



No.3520

2SA1784/2SC4644

PNP Epitaxial Planar Silicon Transistor
NPN Triple Diffused Planar Silicon Transistor

High Voltage Driver Applications

Features

- Adoption of MBIT process
- High breakdown voltage ($V_{CEO} \geq 400V$)
- Excellent linearity of h_{FE}

() : 2SA1784

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

			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	(-)	200 mA
Collector Current(Pulse)	I_{CP}	(-)	400 mA
Collector Dissipation	P_C		1 W
Junction Temperature	T_j		150 $^\circ C$
Storage Temperature	T_{stg}		-55 to +150 $^\circ C$

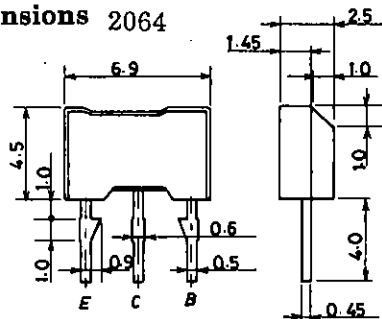
Electrical Characteristics at $T_a = 25^\circ C$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)300V, I_E = 0$			(-)	0.1 μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4V, I_C = 0$			(-)	0.1 μA
DC Current Gain	h_{FE}	$V_{CE} = (-)10V, I_C = (-)50mA$	60*		200*	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)30V, I_C = (-)10mA$		70		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)50mA, I_B = (-)5mA$		(-)	0.6	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)50mA, I_B = (-)5mA$		(-)	1.0	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)	400		V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)	400		V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)	5		V
Output Capacitance	c_{ob}	$V_{CB} = (-)30V, f = 1MHz$		(5)	4	pF
Reverse Transfer Capacitance	c_{re}	$V_{CB} = (-)30V, f = 1MHz$		(4)	3	pF
Turn-ON Time	t_{on}	See specified Test Circuit.		0.25		μs
Turn-OFF Time	t_{off}	See specified Test Circuit.		5.0		μs

*: The 2SA1784/2SC4644 are classified by 50mA h_{FE} as follows:

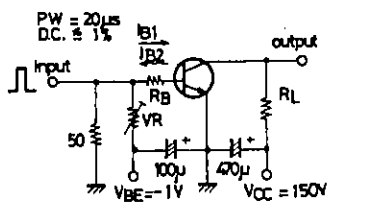
60 D 120	100 E 200
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Package Dimensions 2064 (unit: mm)



