

**2SA1854****20V/5A Switching Applications****Applications**

- Strobes, power supplies, relay drivers, lamp drivers.

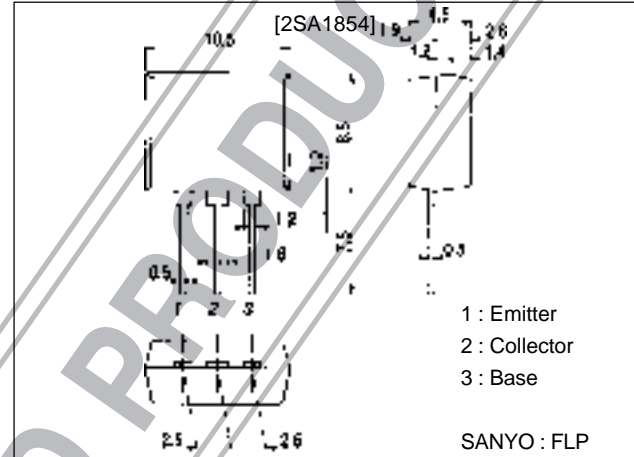
**Features**

- Adoption of FBET and MBIT processes.
- Large allowable collector dissipation.
- Low saturation voltage.
- Large current capacity.
- Fast switching speed.
- Usage of radial taping to meet automatic mounting.

**Package Dimensions**

unit:mm

2084B



1 : Emitter  
2 : Collector  
3 : Base

SANYO : FLP

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		-25	V
Collector-to-Emitter Voltage	$V_{CEO}$		-20	V
Emitter-to-Base Voltage	$V_{EBO}$		-5	V
Collector Current	$I_C$		-5	A
Collector Current (Pulse)	$I_{CP}$		-8	A
Base Current	$I_B$		-0.5	A
Collector Dissipation	$P_C$		1.5	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	$I_{CBO}$	$V_{CB}=-20\text{V}, I_E=0$			-500	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-4\text{V}, I_C=0$			-500	nA
DC Current Gain	$h_{FE1}$	$V_{CE}=-2\text{V}, I_C=-500\text{mA}$	100*		400*	
	$h_{FE2}$	$V_{CE}=-2\text{V}, I_C=-4\text{A}$	60			
Gain-Bandwidth Product	$f_T$	$V_{CE}=-5\text{V}, I_C=-200\text{mA}$		320		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10\text{V}, f=1\text{MHz}$		60		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-3\text{mA}, I_B=-60\text{mA}$	-250		-500	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-3\text{mA}, I_B=-60\text{mA}$	-1.0		-1.3	V

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91098HA (KT)/5132MH (KOTO) No.4133-1/4

