



# 2SA1772/2SC4615

## High-Voltage Driver Applications

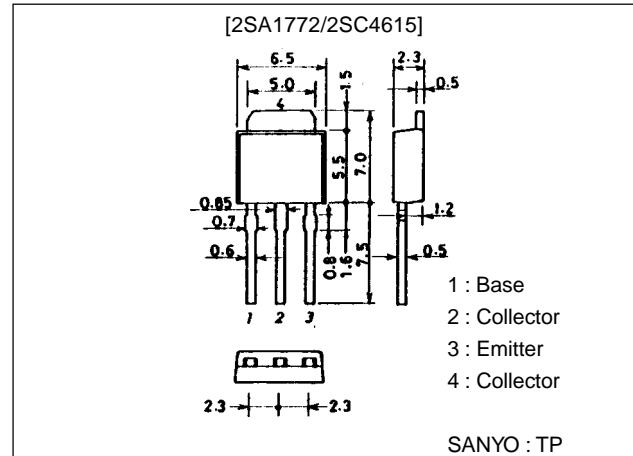
### Features

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

### Package Dimensions

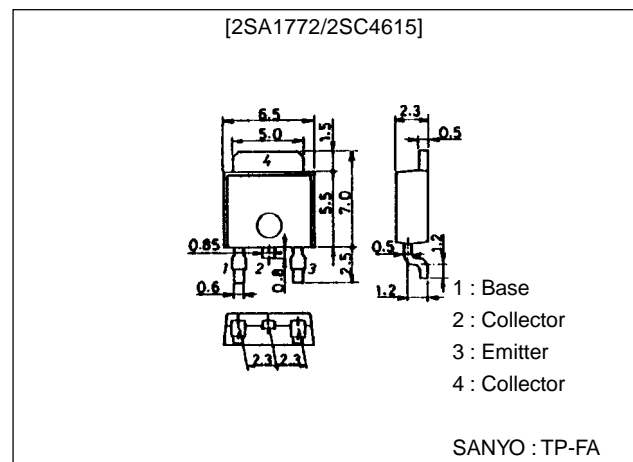
unit:mm

2045B



unit:mm

2044B



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( ) : 2SA1772

## 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	$I_C$		(-1)	A
Collector Current (Pulse)	$I_{CP}$		(-2)	A
Collector Dissipation	$P_C$		1	W
		$T_c=25^\circ\text{C}$	15	W
Junction Temperature	$T_j$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

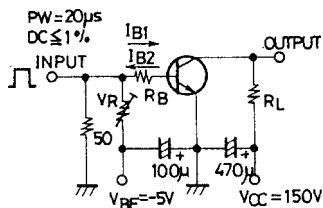
### Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=(-)300\text{V}, I_E=0$			(-1.0)	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)4\text{V}, I_C=0$			(-1.0)	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=(-)10\text{V}, I_C=(-)100\text{mA}$	40*		200*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)10\text{V}, I_C=(-)50\text{mA}$		(50)70		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=(-)30\text{V}, f=1\text{MHz}$		(12)8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)200\text{mA}, I_B=(-)20\text{mA}$			(-1.0)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)200\text{mA}, I_B=(-)20\text{mA}$			(-1.0)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}, I_E=0$	(-400)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1\text{mA}, R_{BE}=\infty$	(-400)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu\text{A}, I_C=0$	(-5)			V
Turn-ON Time	$t_{on}$	See specified Test Circuit		(0.25)		$\mu\text{s}$
				0.11		$\mu\text{s}$
Storage Time	$t_{stg}$	See specified Test Circuit		(3.0)		$\mu\text{s}$
				4.0		$\mu\text{s}$
Fall Time	$t_f$	See specified Test Circuit		(0.3)		$\mu\text{s}$
				0.65		$\mu\text{s}$

\* : The 2SA1772/2SC4615 are classified by 100mA  $h_{FE}$  as follows :

