



## Driver Applications

### Applications

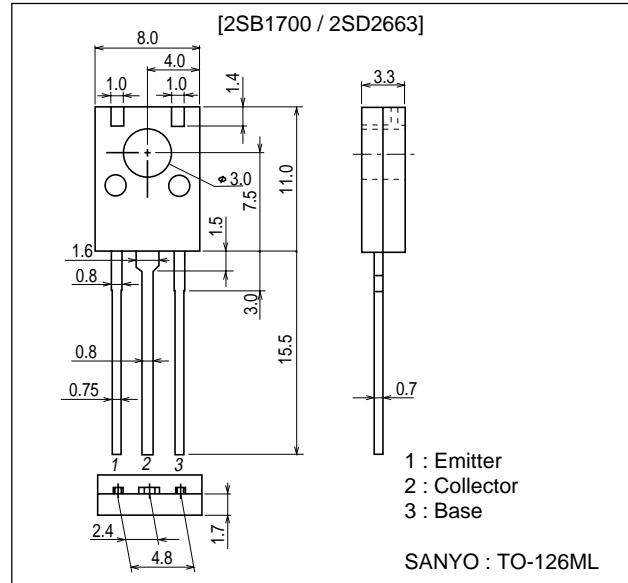
- Motor drivers, printer hammer drivers, relay drivers, voltage regulator control.

### Features

- High DC current gain.
- Large current capacity and wide ASO.
- Micaless package facilitating mounting.

### Package Dimensions

unit : mm  
2042B



( ) : 2SB1700

### Specifications

**Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		(-)110	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)	$I_{CP}$		(-)5	A
Collector Dissipation	$P_C$		1.5	W
		$T_c=25^\circ\text{C}$	10	W
Junction Temperature	$T_j$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** at  $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=(-)80\text{V}, I_E=0$			(-)0.1	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)5\text{V}, I_C=0$			(-)3.0	mA

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**SANYO Electric Co.,Ltd. Semiconductor Company**

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

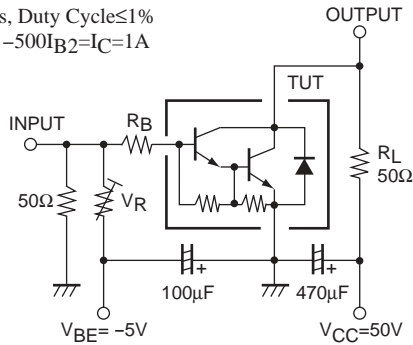
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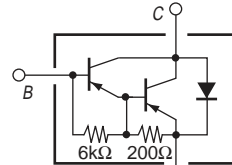
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	$h_{FE}$	$V_{CE}=(-)3V, I_C=(-)1.5A$	1500	4000		
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)5V, I_C=(-)1.5A$		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)1.5A, I_B=(-)3mA$		(-1.0)0.9	(-1.5)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)1.5A, I_B=(-)3mA$			(-2.0)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)5mA, I_E=0$	(-)110			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)50mA, R_{BE}=\infty$	(-)100			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		(0.8)0.7		$\mu s$
Storage Time	$t_{stg}$	See specified Test Circuit.		(2.4)5.0		$\mu s$
Fall Time	$t_f$	See specified Test Circuit.		1.2		$\mu s$

### Specified Test Circuit (For PNP, the polarity is reversed.)

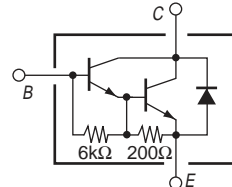
PW=50 $\mu s$ , Duty Cycle $\leq$ 1%  
500I<sub>B1</sub> = -500I<sub>B2</sub> = I<sub>C</sub> = 1A