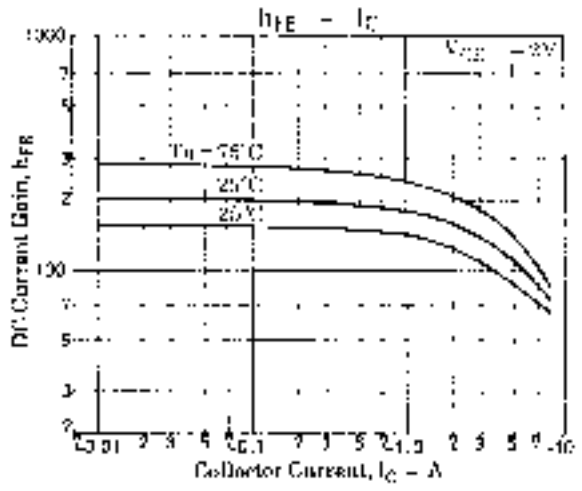
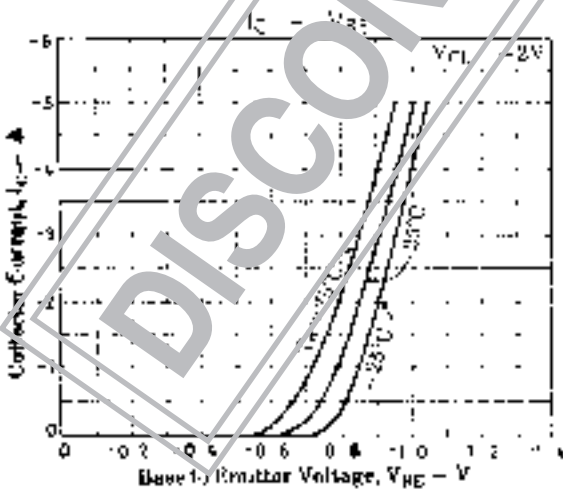
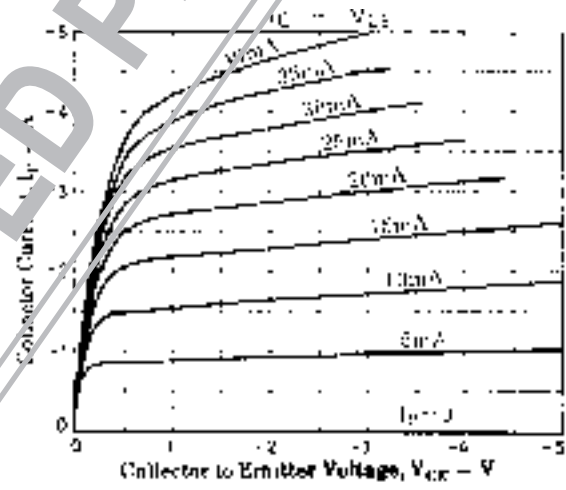
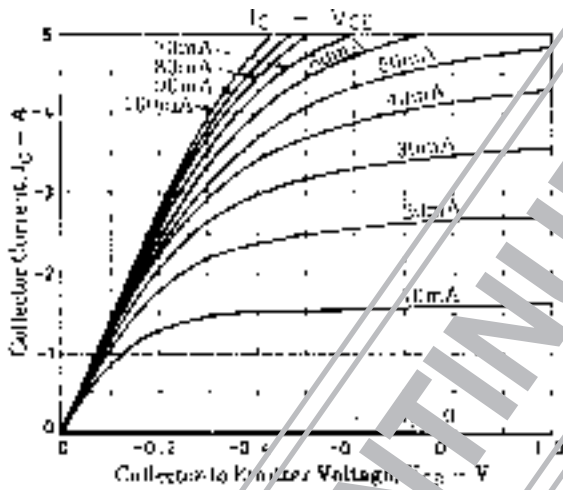
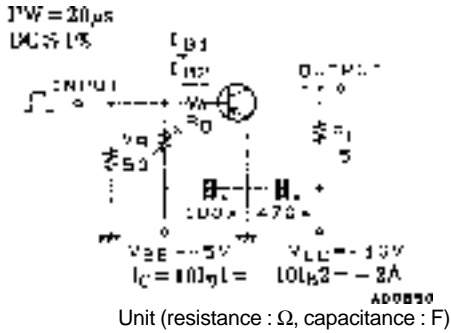
# 2SA1854

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-25			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-20			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		40		ns
Storage Time	$t_{stg}$	See specified Test Circuit		200		ns
Fall Time	$t_f$	See specified Test Circuit		10		ns