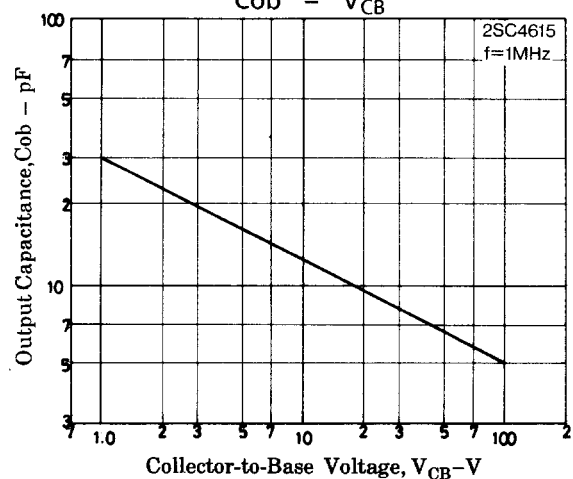
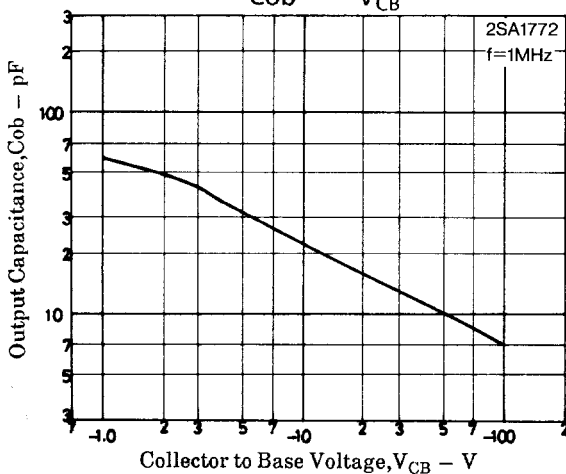
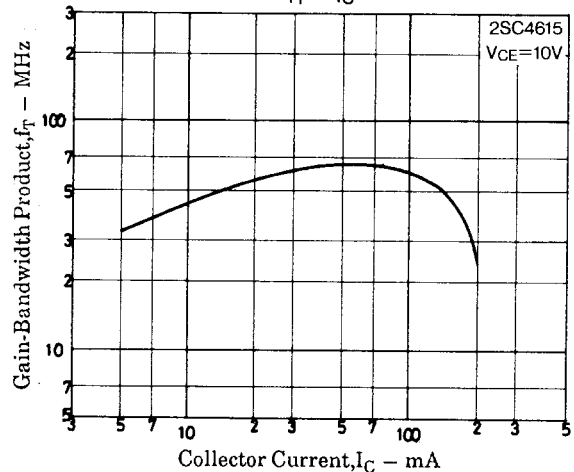
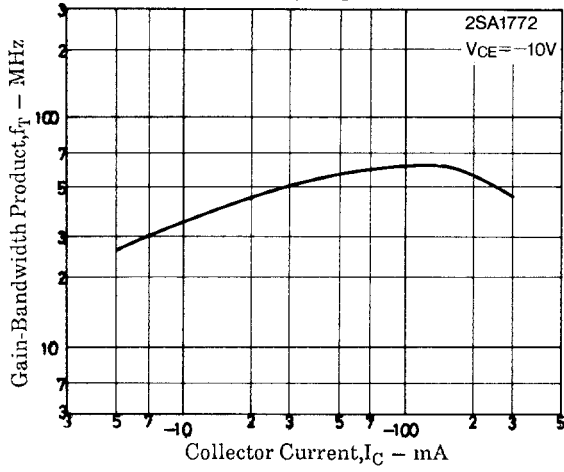
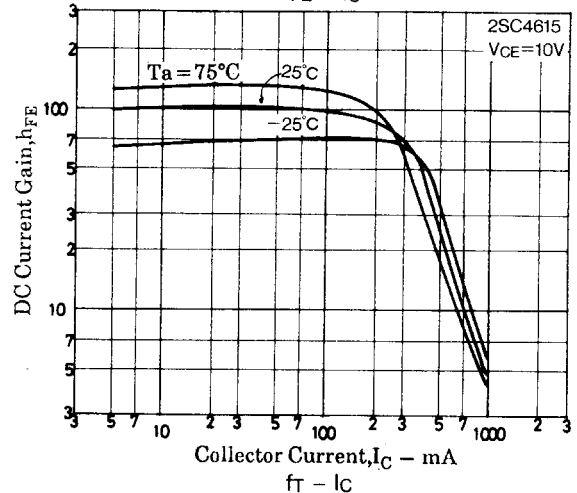
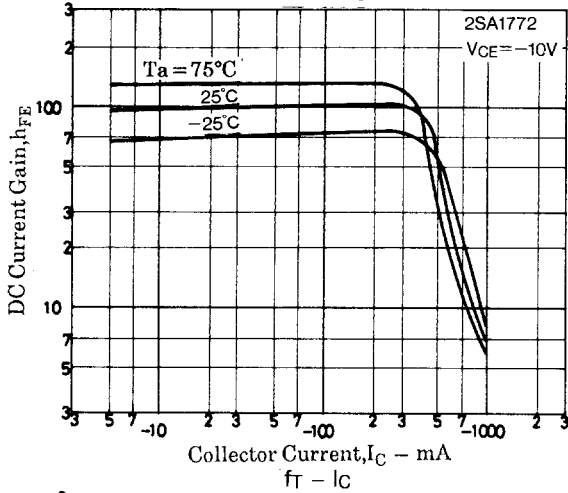
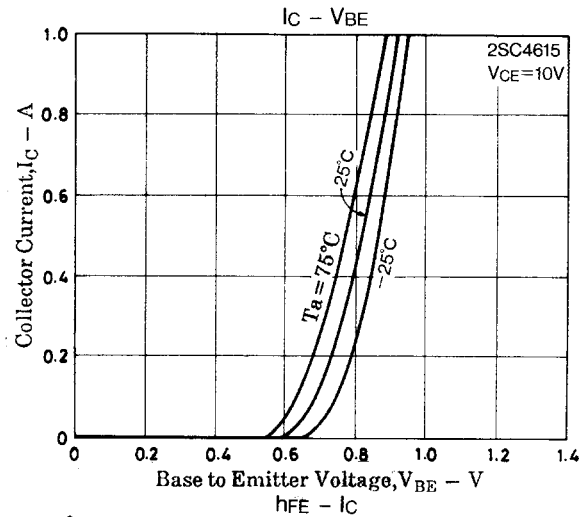
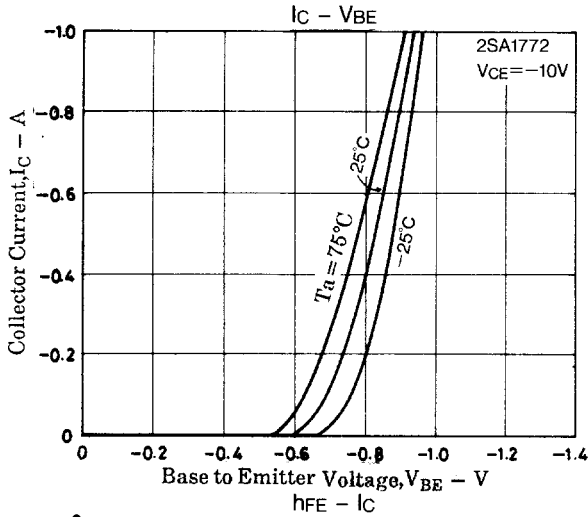
40 C 80	60 D 120	100 E 200
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### Switching Time Test Circuit

