



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	$^\circ C$

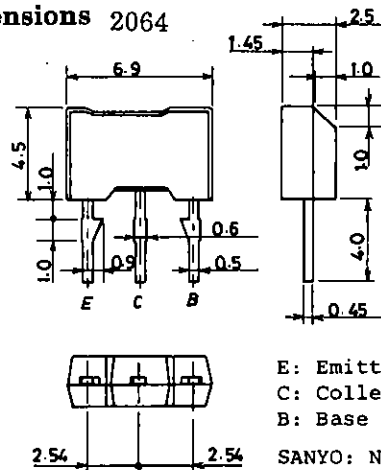
### Electrical Characteristics at $T_a = 25^\circ C$

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)300V, I_E = 0$			(- )0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4V, I_C = 0$			(- )0.1	$\mu A$
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	$V_{CE(sat)}$	$I_C = (-)50mA, I_B = (-)5mA$		(- )0.8	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		$\mu s$
Turn-OFF Time	$t_{off}$	See specified Test Circuit.		5.0		$\mu s$

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

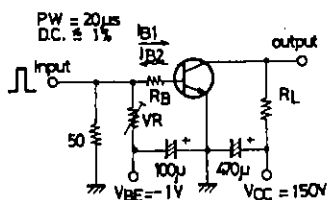
60 D 120	100 E 200
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### Package Dimensions 2064 (unit: mm)