E: Emitter
C: Collector
B: Base
SANYO: NMP

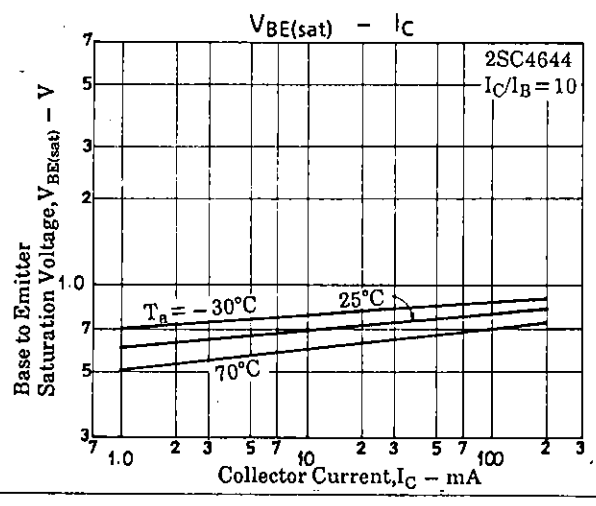
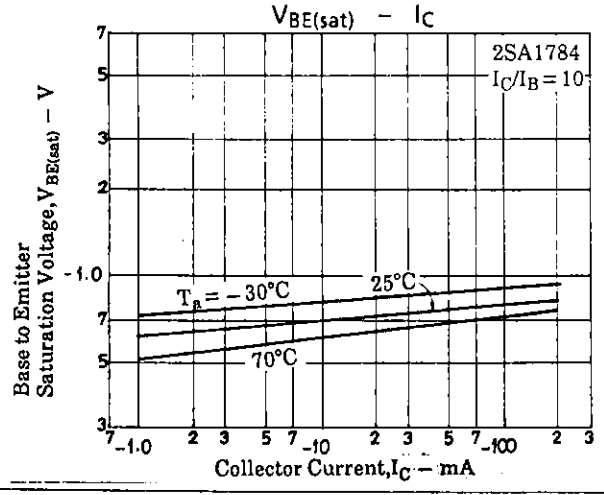
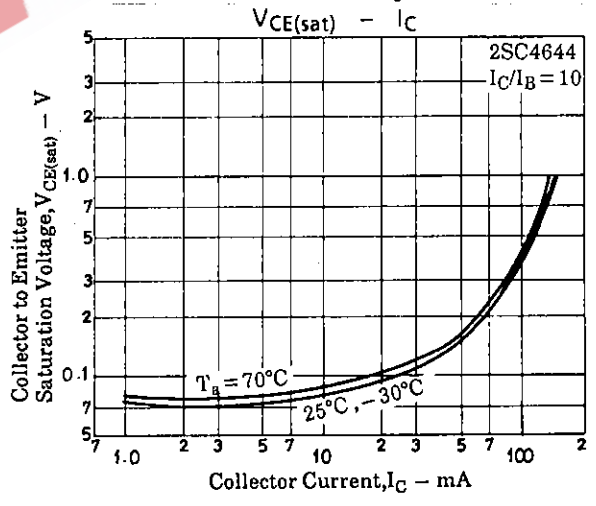
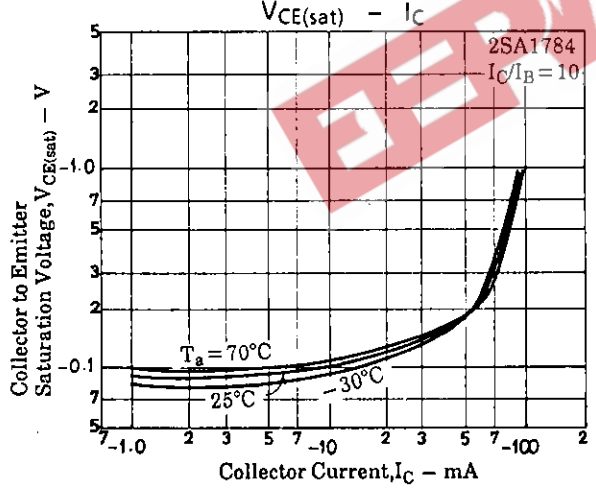