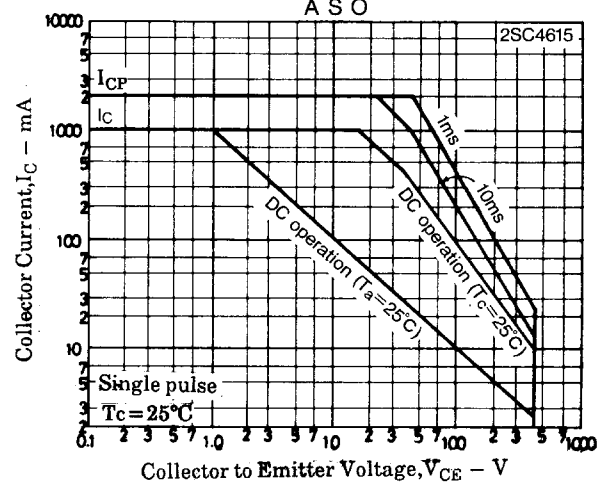
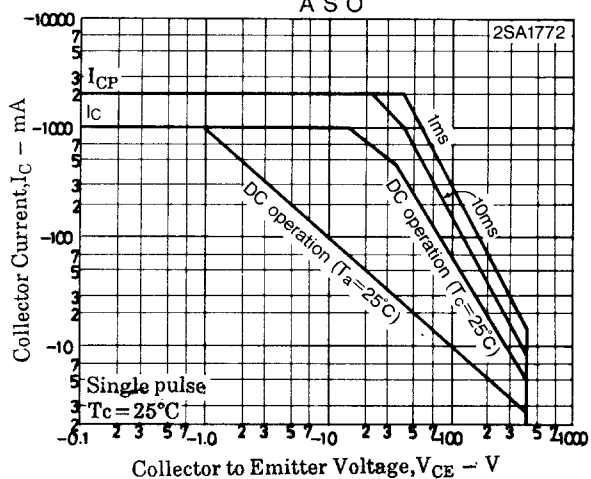
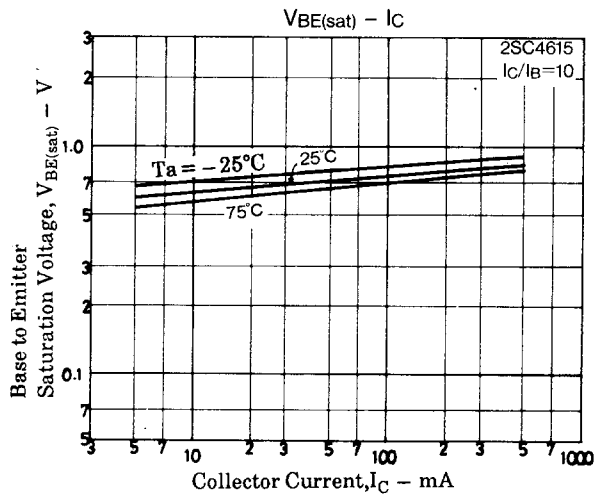
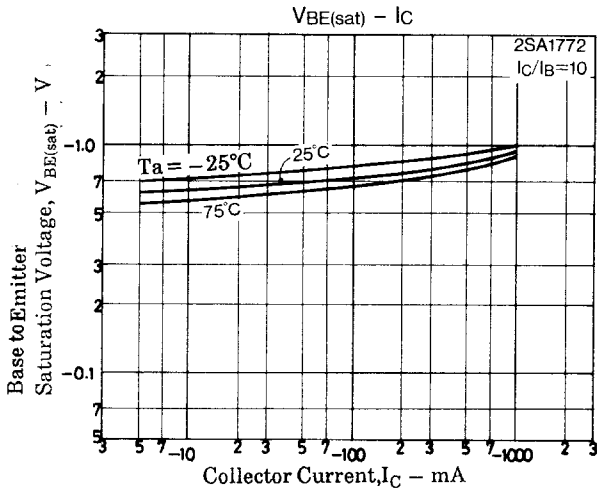
