Ordering number:EN4409

2SA1830 : PNPEpitaxial Planar Silicon Transistor
2SC4734 ; NPN Triple Diffused Planar Silicon Transistor

2SA1830/2SC4734

High-Voltage Driver Applications

Features

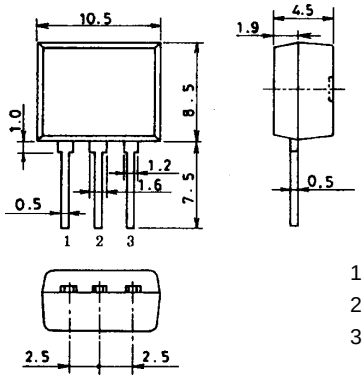
- Large current capacity (I_C=2A).
- High breakdown voltage (V_{CEO}≥400V).
- Possible to offer the 2SA1830/2SC4734 devices in a tape reel packaging, which facilitates automatic insertion.

Package Dimensions

unit:mm

2084A

[2SA1830/2SC4734]



SANYO : FLP

( ) : 2SA1830

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)400	V
Collector-to-Emitter Voltage	V_{CEO}		(–)400	V
Emitter-to-Base Voltage	V_{EBO}		(–)5	V
Collector Current	I_C		(–)2	A
Collector Current (Pulse)	I_{CP}		(–)4	A
Collector Dissipation	P_C		1.5	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–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}=(–)300V, I_E=0			(–)1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=0			(–)1.0	μA
DC Current Gain	h_{FE}	V_{CE}=(–)10V, I_C=(–)100mA	40*		200*	
Gain-Bandwidth Product	f_T	V_{CE}=(–)10V, I_C=(–)100mA		(40)60		MHz
Output Capacitance	C_{ob}	V_{CB}=(–)30V, f=1MHz		(25)15		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)500mA, I_B=(–)50mA			(–)1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)500mA, I_B=(–)50mA			(–)1.0	V

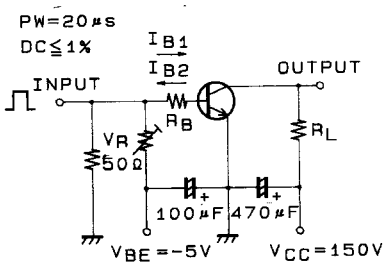
* : The 2SA1830/2SC4734 are classified by 100mA h_{FE} as follows :

40 C 80	60 D 120	100 E 200

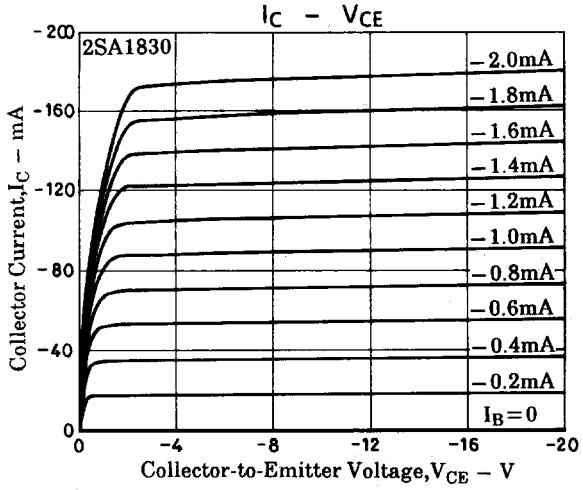
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

