

**SANYO**

No.2926A

**2SA1641**

PNP Epitaxial Planar Silicon Transistor

High-Current Switching Applications

**Features**

- Adoption of FBET, MBIT processes.
- Low saturation voltage.
- Fast switching speed.
- Large current capacity.
- Small and slim package making it easy to make 2SA1641-used set smaller

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

			unit
Collector to Base Voltage	$V_{CBO}$	-25	V
Collector to Emitter Voltage	$V_{CEO}$	-20	V
Emitter to Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-8	A
Collector Current(Pulse)	$I_{CP}$	-12	A
Base Current	$I_B$	-1.5	A
Collector Dissipation	$P_C$	1	W
		15	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -20\text{V}, I_E = 0$			-1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -4\text{V}, I_C = 0$			-1	$\mu\text{A}$
DC Current Gain	$h_{FE}(1)$	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$	100※		400※	
	$h_{FE}(2)$	$V_{CE} = -2\text{V}, I_C = -6\text{A}$	60			
Gain-Bandwidth Product	$f_T$	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$		200		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = -5\text{A}, I_B = -250\text{mA}$	-220	-400		mV
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = -5\text{A}, I_B = -250\text{mA}$	-1	-1.3		V
Collector Output Capacitance	$c_{ob}$	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		85		pF
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-25			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-20			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0$	-5			V

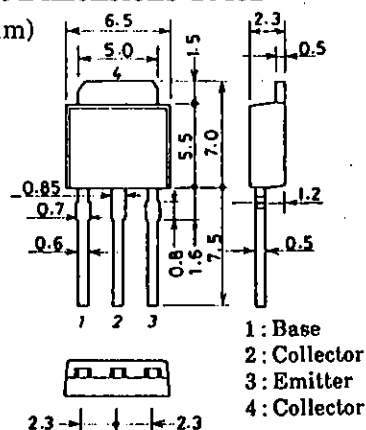
※: The 2SA1641 is classified by 500mA  $h_{FE}$  as follows:

100	R	200	140	S	280	200	T	400
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**Package Dimensions 2045B**

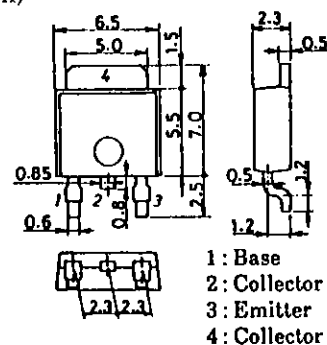
(unit: mm)



SANYO: TP

**Package Dimensions 2044B**

(unit: mm)