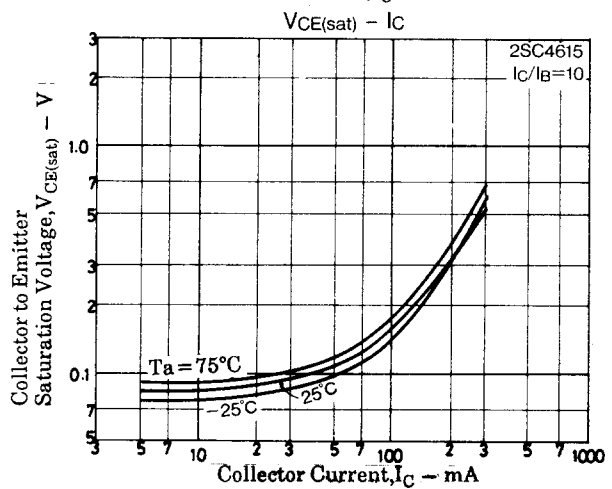
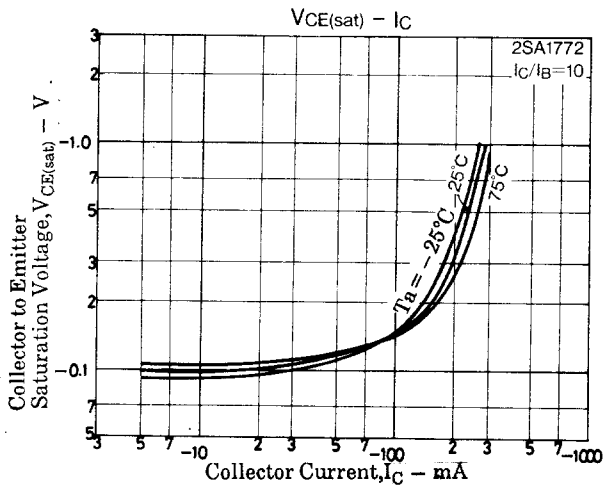
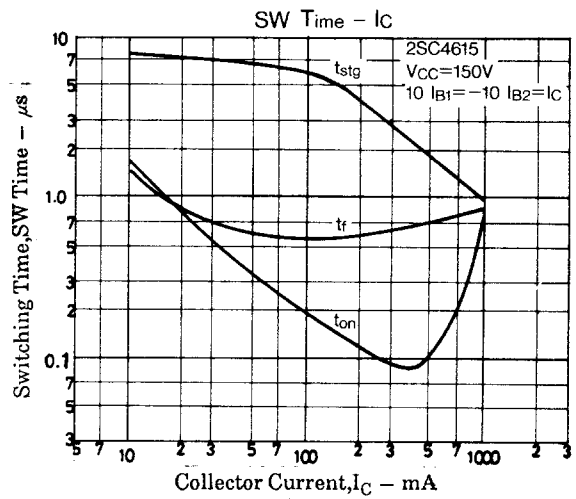
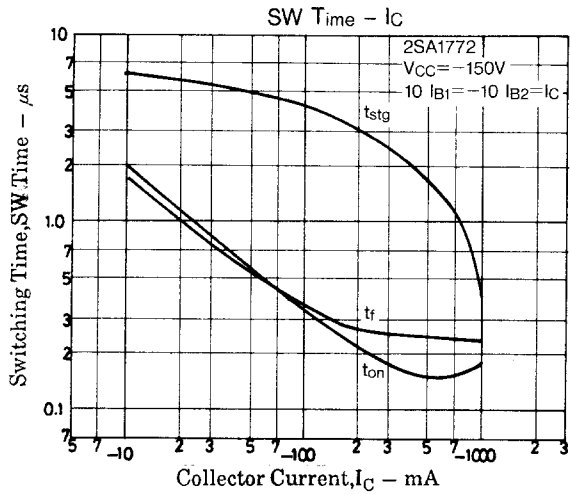


