



## 2SA1785/2SC4645

### High Voltage Driver Applications

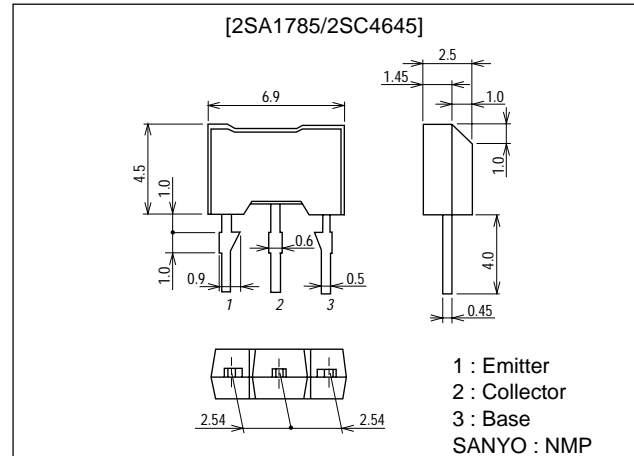
#### Features

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

#### Package Dimensions

unit:mm

2064A



() : 2SA1785

#### Specifications

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

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	$I_C$		(-)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	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4V, I_C = 0$			(-)1.0	$\mu A$
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 :

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Rank	C	D	E
$h_{FE}$	40 to 80	60 to 120	100 to 200

