

Ordering number:EN3511A

2SA1785 : PNP Epitaxial Planar Silicon Transistor
2SC4645 : NPN Triple Diffused Planar Silicon Transistor



2SA1785/2SC4645

High Voltage Driver Applications

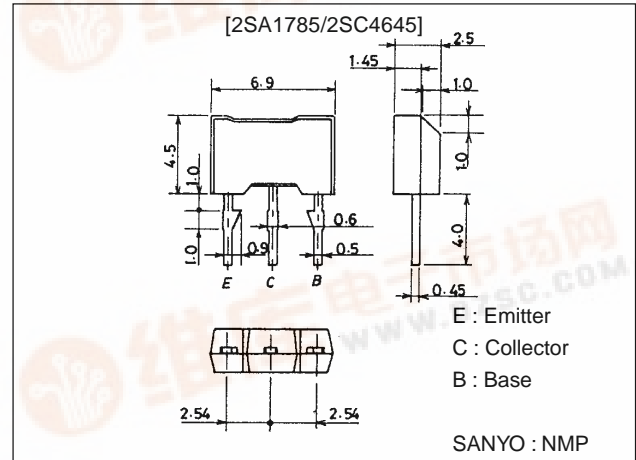
Features

- Large current capacity ($I_C=1A$).
- High breakdown voltage ($V_{CEO} \geq 400V$).

Package Dimensions

unit:mm

2064



() : 2SA1785

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-400)	V
Collector-to-Emitter Voltage	V_{CEO}		(-400)	V
Emitter-to-Base Voltage	V_{EBO}		(-5)	V
Collector Current	I_C		(-1)	A
Collector Current (Pulse)	I_{CP}		(-2)	A
Collector Dissipation	P_C		1	W
Junction Temperature	T_j		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

Electrical Characteristics at $T_a = 25^\circ C$

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	$V_{CE} = (-)10V, I_C = (-)50mA$		(50)70		MHz
Output Capacitance	C_{ob}	$V_{CB} = (-)30V, f = 1MHz$		(12)8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)200mA, I_B = (-)20mA$			(-1.0)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)200mA, I_B = (-)20mA$			(-1.0)	V

* : The 2SA1785/2SC4645 are classified by 100mA h_{FE} as follows :