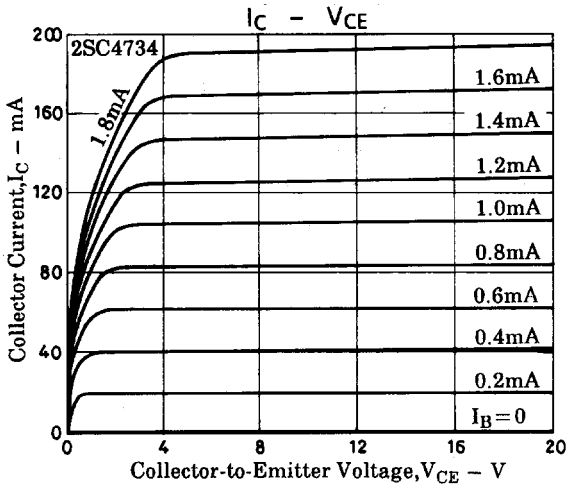
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0	(–)400			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)400			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)10μA, I_C=0	(–)5			V
Turn-ON Time	t_{on}	See specified Test Circuit		(0.12)		μs
				0.085		μs
Storage Time	t_{stg}	See specified Test CIrcuit		(3.0)		μs
				4.0		μs
Fall Time	t_f	See specified Test Circuit		(0.3)		μs
				0.6		μs

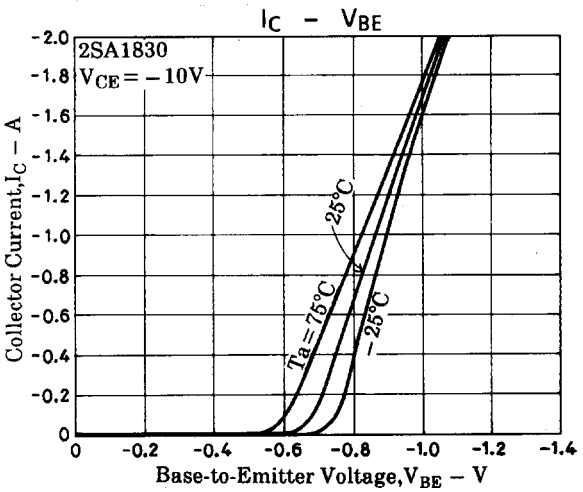
Switching Time Test Circuit

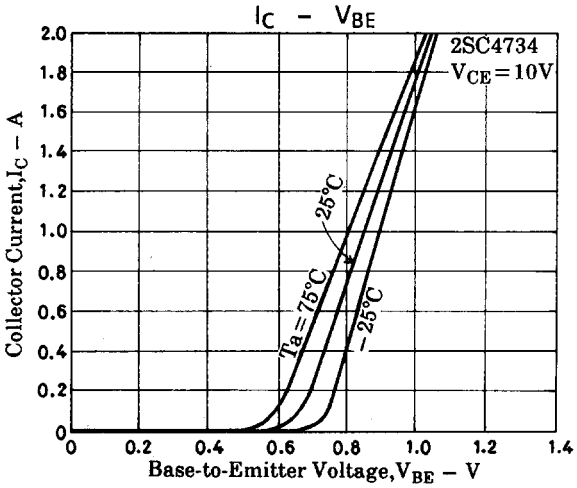


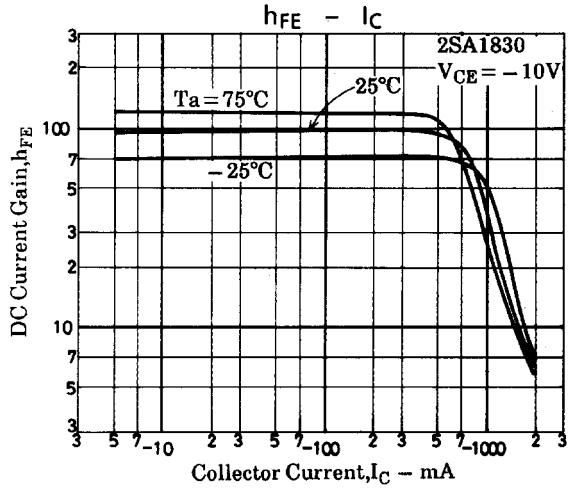
$10I_{B1}=-10I_{B2}=I_C=500mA$ A01174
$R_L=300\Omega$, $R_B=20\Omega$ at $I_C=500mA$
For PNP, the polarity is reversed.
(Unit resistance : Ω, capacitacne : F)