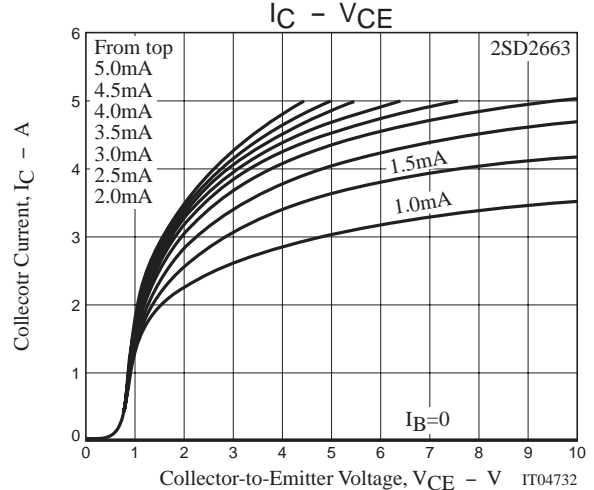
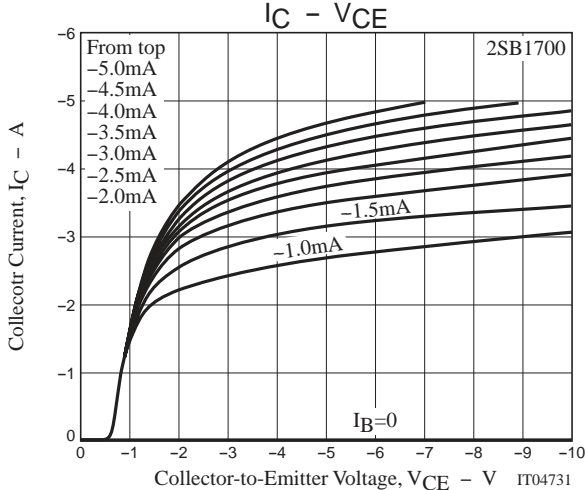
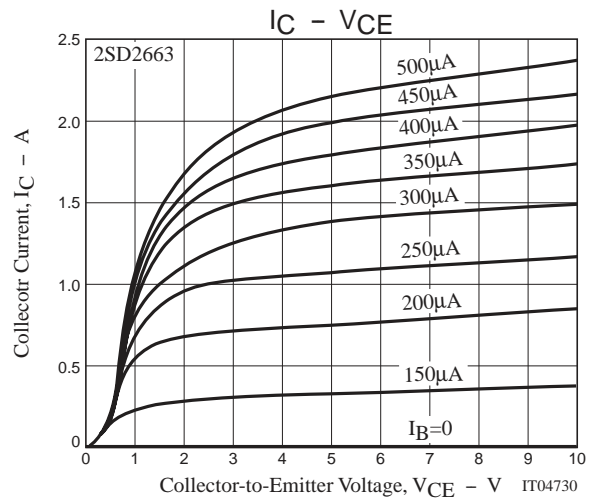
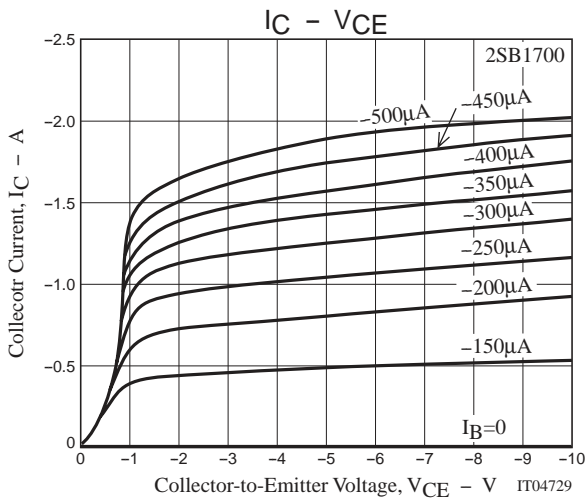
### Electrical Connection