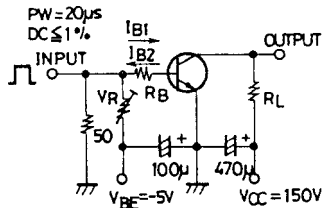
40	C	80	60	D	120	100	E	200
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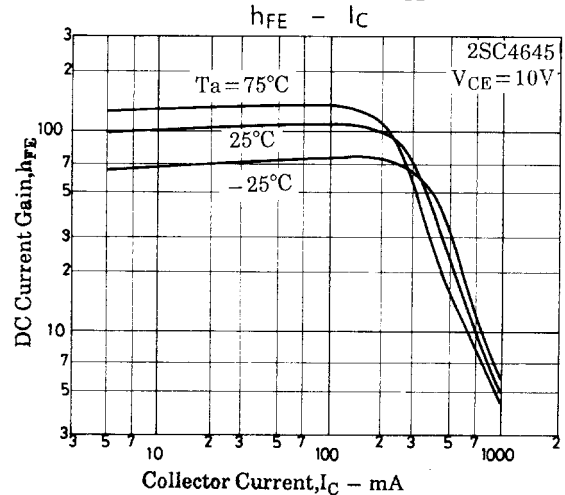
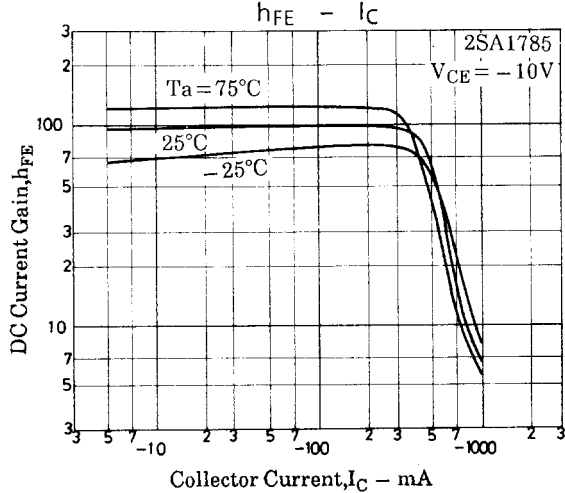
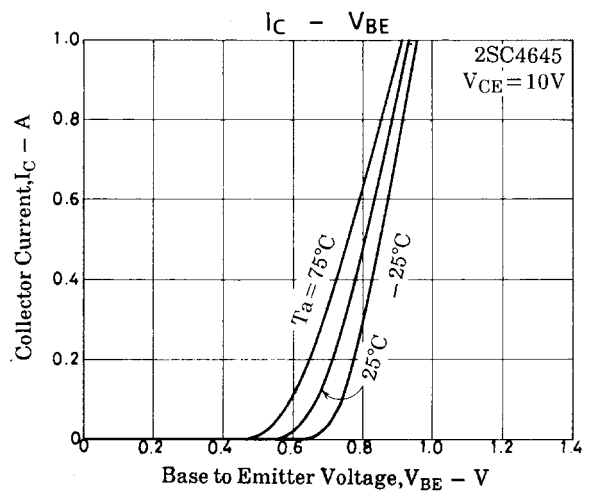
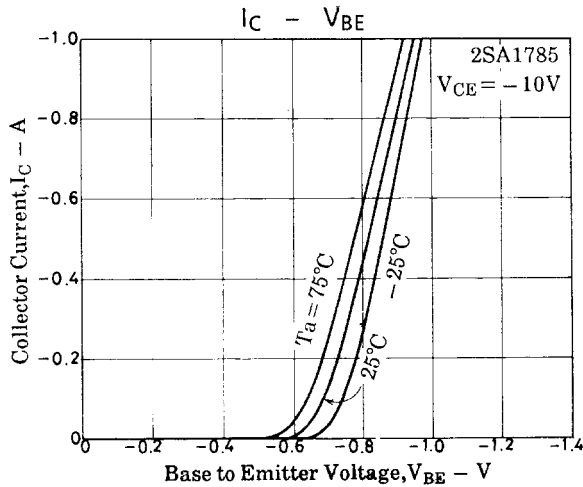
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)400			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)400			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)5			V
Turn-ON Time	t_{on}	See specified Test Circuit		(0.25)		μs
				0.11		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
				0.65		μs