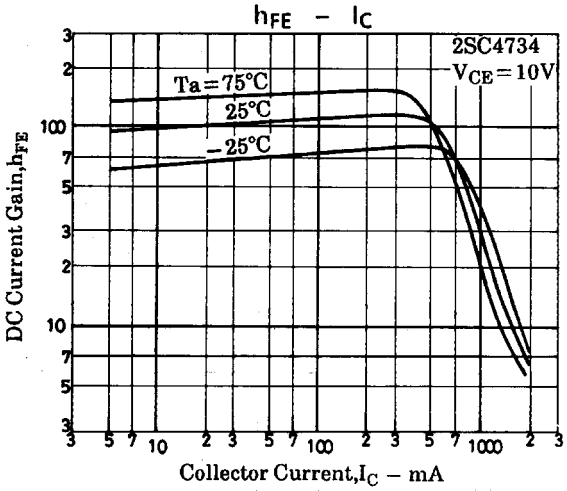


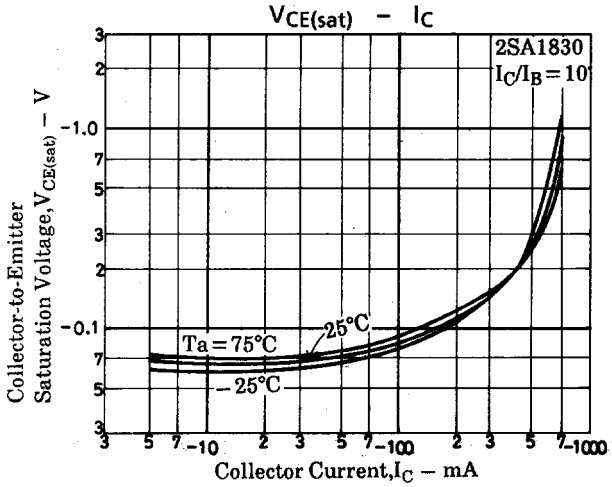


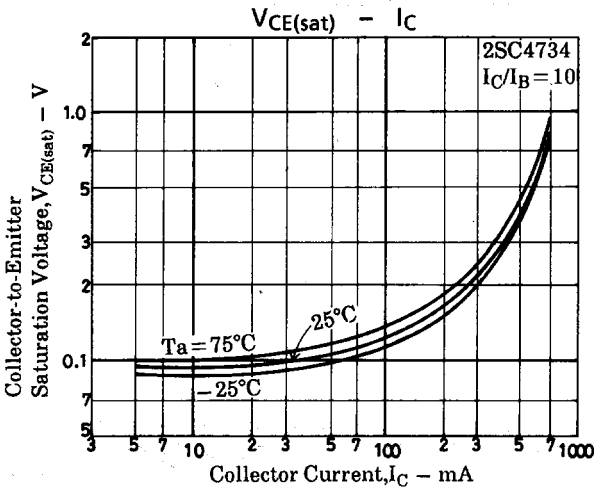


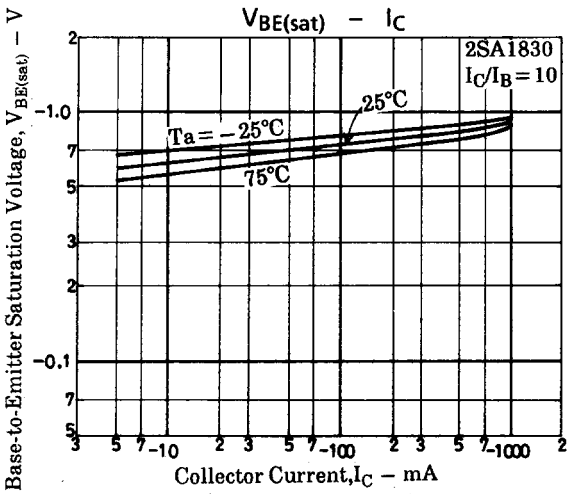


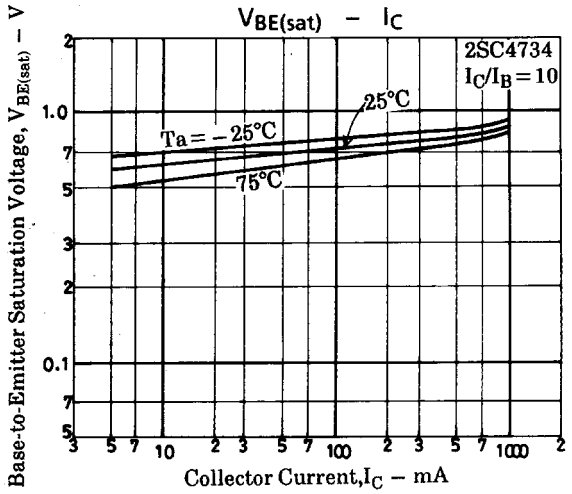

hFE – IC
2SA1830
VCE = –10V
Ta = 75°C
25°C
–25°C
DC Current Gain, hFE
Collector Current, IC – mA

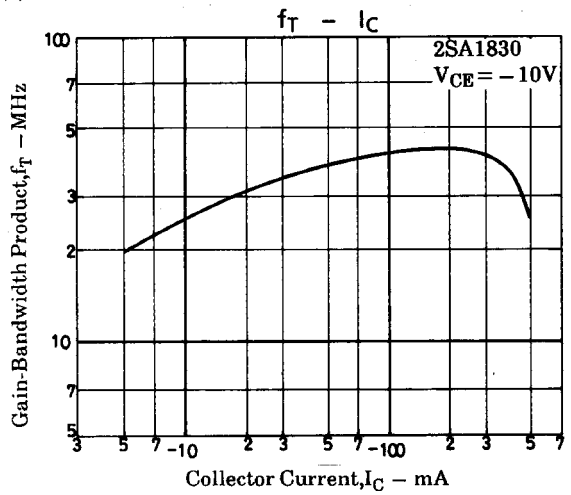

hFE – IC
2SC4734
VCE = 10V
Ta = 75°C
25°C
–25°C