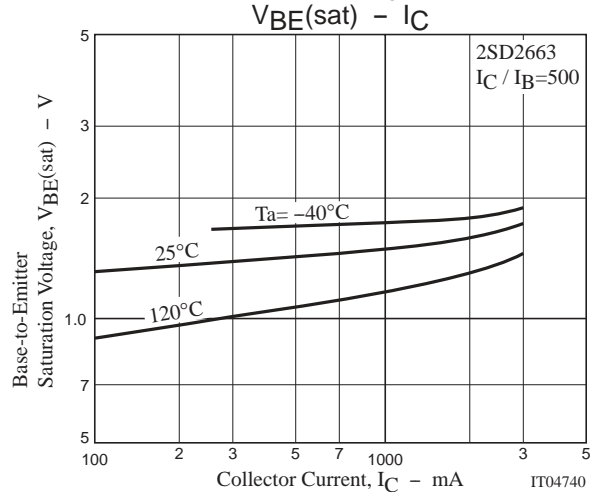
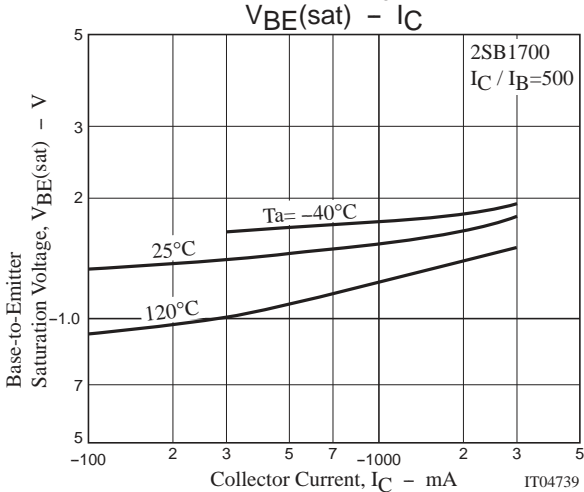
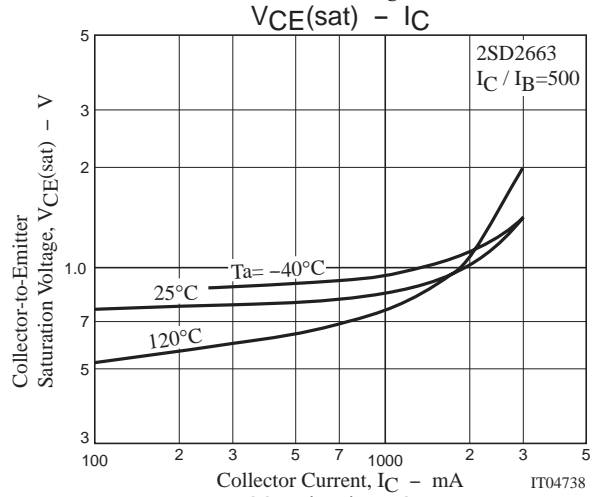
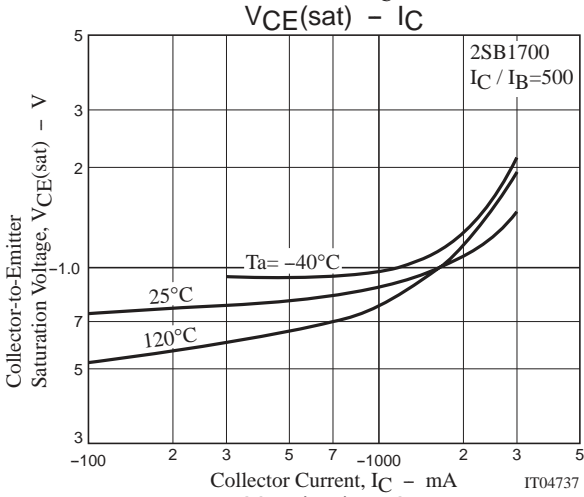
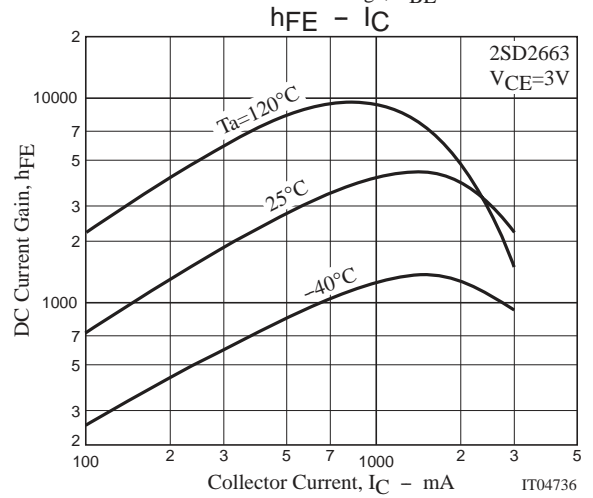
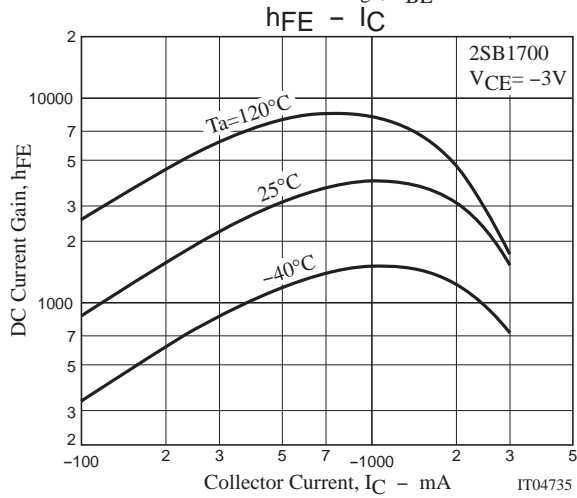
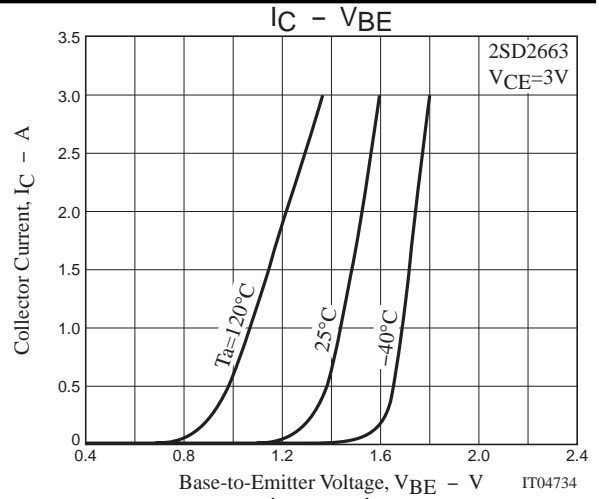