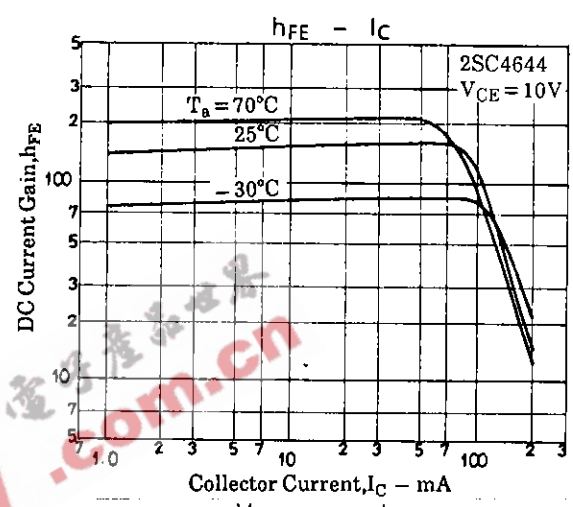
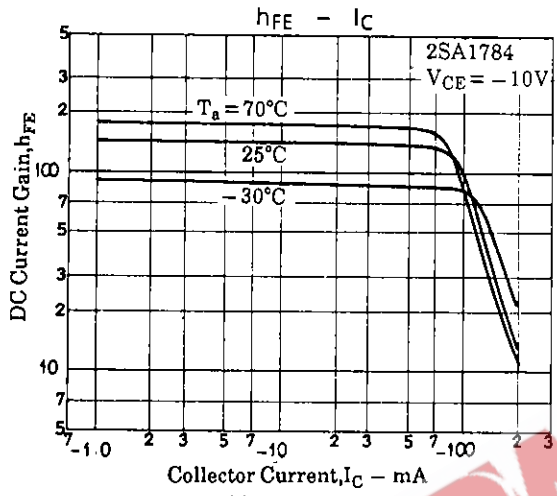
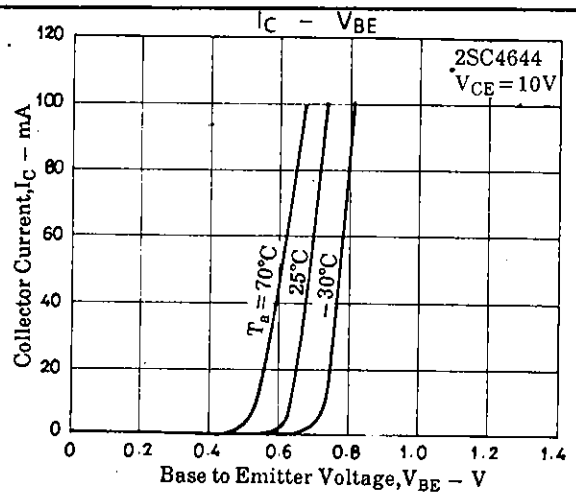
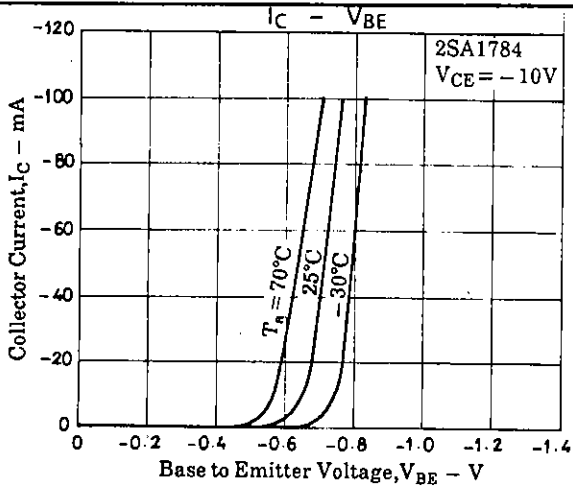
Switching Time Test Circuit