SANYO: TP-FA

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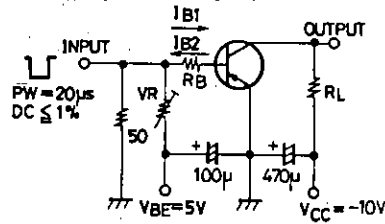
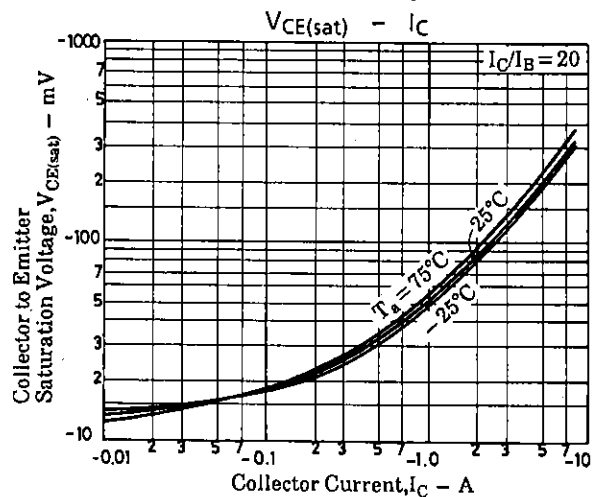
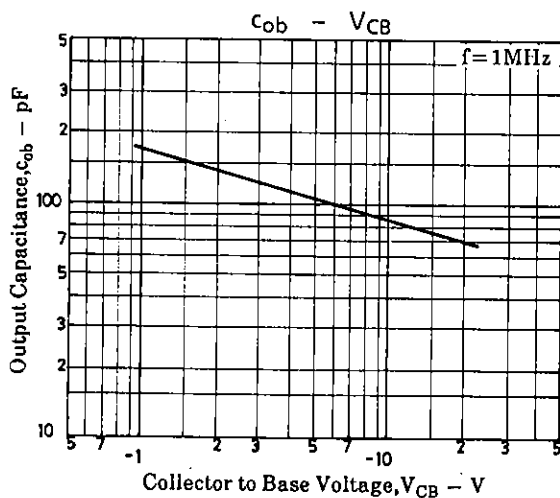
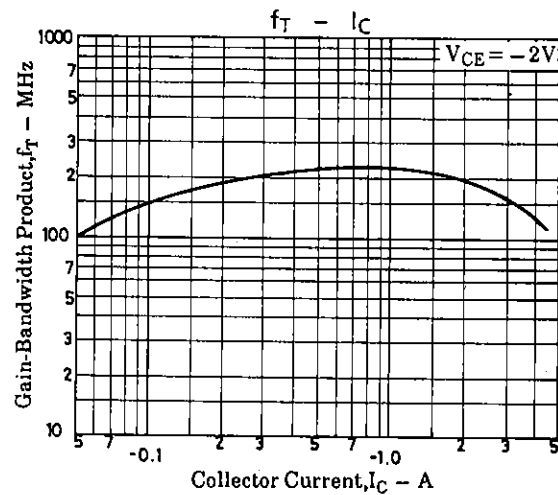
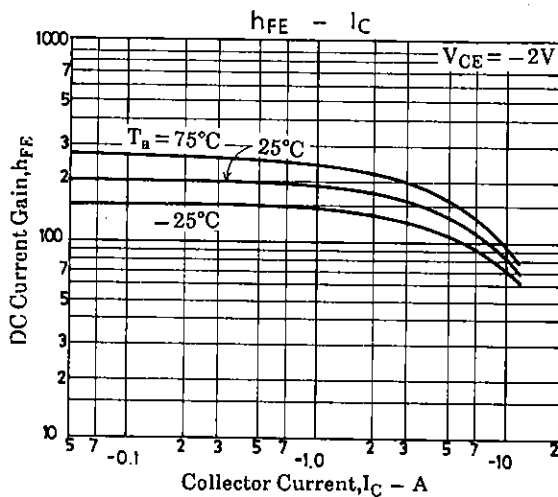
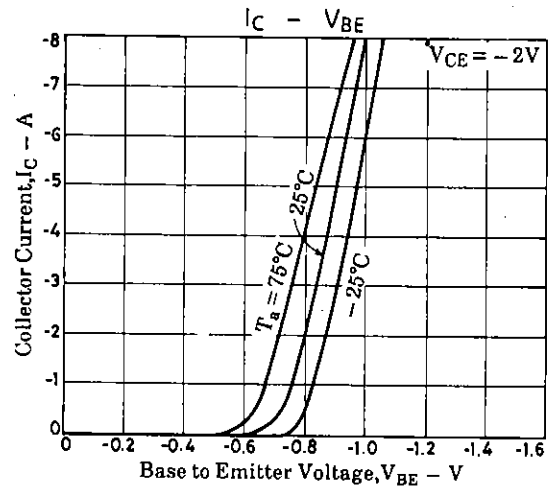
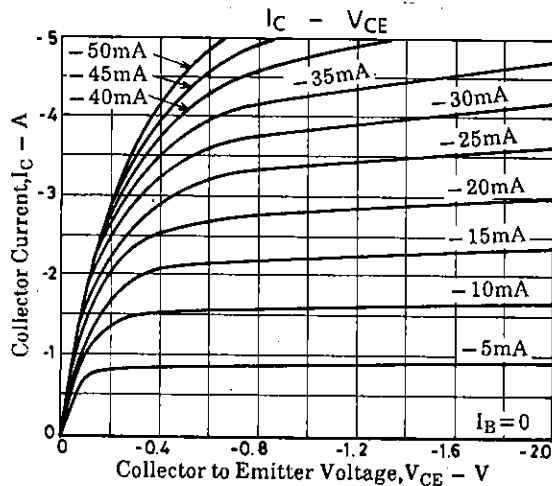
Turn-on Time  
Storage Time  
Fall Time

