

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

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

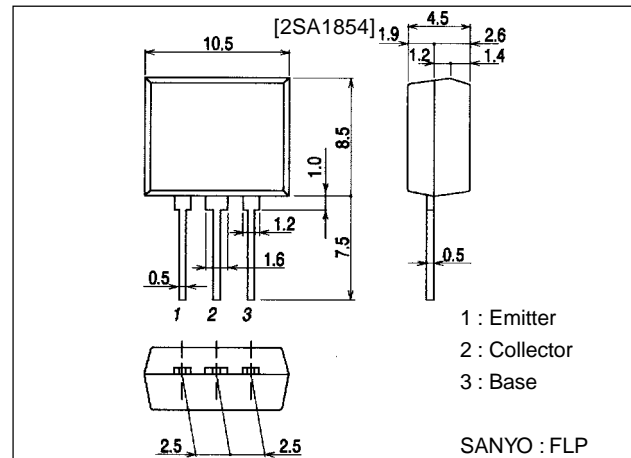
**Features**

- 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

**Specifications****Absolute Maximum Ratings at Ta = 25°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	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

**Electrical Characteristics at Ta = 25°C**

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

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**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

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

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

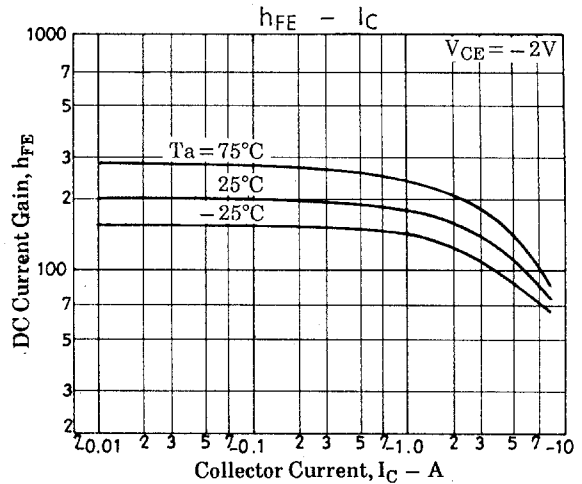
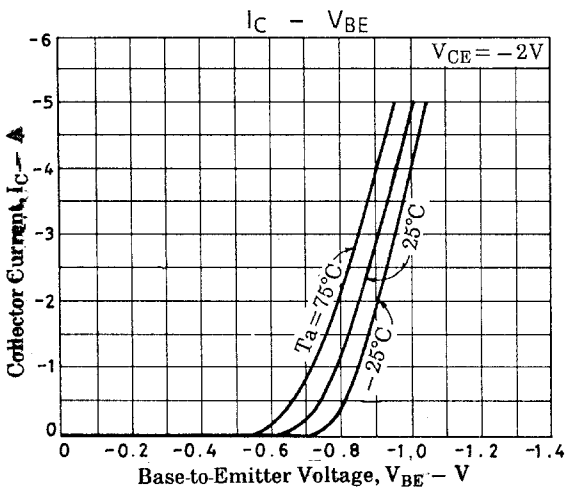
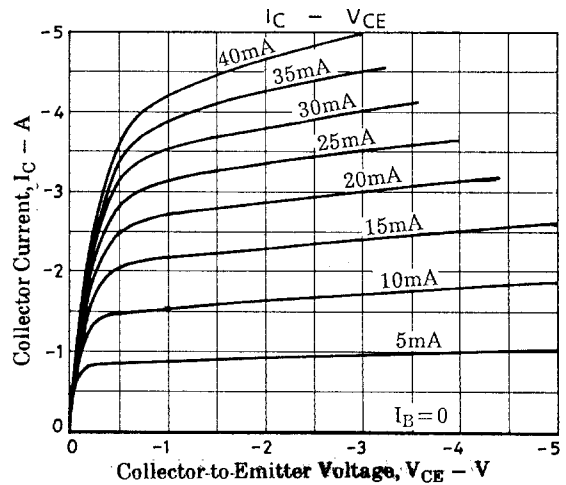
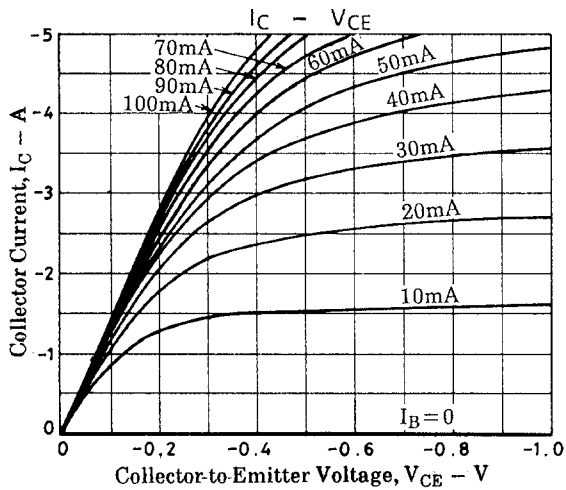
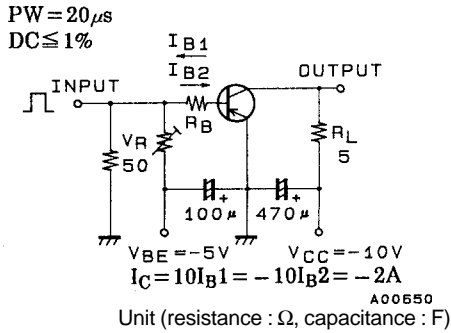
# 2SA1854