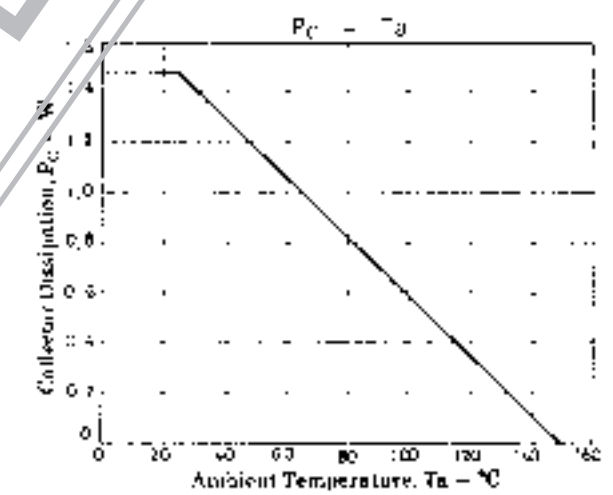
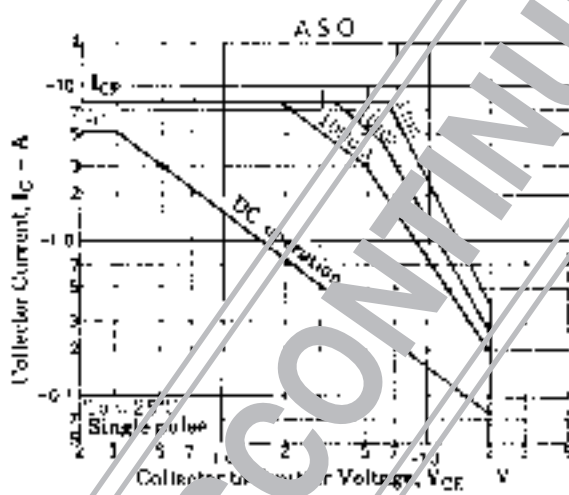
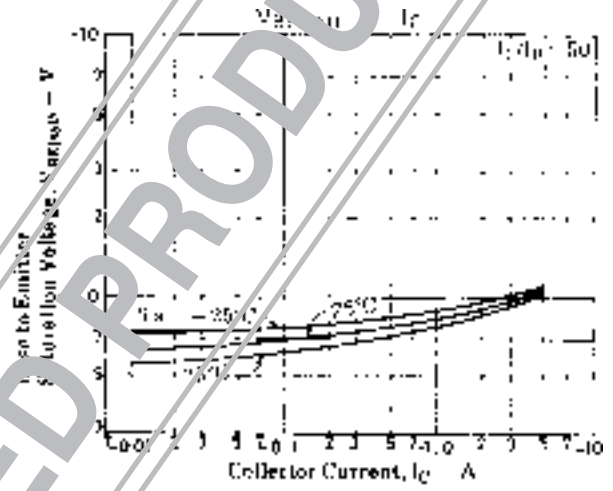
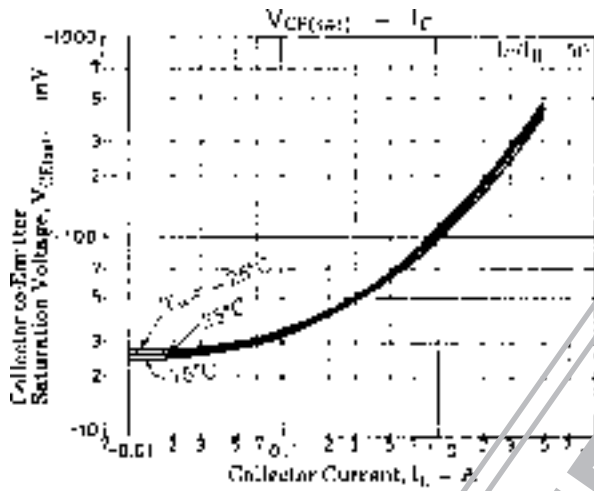
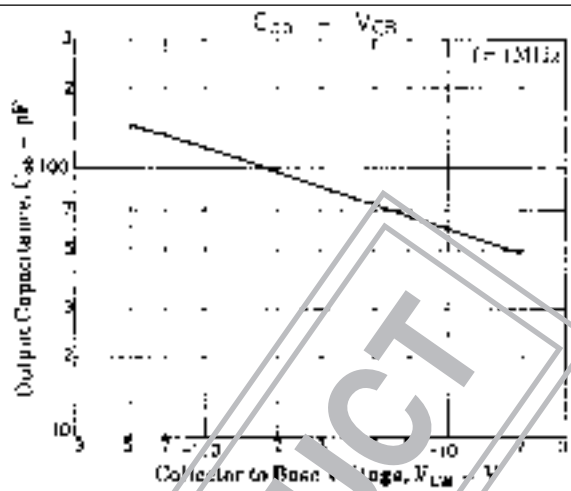
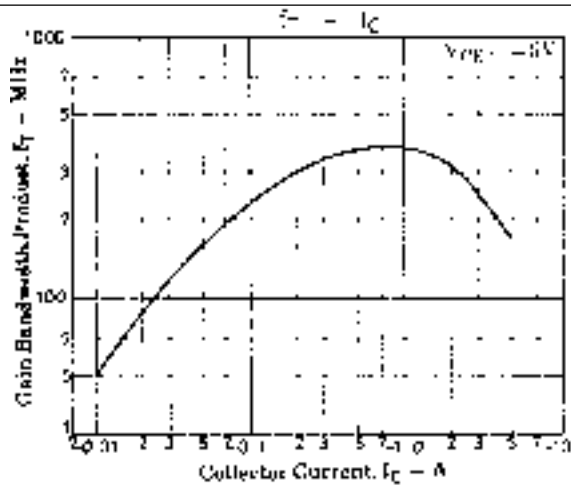
\* : The 2SA1854 is classified by 500mA  $h_{FE}$  as follows :