$10I_{B1} = -10I_{B2} = I_C = 200\text{mA}$   
 $R_L = 750\Omega, R_B = 50\Omega, \text{ at } I_C = 200\text{mA}$   
 (For PNP, the polarity is reversed.)  
 Unit (resistance :  $\Omega$ , capacitance : F)

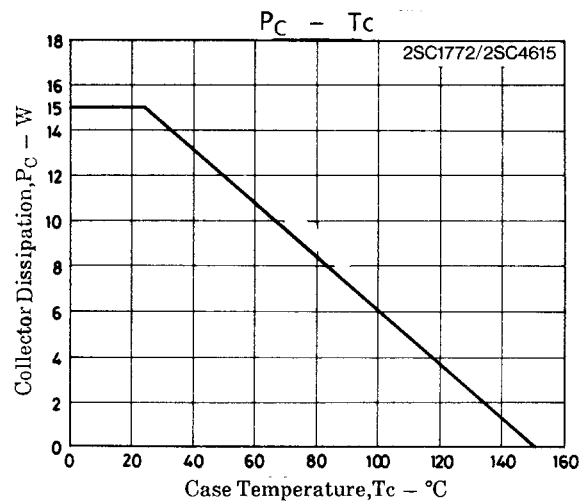
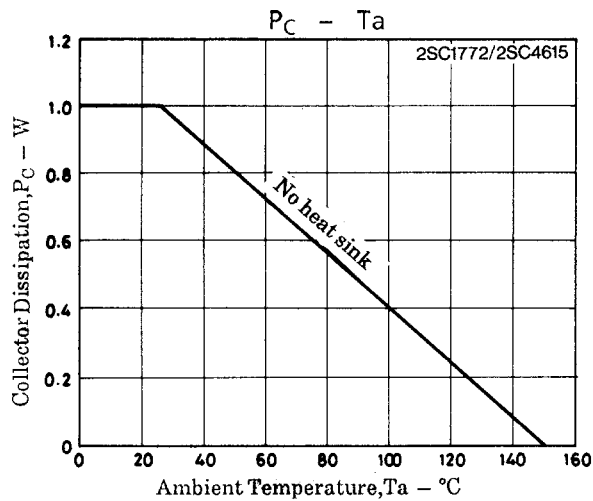
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