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

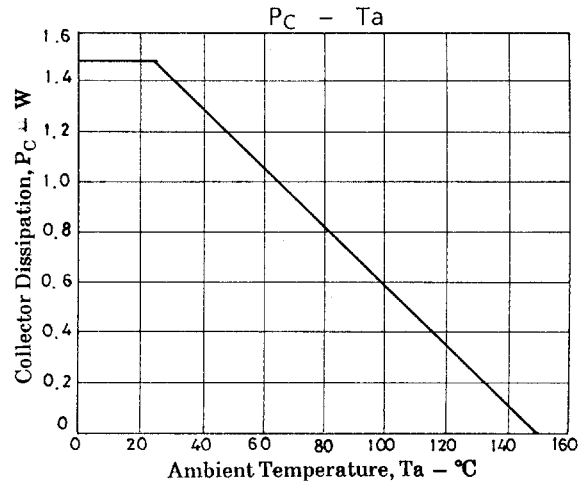
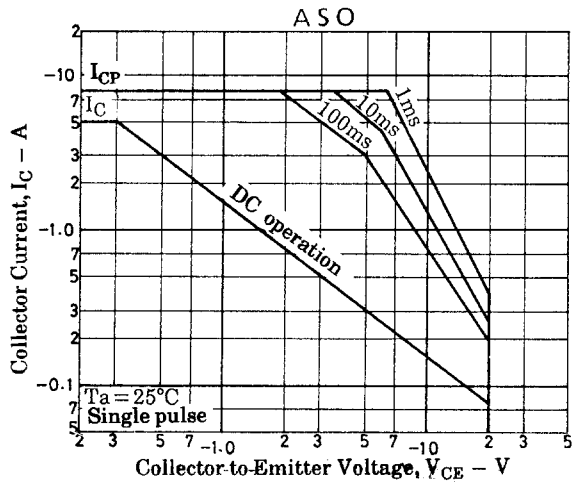
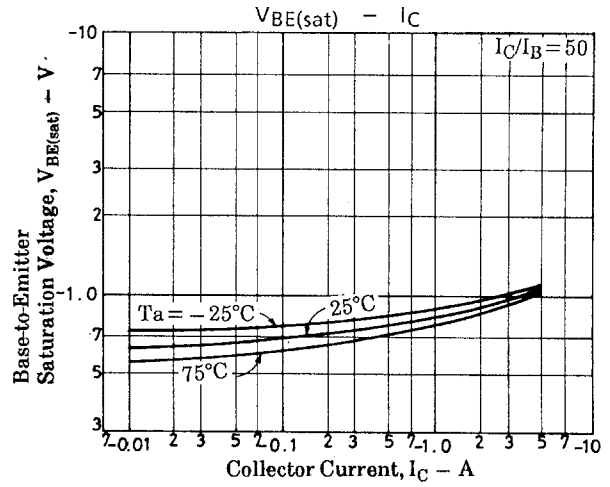
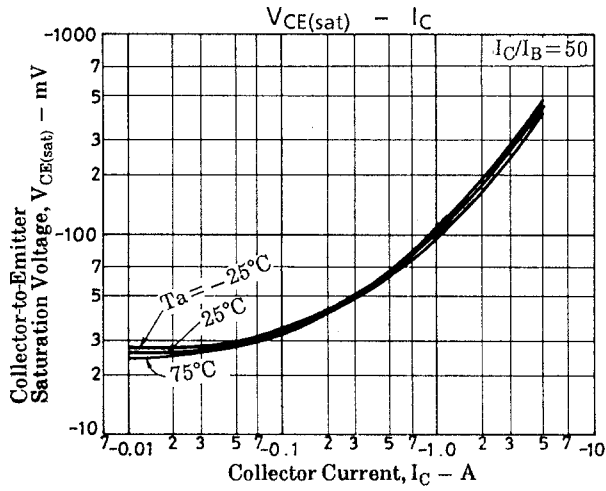
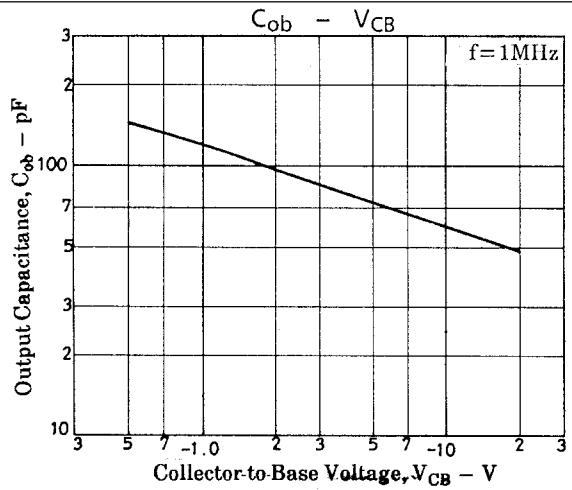
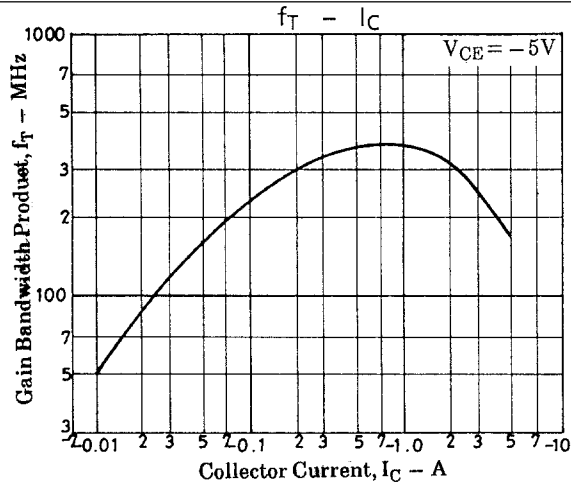
\* : The 2SA1854 is classified by 500mA  $h_{FE}$  as follows :

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



# 2SA1854



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