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

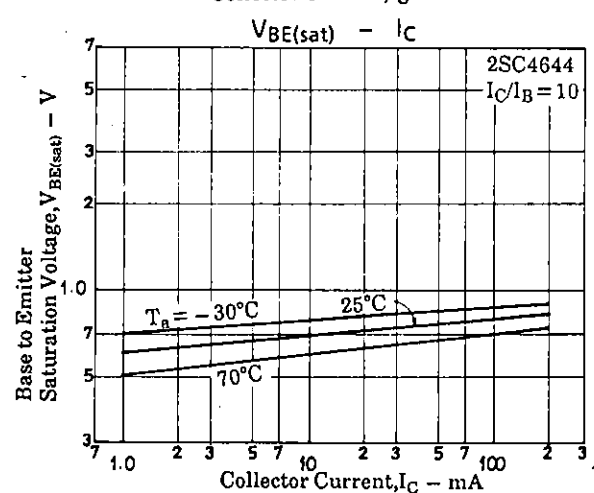
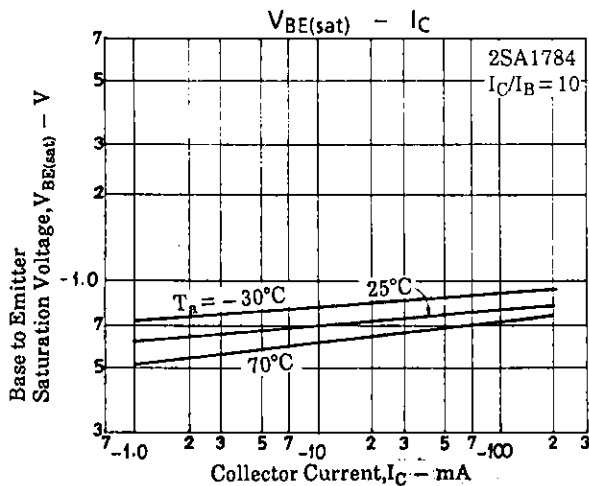
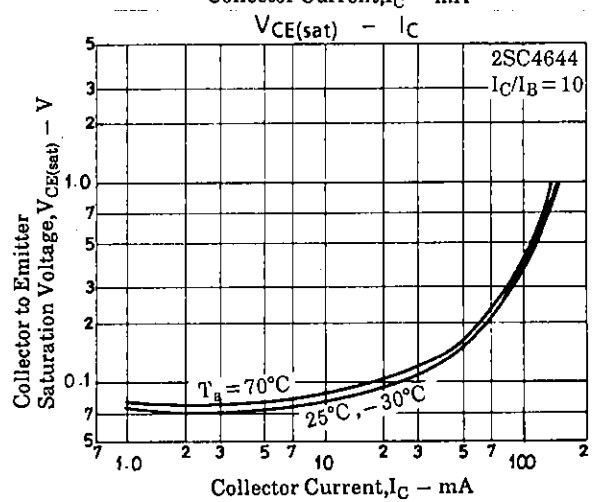
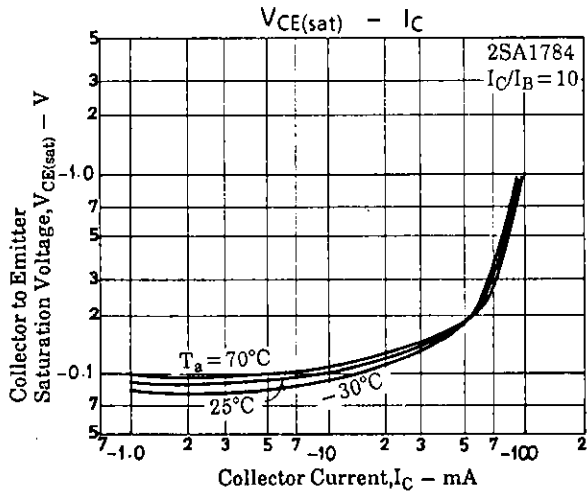
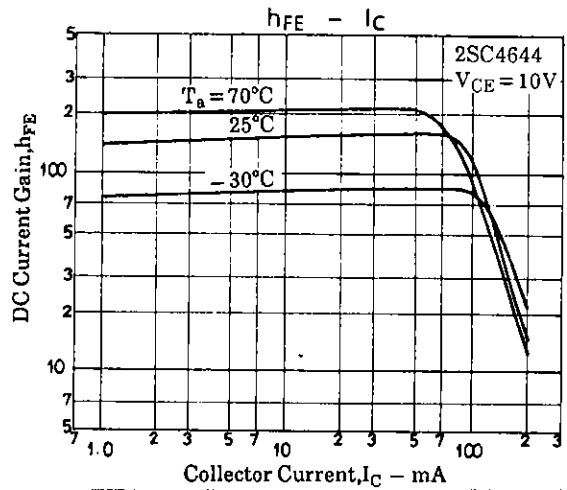
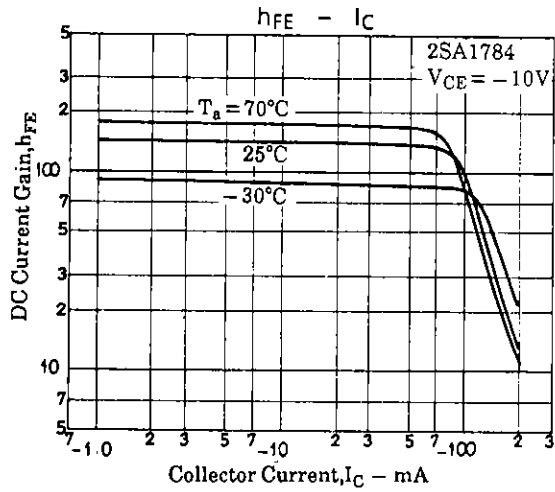
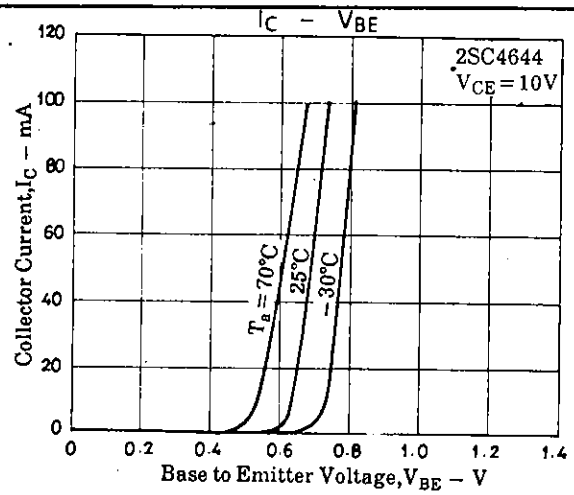
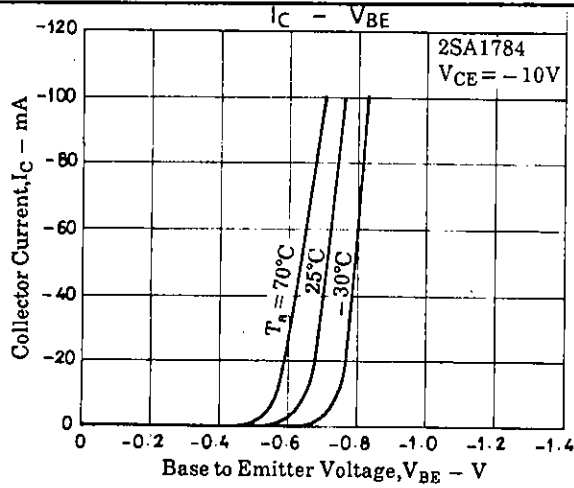
### Switching Time Test Circuit

