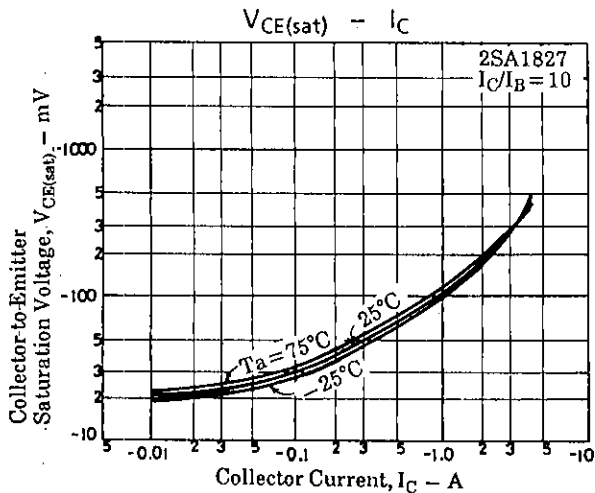
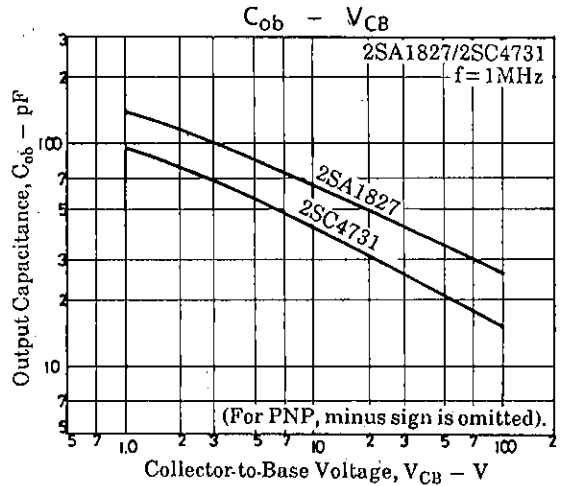
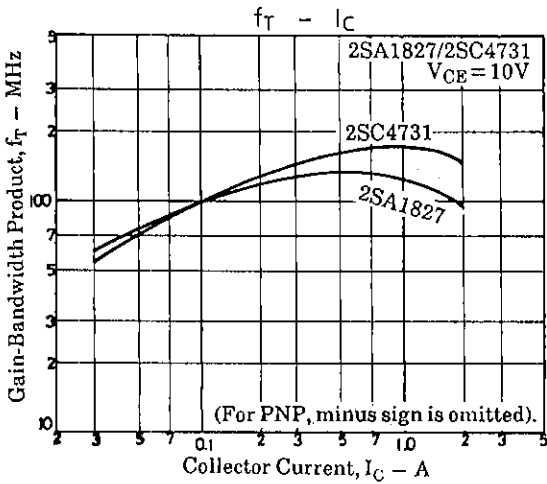
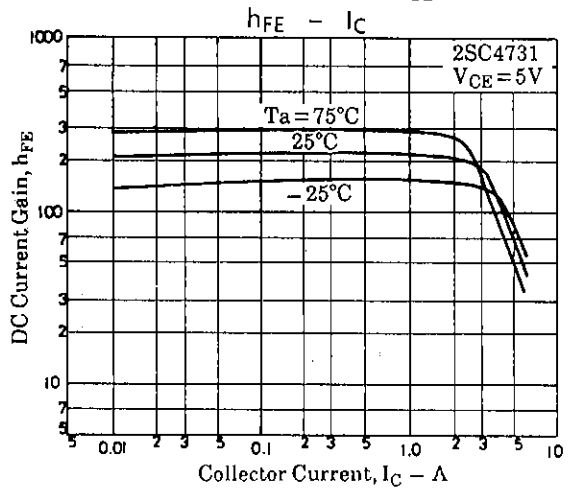
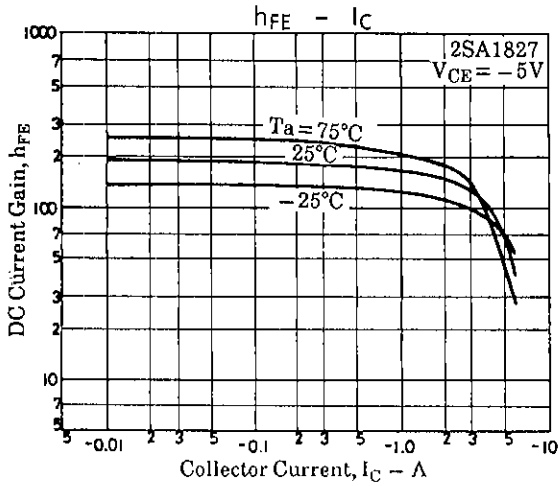
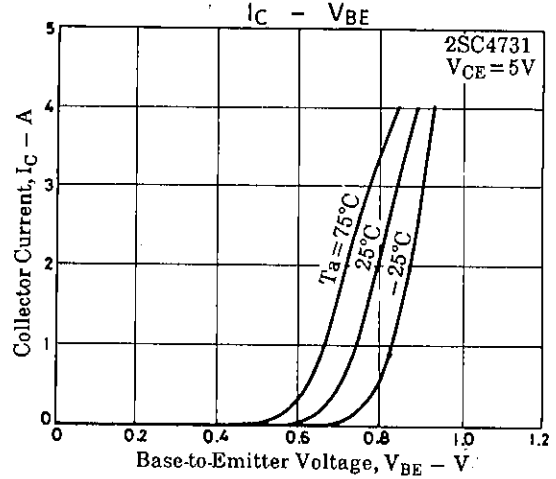
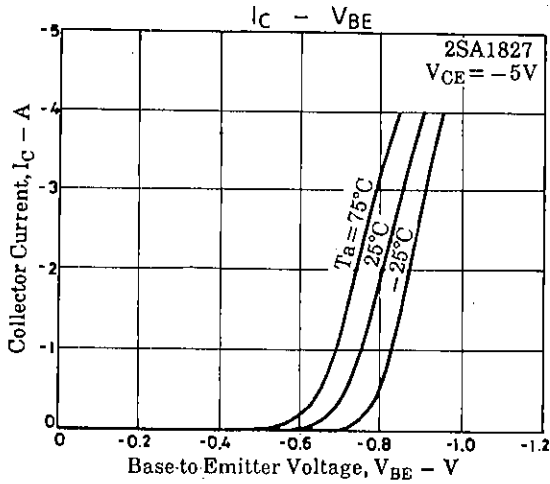