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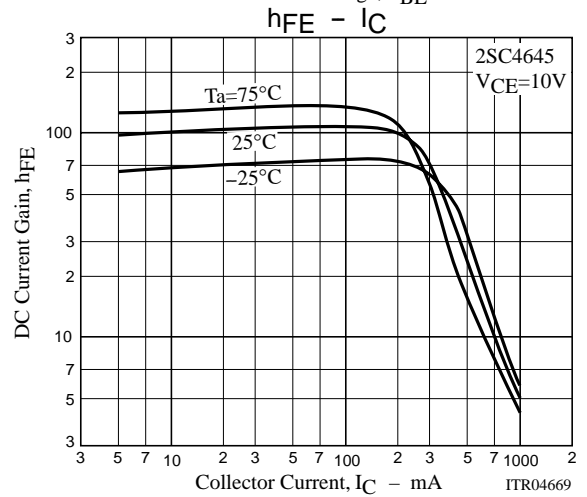
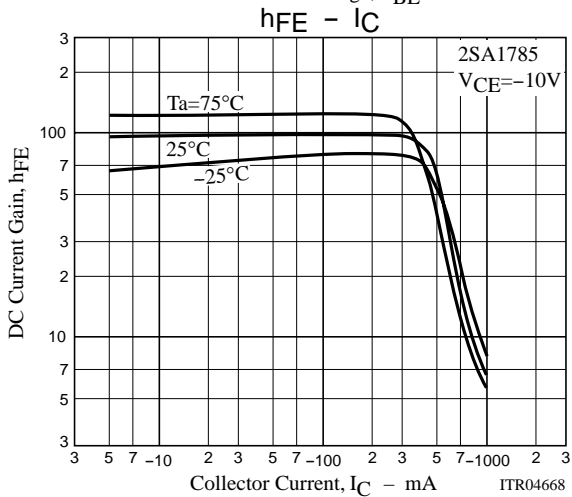
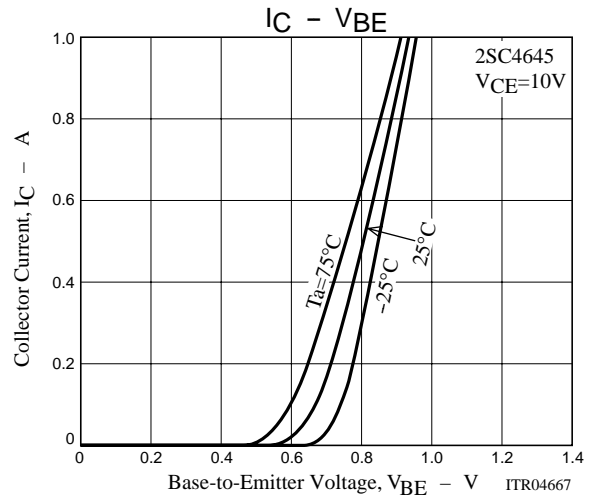
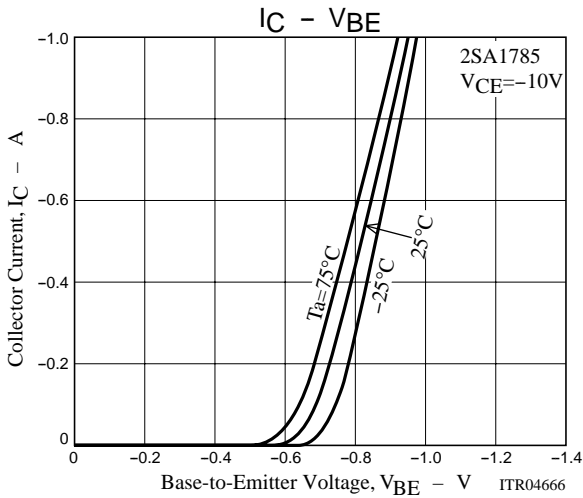
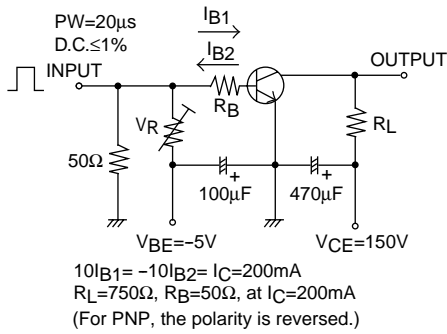
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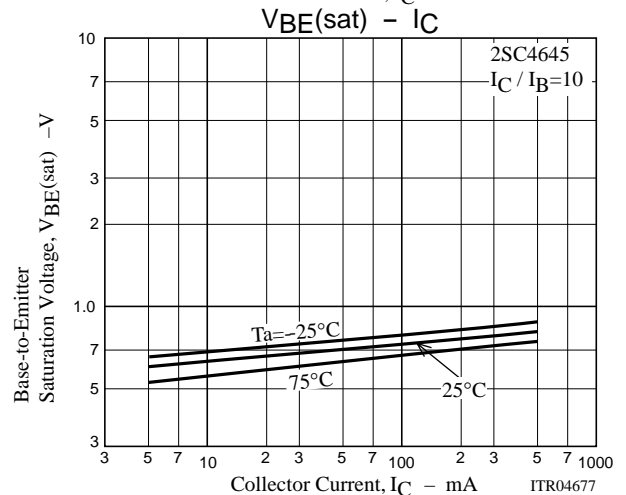
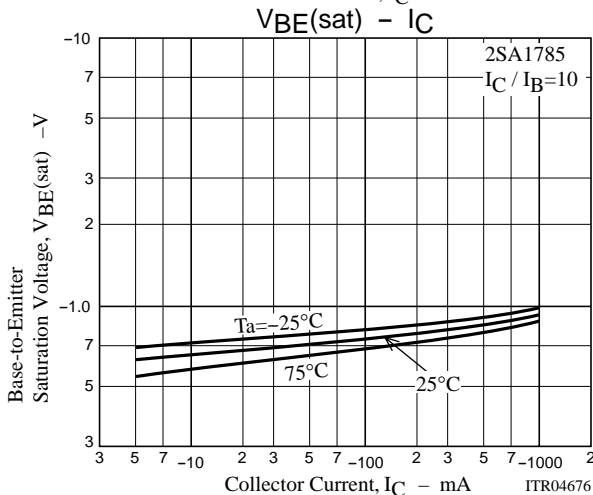
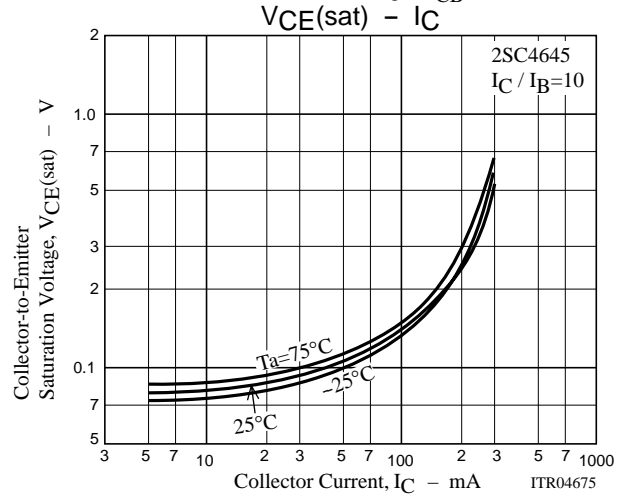
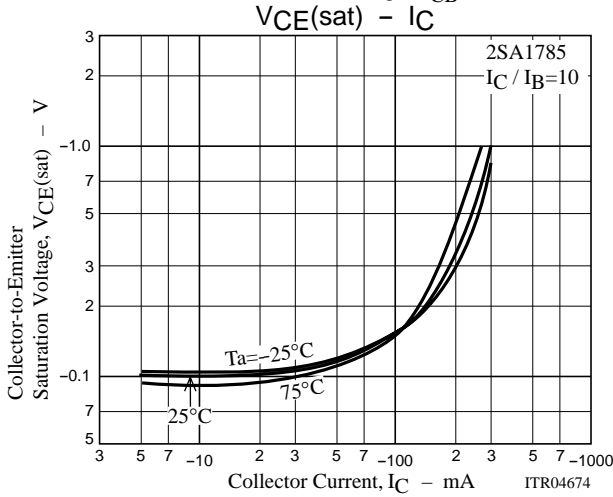
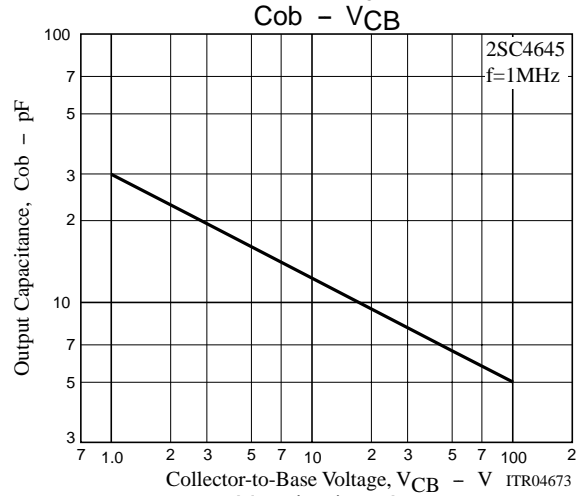