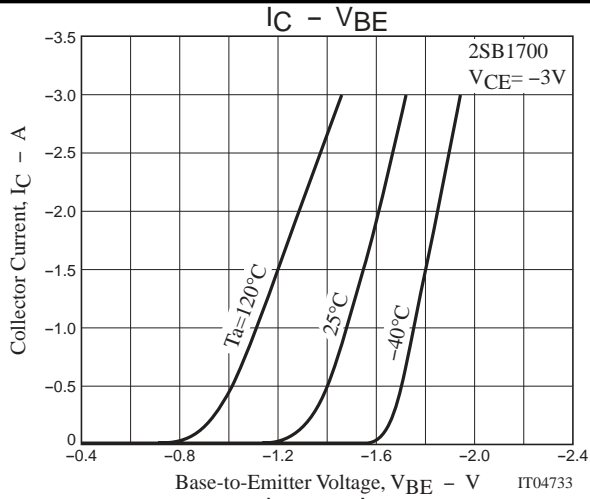
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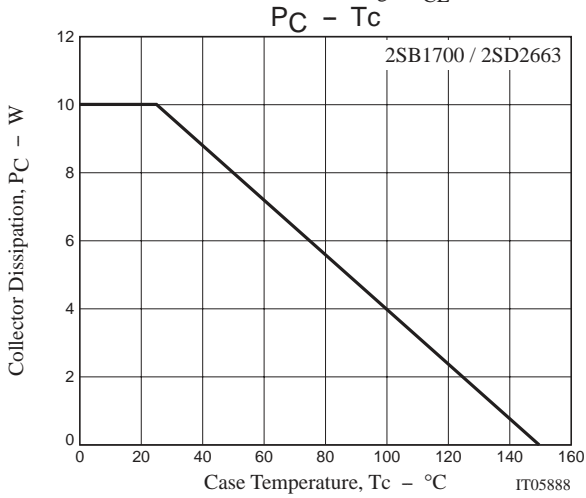
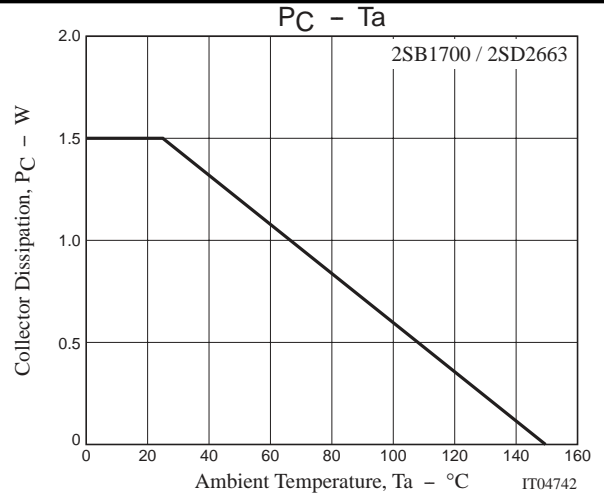
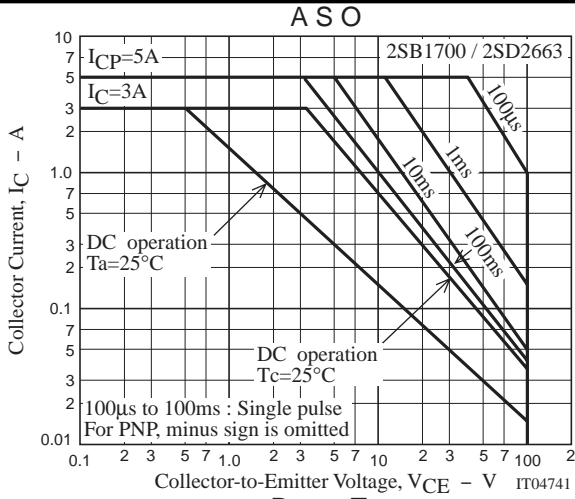
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