DC Current Gain, hFE
Collector Current, IC – mA

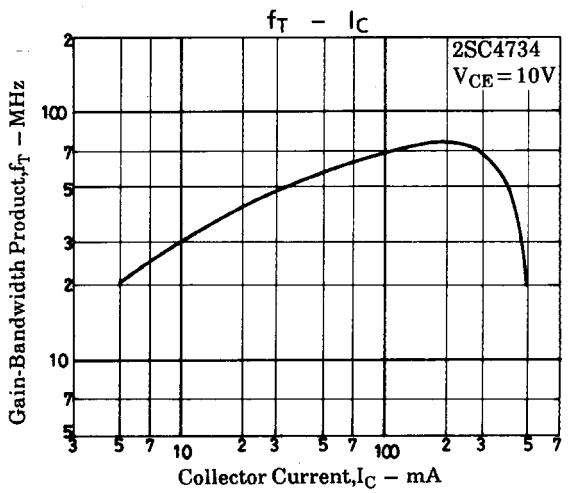

VCE(sat) – IC
2SA1830
IC/IB = 10
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Ta = 75°C
25°C
–25°C
Collector Current, IC – mA

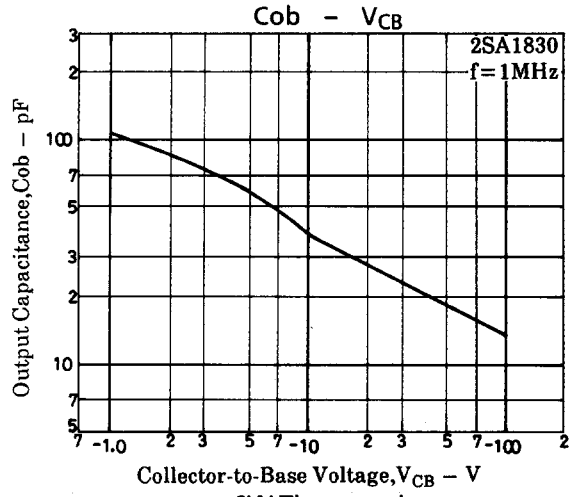

VCE(sat) – IC
2SC4734
IC/IB = 10
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Ta = 75°C
25°C
–25°C
Collector Current, IC – mA