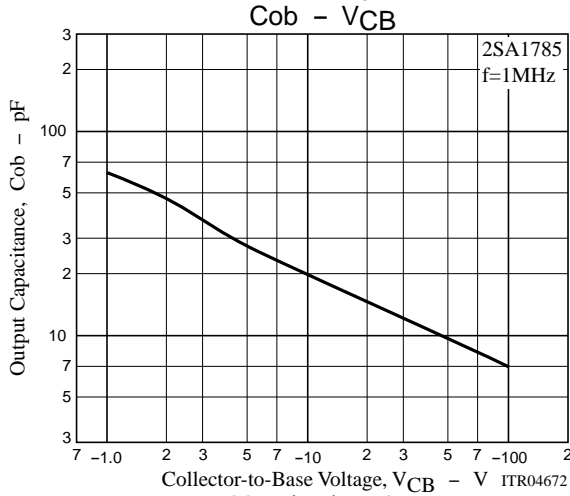
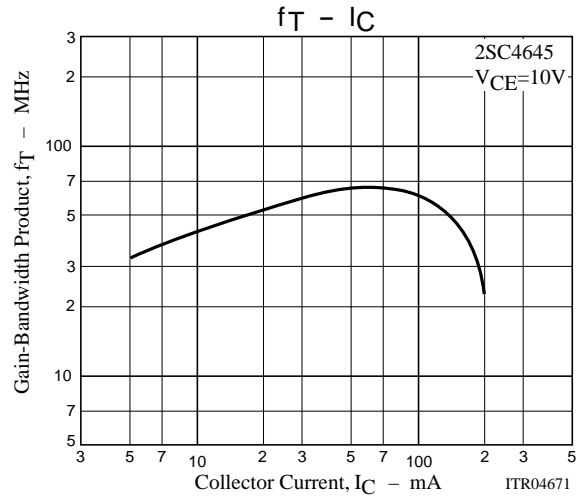
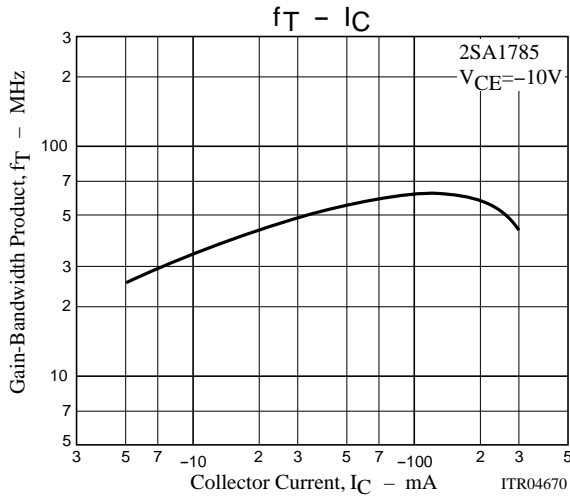
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)400			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)400			V
Emitter-to-Base 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)		$\mu s$
				0.11		$\mu s$
Storage Time	$t_{stg}$	See specified Test Circuit		(3.0)		$\mu s$
				4.0		$\mu s$
Fall Time	$t_f$	See specified Test Circuit		(0.3)		$\mu s$
				0.65		$\mu s$