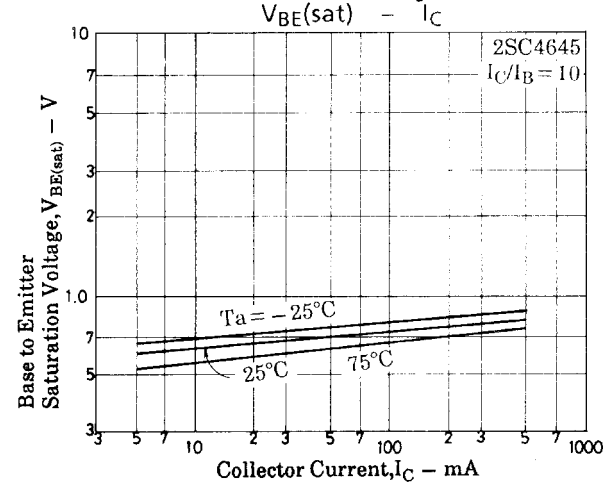
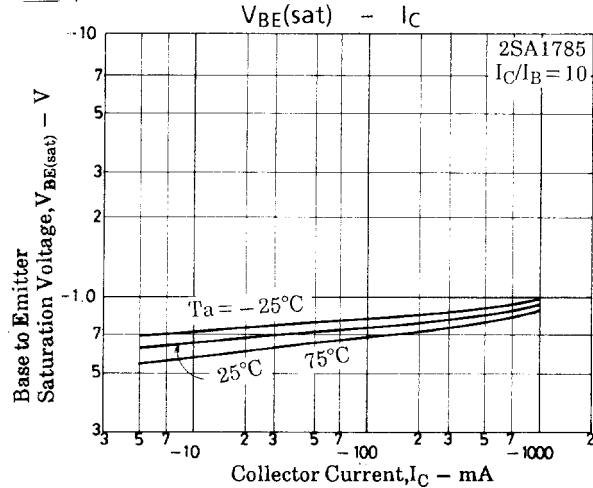
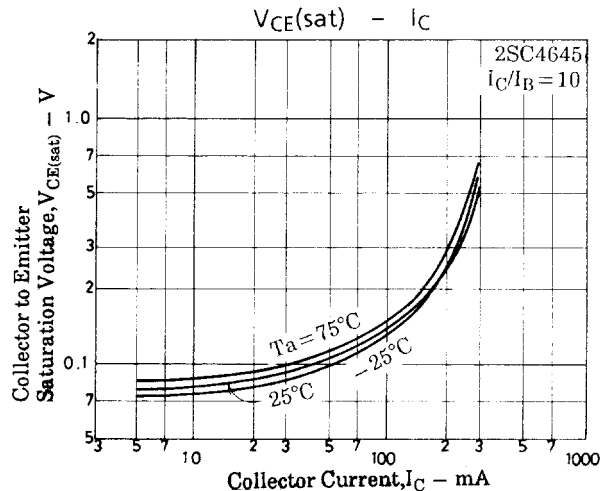
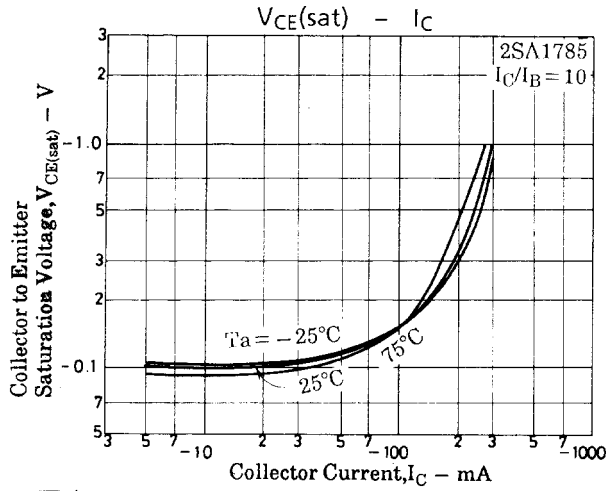
