

Ordering number:EN3878

PNP/NPN Epitaxial Planar Silicon Transistors

# 2SA1826/2SC4730



## 100V/3A 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.

( ) : 2SA1826

### Specifications

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

Parameter	Symbol	Conditions	Ratings	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	$I_C$		(-)3	A
Collector Current (Pulse)	$I_{CP}$		(-)6	A
Base Current	$I_B$		(-)0.6	A
Collector Dissipation	$P_C$		1.5	W
Junction Temperature	$T_j$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)100V, I_E = 0$			(-)1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4V, I_C = 0$			(-)1	$\mu A$
DC Current Gain	$h_{FE1}$	$V_{CE} = (-)5V, I_C = (-)500mA$	100*		400*	
	$h_{FE2}$	$V_{CE} = (-)5V, I_C = (-)2A$	40			
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)10V, I_C = (-)500mA$		(130)		MHz
				180		MHz

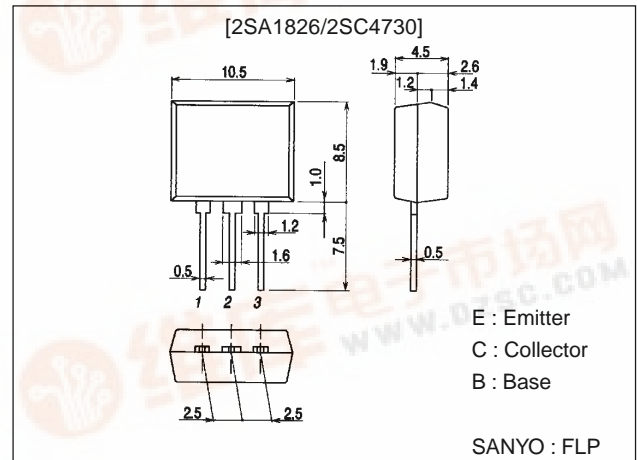
\* : The 2SA1826/2SC4730 are classified by 500mA  $h_{FE}$  as follows :

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

unit:mm

2084



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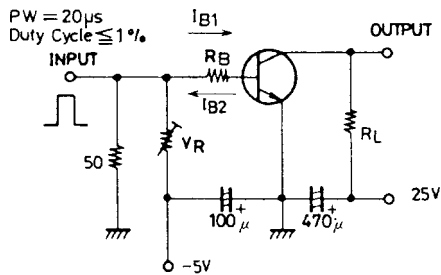
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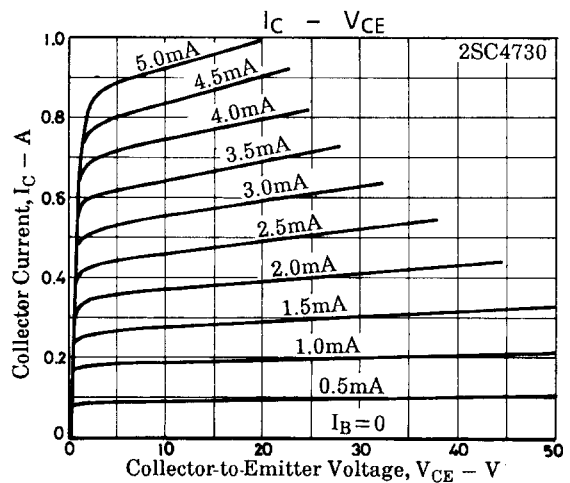
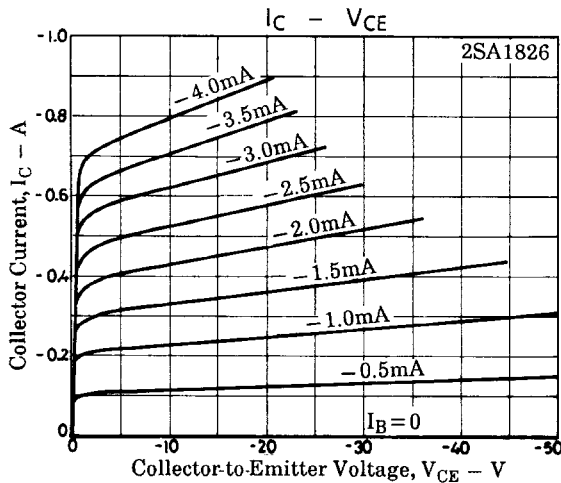
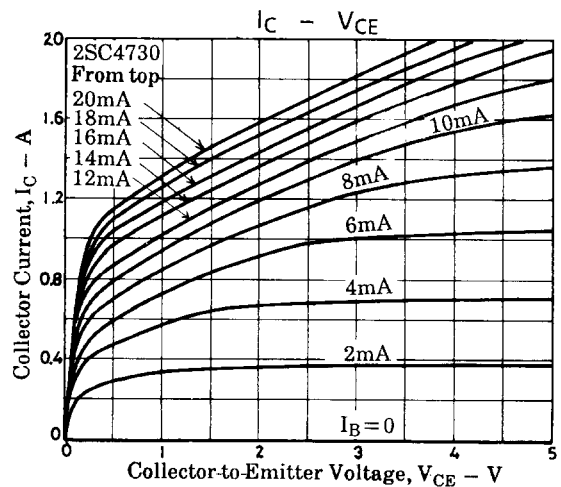
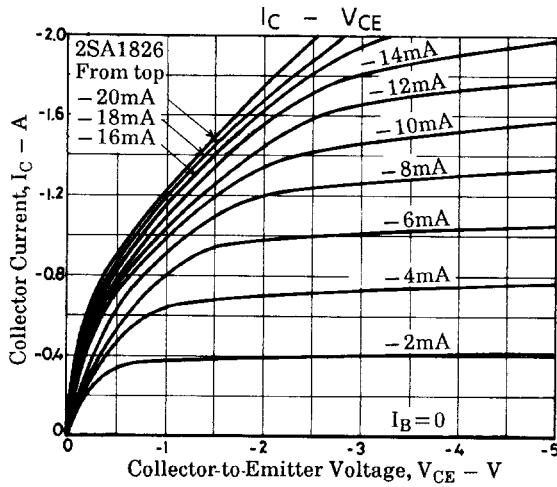
## 2SA1826/2SC4730