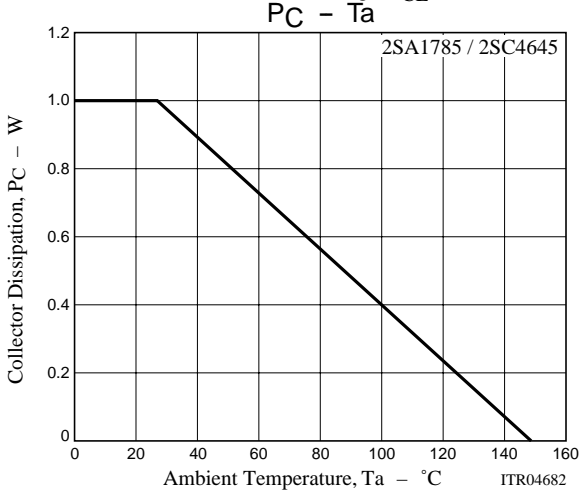
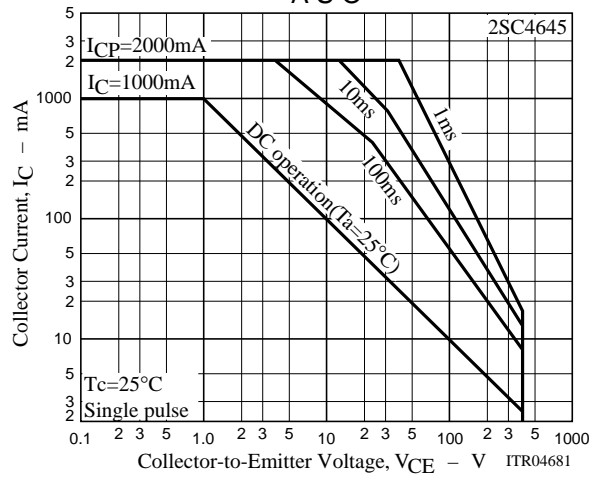
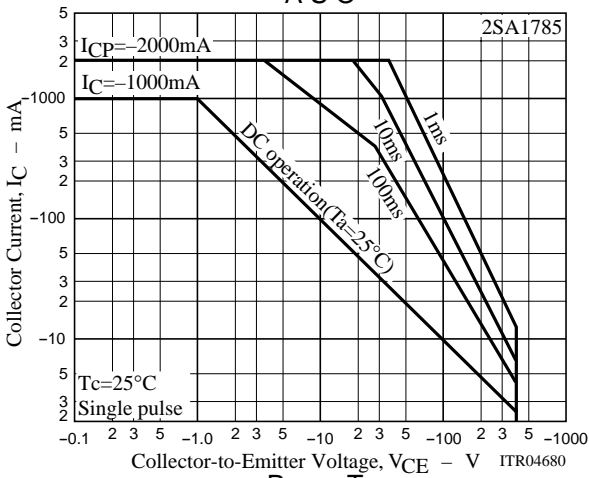
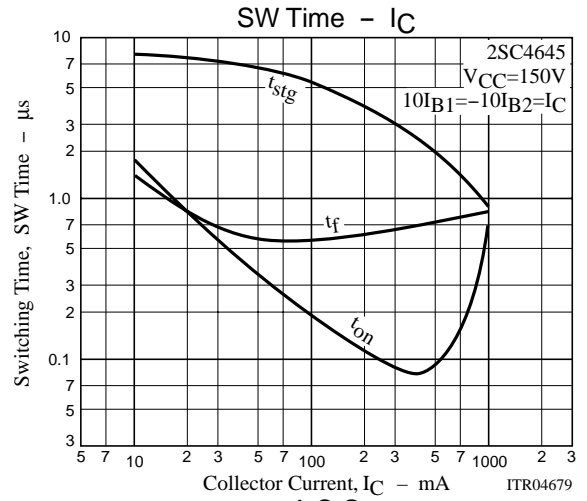
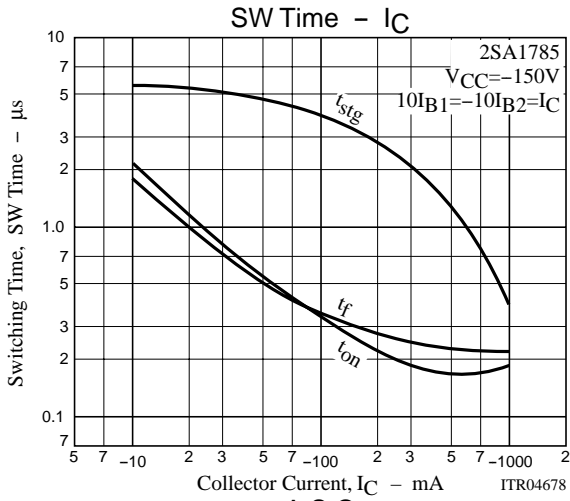
## Switching Time Test Circuit



# 2SA1785/2SC4645



## 2SA1785/2SC4645



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