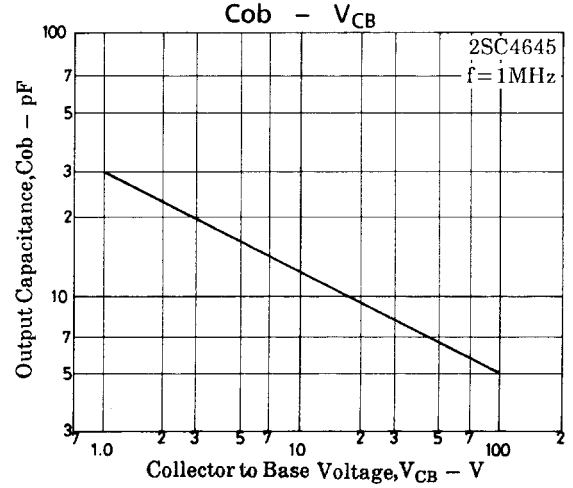
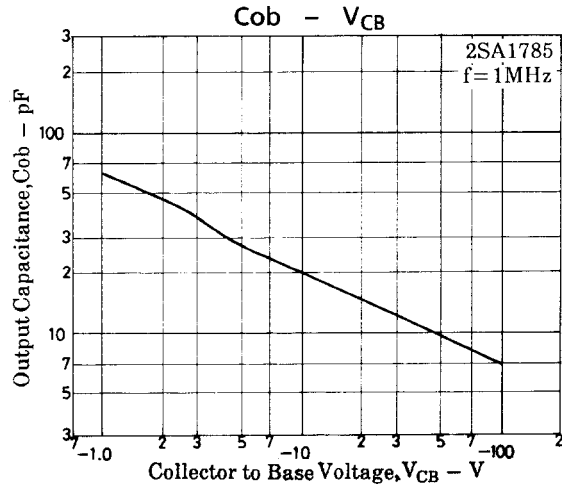
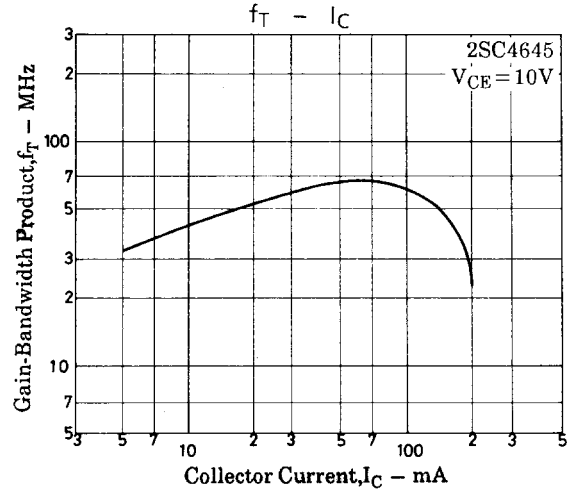
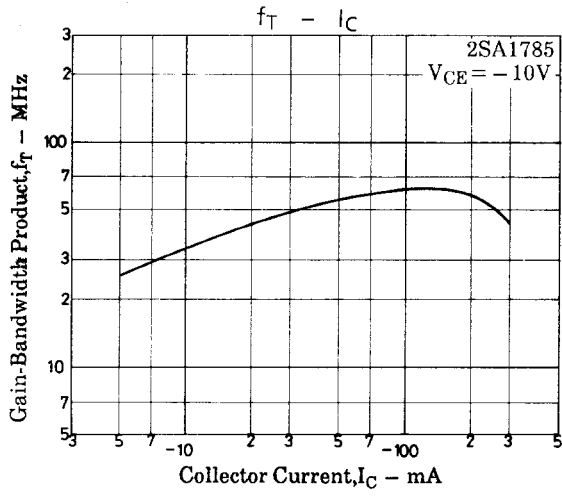
Switching Time Test Circuit