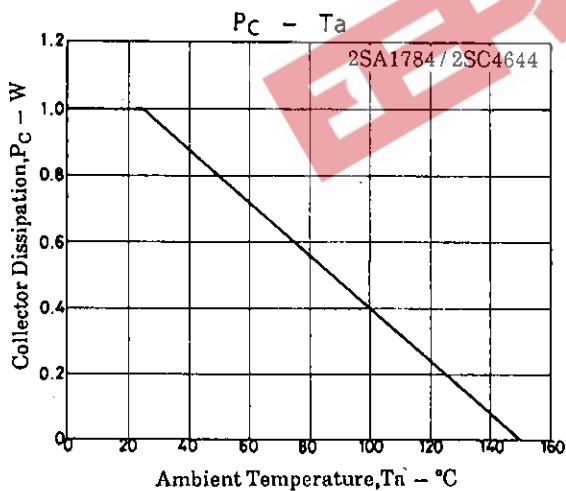
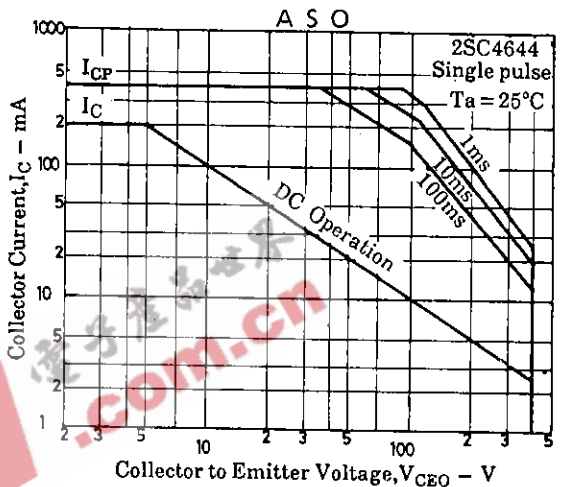
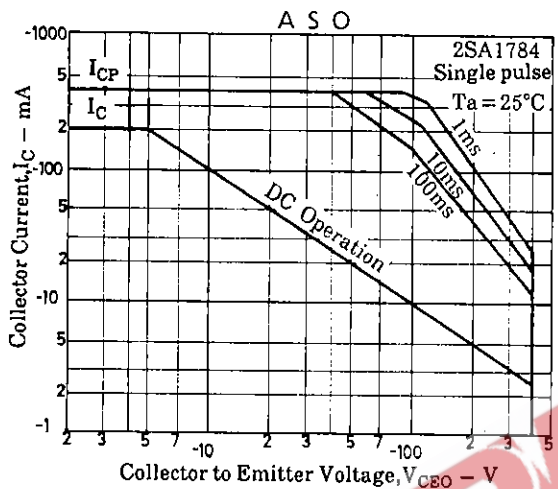
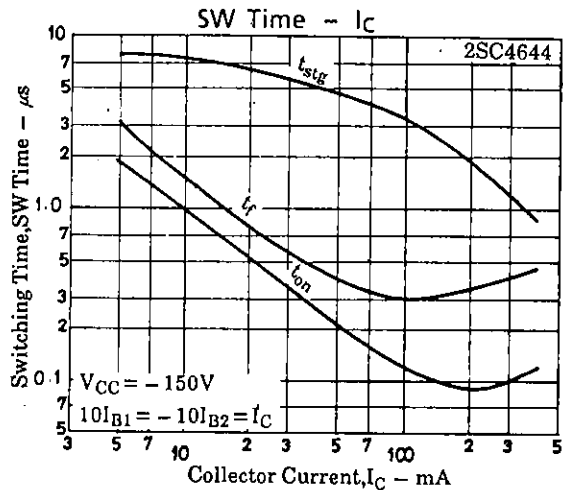
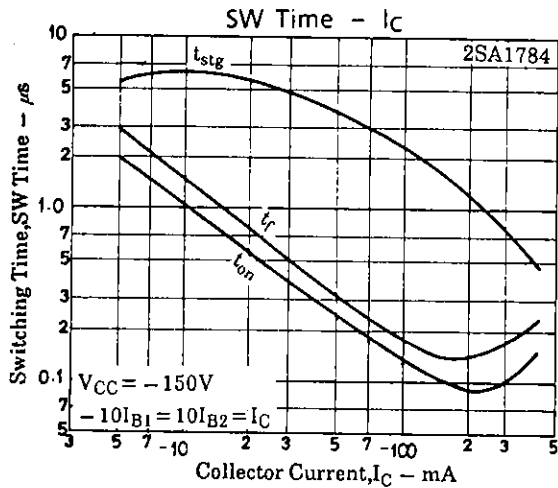
$10I_{B1} = -10I_{B2} = I_C = 50mA$
 $R_L = 3k\Omega, R_B = 200\Omega, \text{ at } I_C = 50mA$
PNPの場合 極性逆

Unit(Resistance : Ω , Capacitance : F)

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