$I_C = 10I_{B1} = -10I_{B2} = 2A$   
(For PNP, the polarity is reversed).

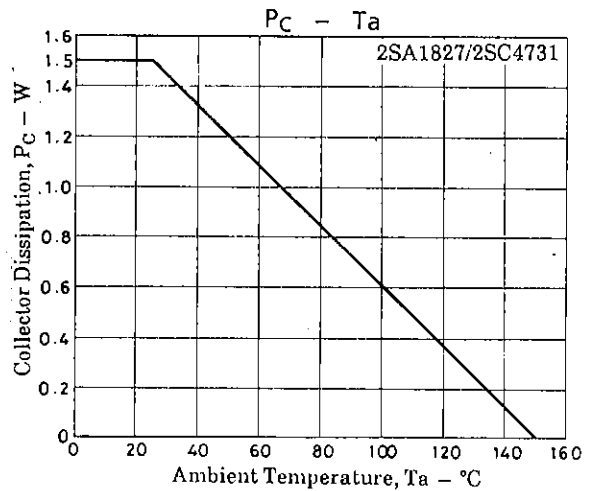
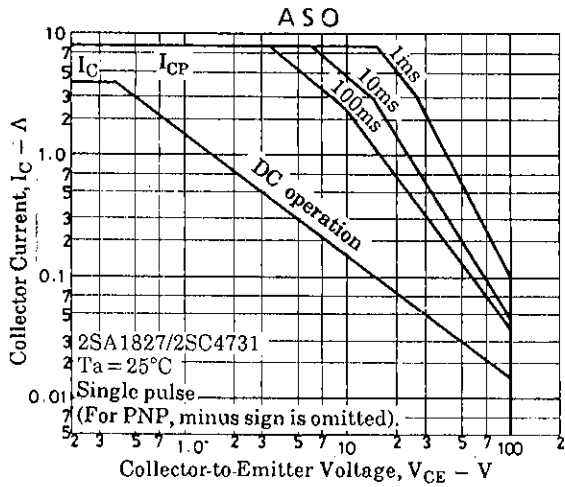
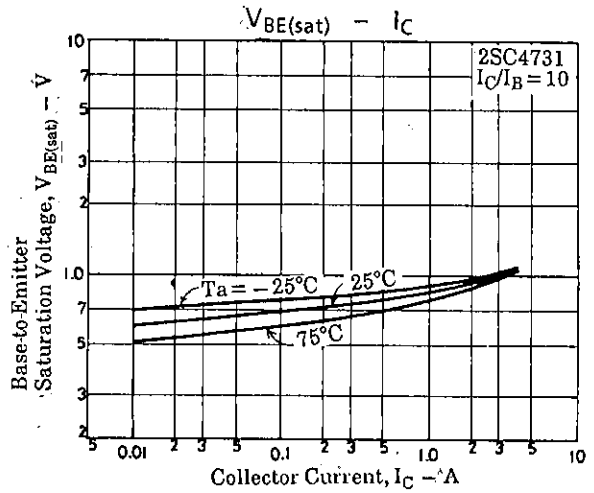
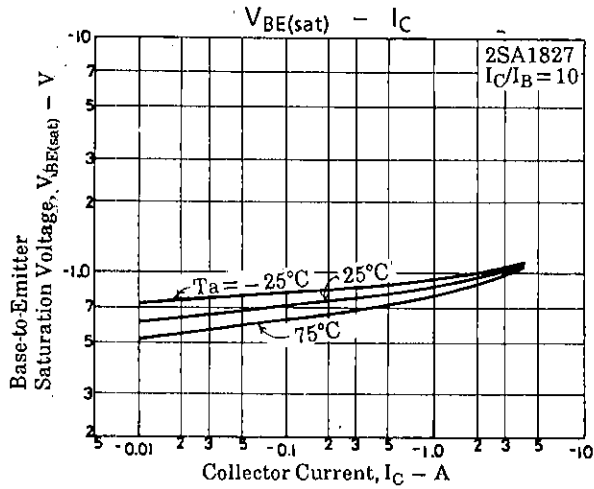
Unit (resistance:  $\Omega$ , capacitance: F)



2SA1827/2SC4731



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