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	$C_{ob}$	$V_{CB} = (-)10V, f = 1MHz$		(40)25		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)1.5A, I_B = (-)0.15A$		(-200)	(-500)	mV
				150	400	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)1.5A, I_B = (-)0.15A$		(-0.9)	(-1.2)	mV
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-120)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-100)			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		100		ns
Storage Time	$t_{stg}$	See specified Test Circuit		(800)		ns
				900		ns
Fall Time	$t_f$	See specified Test Circuit		50		ns

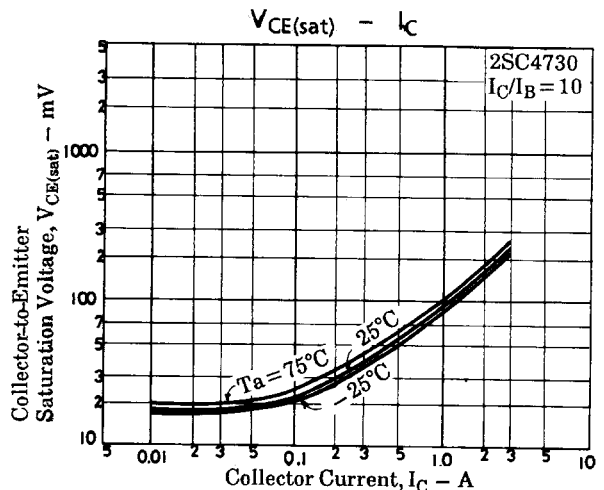
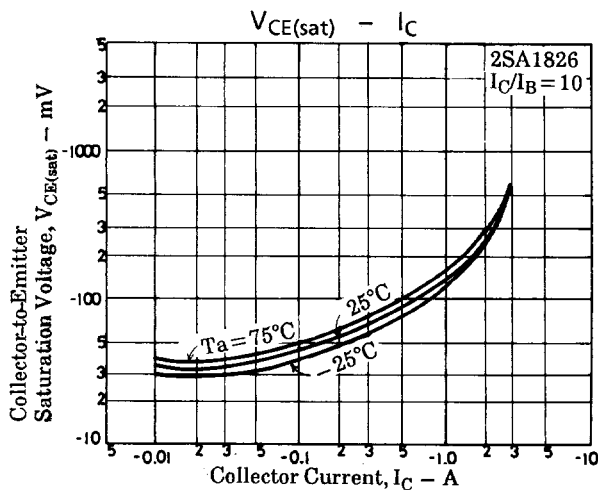
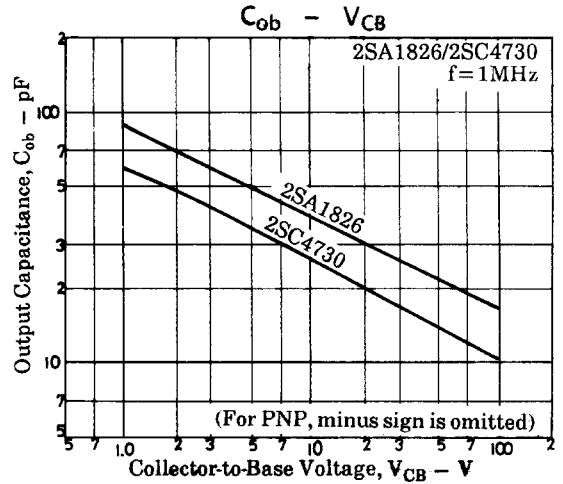
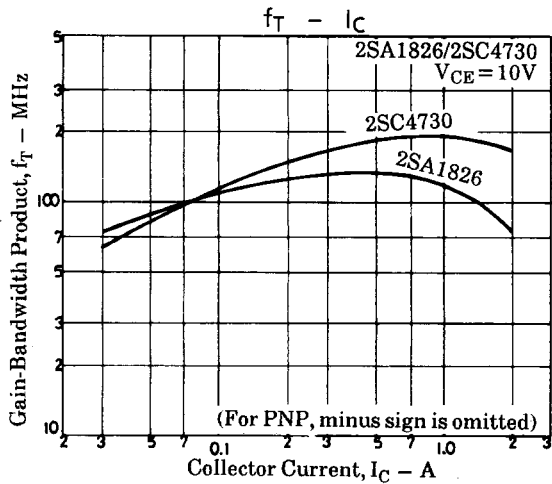
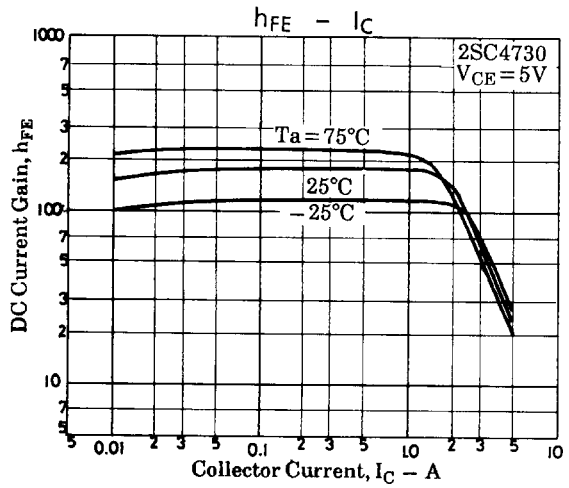
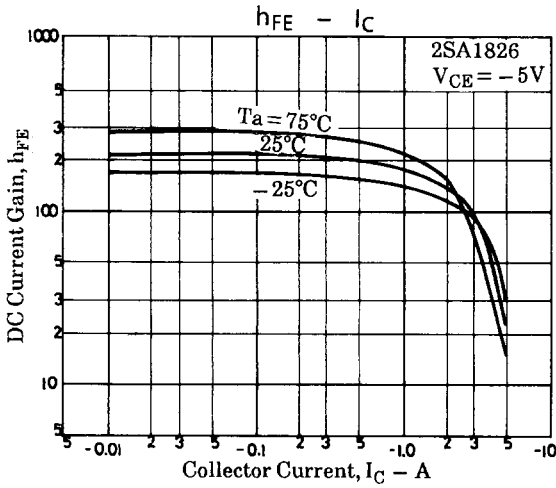
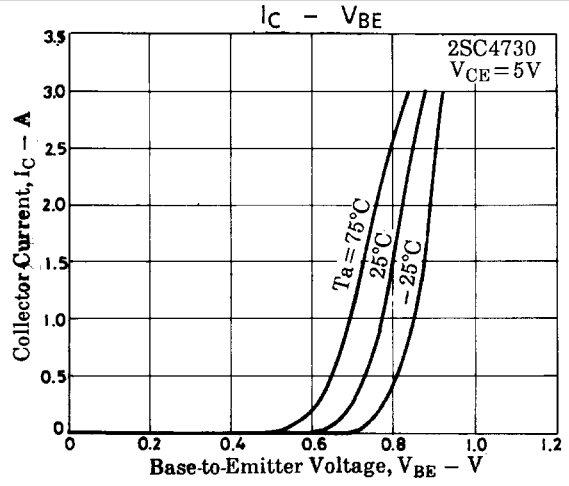
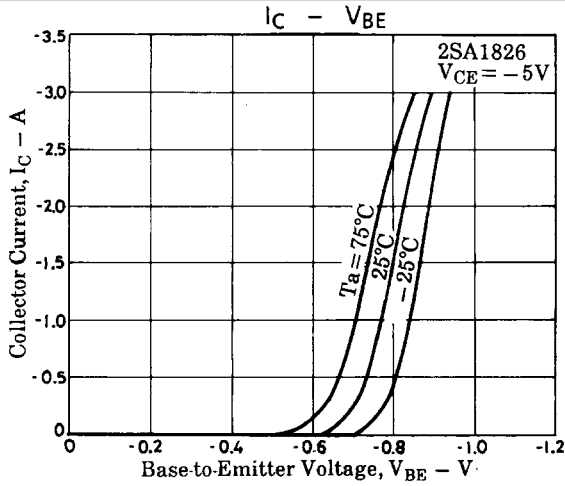
### Switching Time Test Circuit