100 R	200	140 S	280	200 T	400
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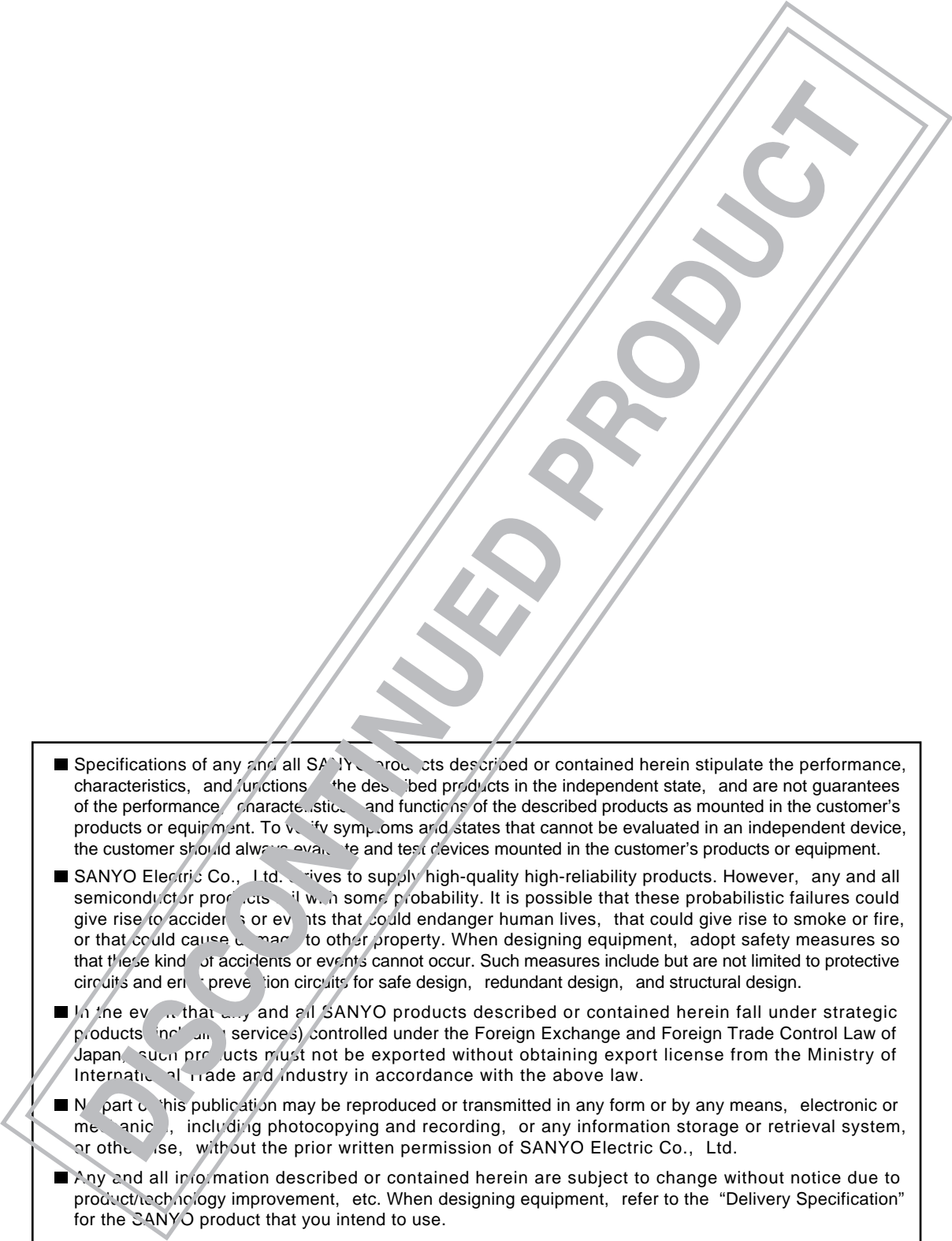
## Switching Time Test Circuit



2SA1854



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