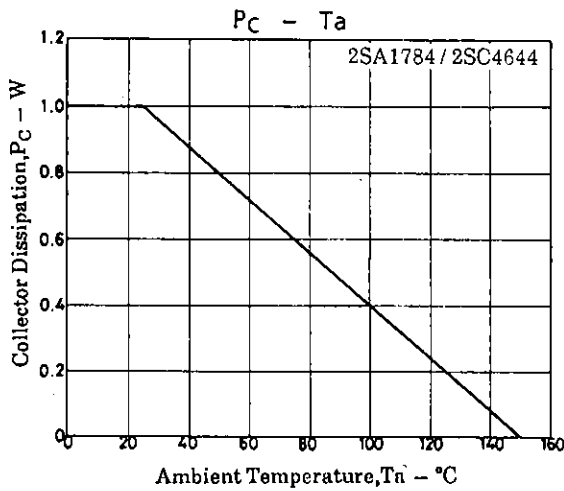
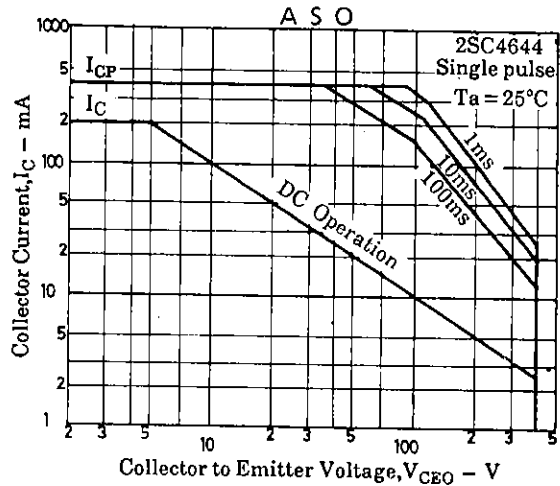
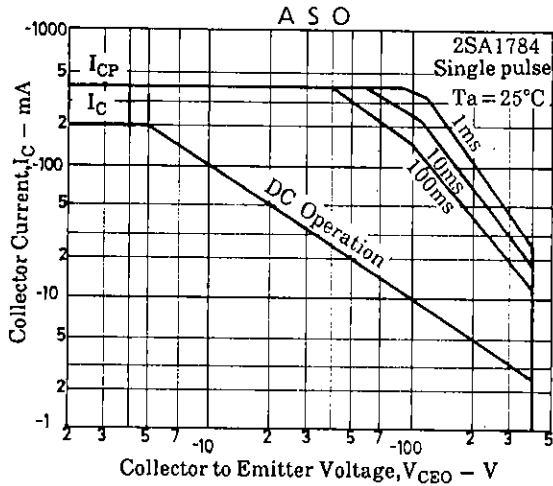
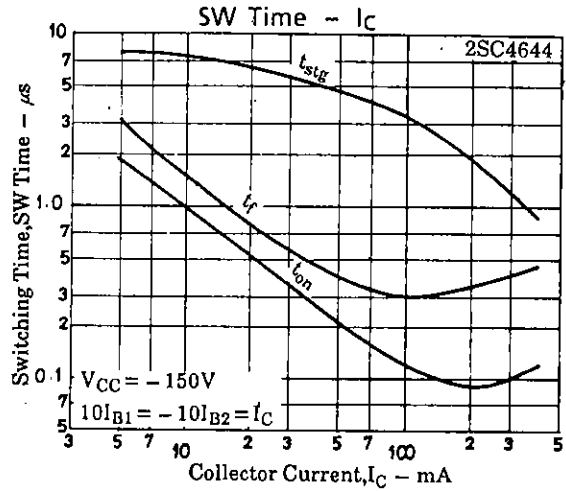
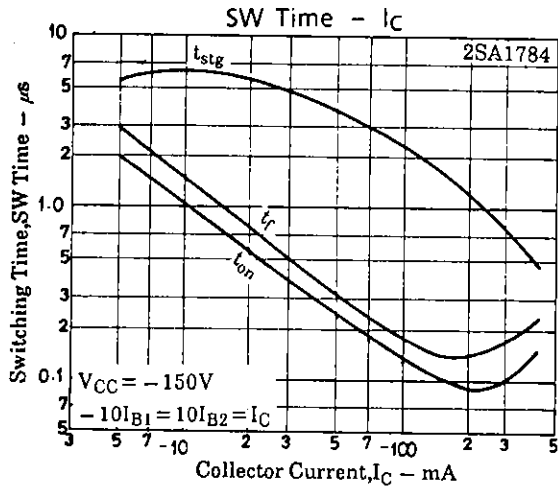


$10I_{B1} = -10I_{B2} = I_C = 50mA$   
 $R_L = 3k\Omega, R_B = 200\Omega, \text{ at } I_C = 50mA$   
PNPの場合 極性逆

Unit(Resistance :  $\Omega$ , Capacitance : F)

2SA1784/2SC4644





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