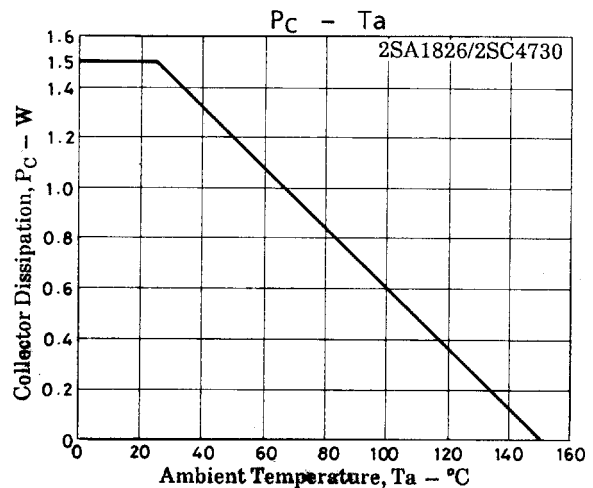
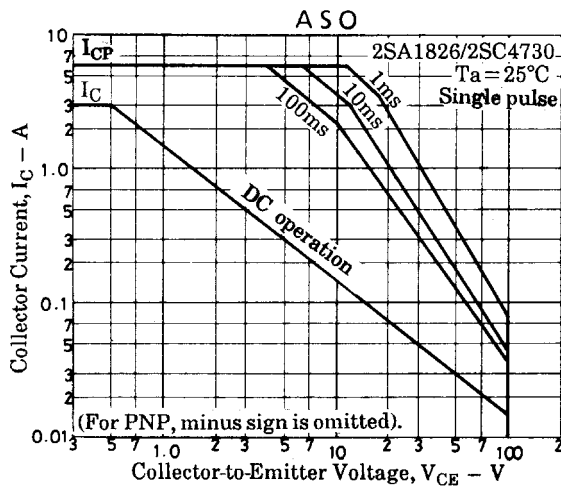
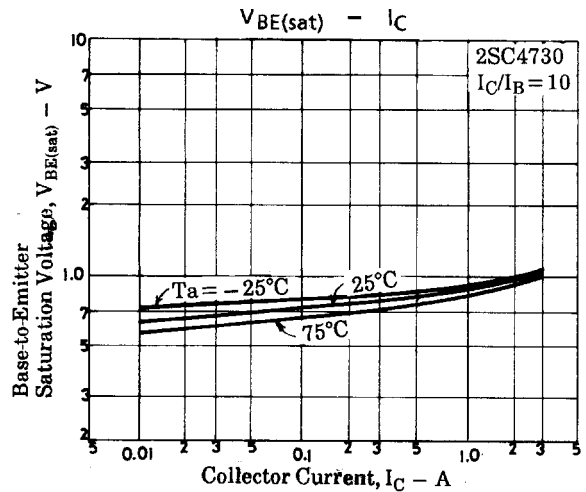
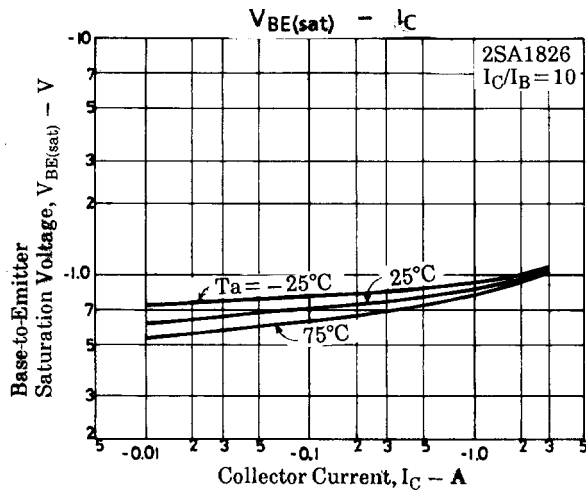
$I_C = 10I_{B1} = -10I_{B2} = 1.5A$   
 (For PNP, the polarity is reversed).  
 Unit (resistance :  $\Omega$ , capacitance : F)



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