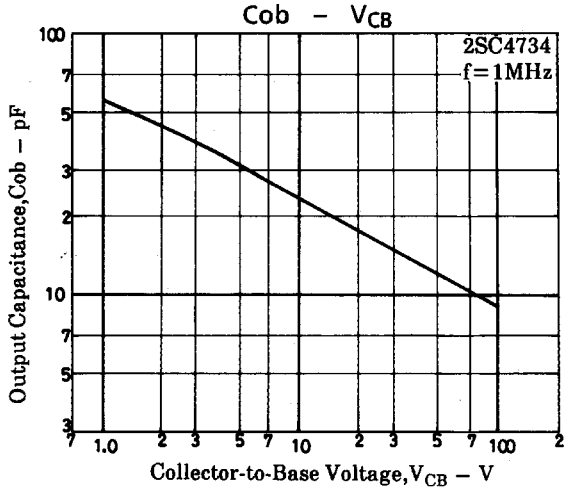

VBE(sat) – IC
2SA1830
IC/IB = 10
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Ta = –25°C
25°C
75°C
Collector Current, IC – mA

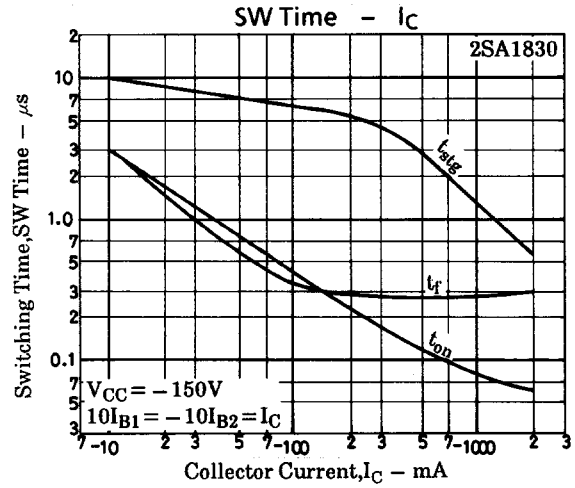

VBE(sat) – IC
2SC4734
IC/IB = 10
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Ta = –25°C
25°C
75°C
Collector Current, IC – mA