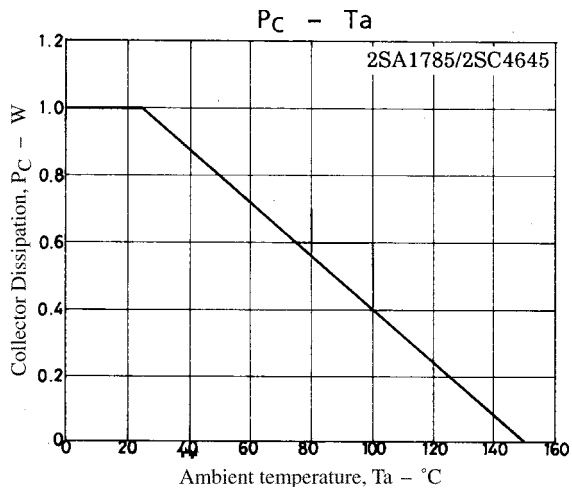
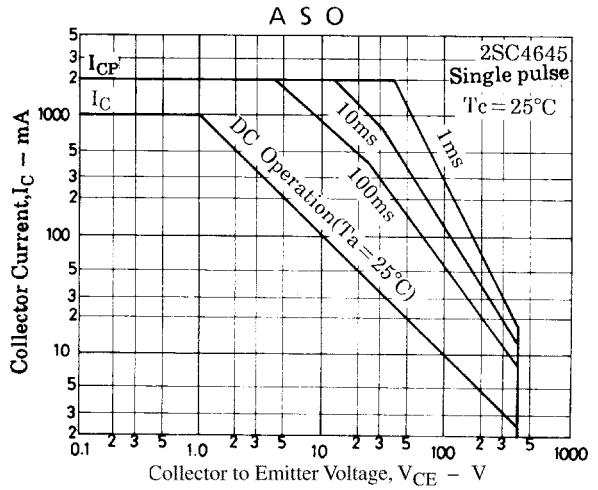
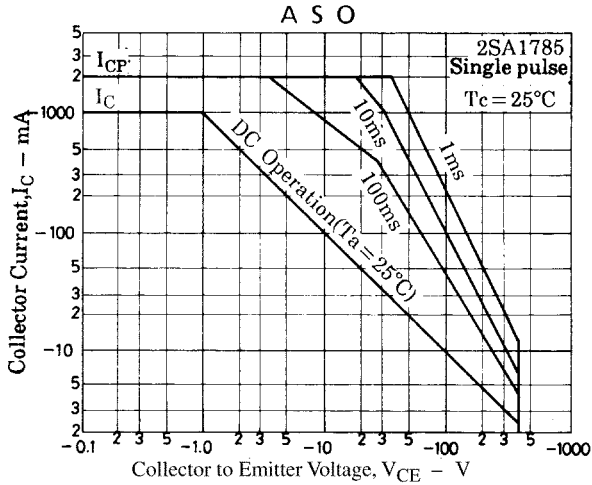
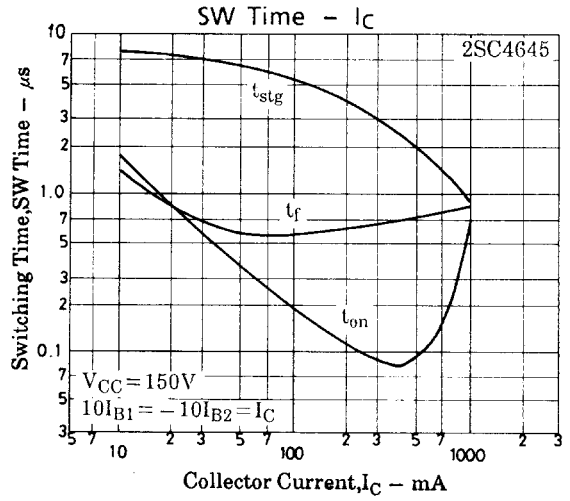
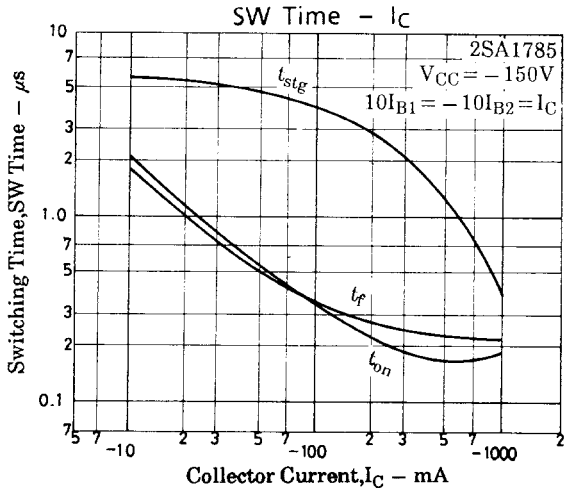
$10I_{B1} = -10I_{B2} = I_C = 200mA$
 $R_L = 750\Omega, R_B = 50\Omega, \text{ at } I_C = 200mA$
 (For PNP, the polarity is reversed.)
 Unit (resistance : Ω , capacitance : F)



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