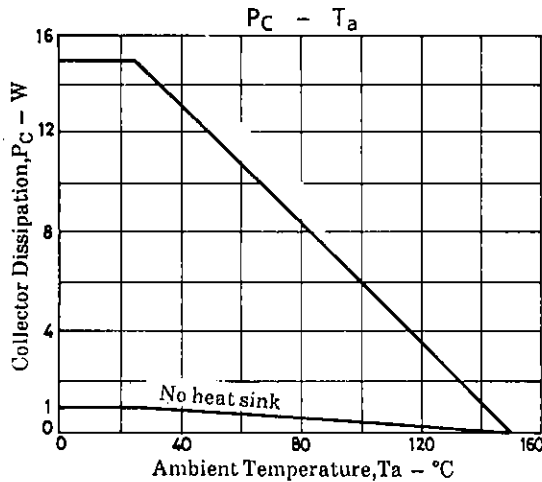
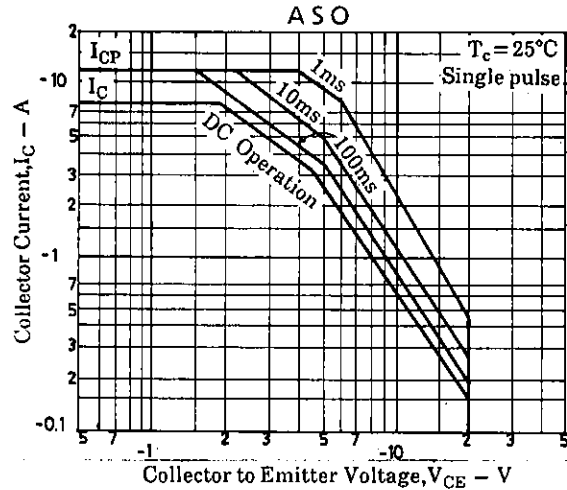
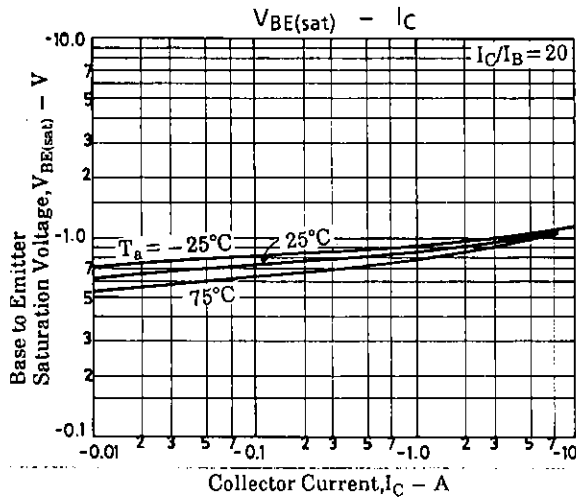
$t_{on}$   
 $t_{stg}$   
 $t_f$

See specified Test Circuit.

min	typ	max	unit
	30	300	ns
	200	800	ns
	15	150	ns

## Switching Time Test Circuit

 $20I_{B1} = -20I_{B2} = I_C = -5A$ Unit (Resistance :  $\Omega$ , Capacitance : F)



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