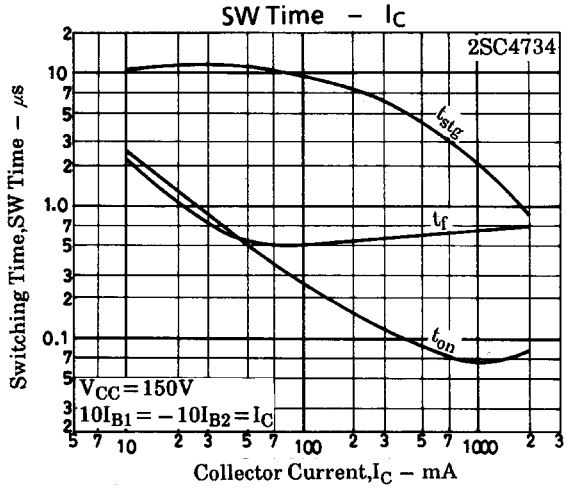

fT – IC
2SA1830
VCE = –10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA

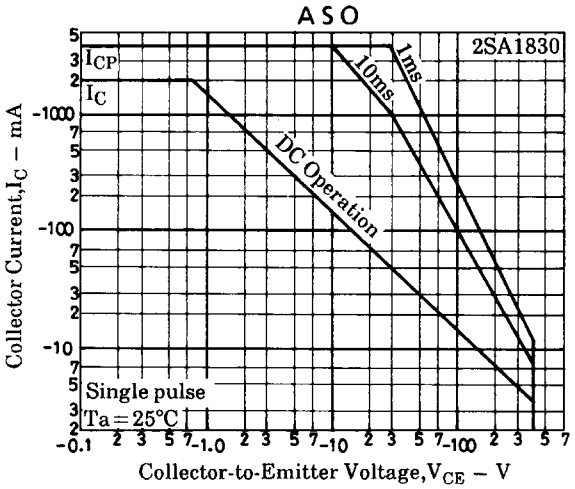

fT – IC
2SC4734
VCE = 10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA

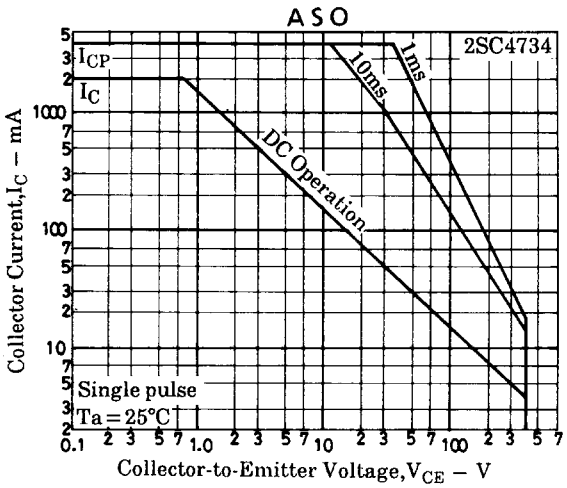

Cob – V_{CB}
2SA1830
f=1MHz
Output Capacitance,Cob – pF
Collector-to-Base Voltage,V_{CB} – V

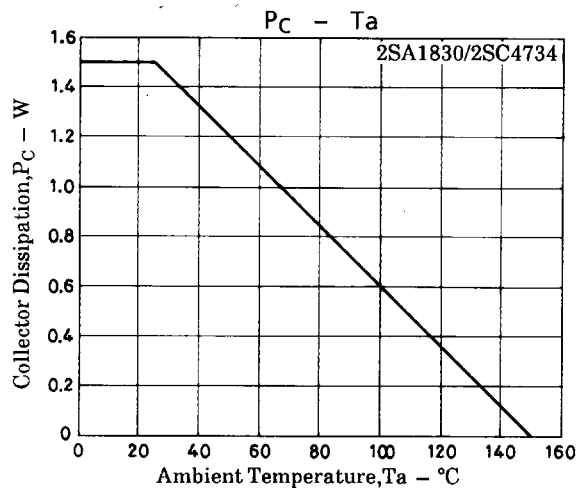

Cob – V_{CB}
2SC4734
f=1MHz
Output Capacitance,Cob – pF
Collector-to-Base Voltage,V_{CB} – V


SW Time – I_C
2SA1830
t_{stg}
t_f
t_{on}
V_{CC}=–150V
$10I_{B1}$=–$10I_{B2}$=I_C
Switching Time,SW Time – μs
Collector Current,I_C – mA


SW Time – I_C
2SC4734
t_{stg}
t_f
t_{on}
V_{CC}=150V
$10I_{B1}$=–$10I_{B2}$=I_C
Switching Time,SW Time – μs
Collector Current,I_C – mA


A S O
2SA1830
I_{CP}
I_C
1ms
10ms
DC Operation
Single pulse
Ta=25°C
Collector Current,I_C – mA
Collector-to-Emitter Voltage,V_{CE} – V


A S O
2SC4734
I_{CP}
I_C
1ms
10ms
DC Operation
Single pulse
Ta=25°C
Collector Current,I_C – mA
Collector-to-Emitter Voltage,V_{CE} – V


P_C – Ta
2SA1830/2SC4734
Collector Dissipation,P_C – W
Ambient Temperature,Ta – °C