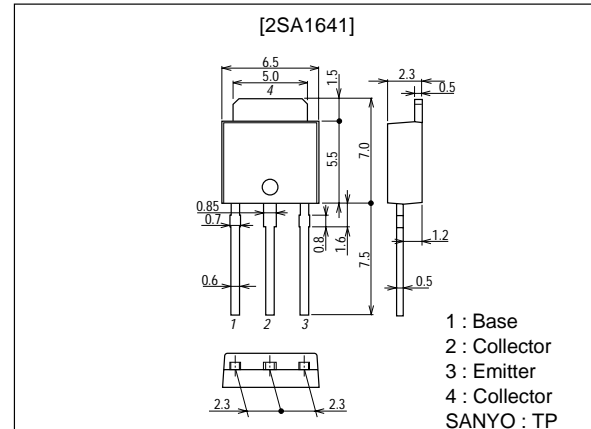


SANYO**2SA1641****High-Current Switching Applications****Features**

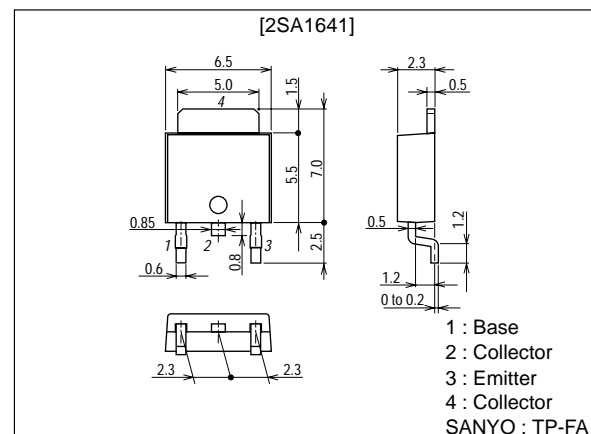
- Adoption of FBET, MBIT processes.
- Low saturation voltage.
- Fast switching speed.
- Large current capacity.
- Small and slim package making it easy to make 2SA1641-used set smaller.

Package Dimensions

unit:mm

2045B

unit:mm

2044B

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

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N1003TN (KT)/8219MO/4049MO, TS No.2926-1/4

Specifications

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

Parameter	Symbol	Conditions	Ratings	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
		$T_c=25^\circ\text{C}$	15	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

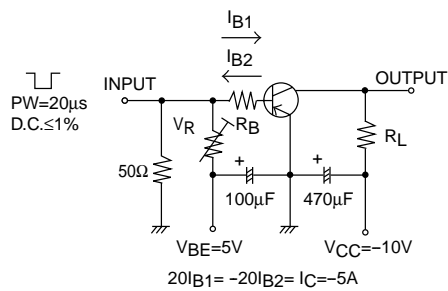
Electrical Characteristics at $T_a = 25^\circ\text{C}$

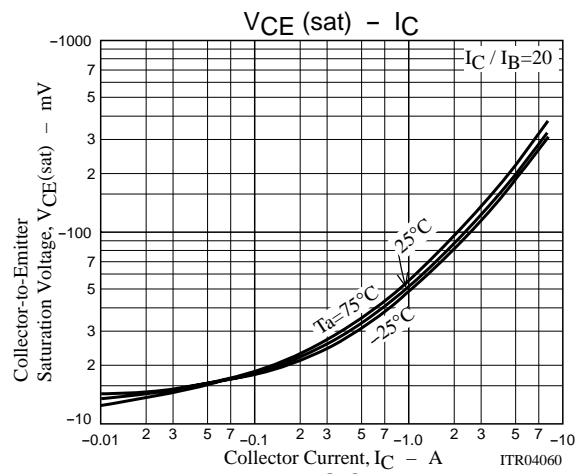
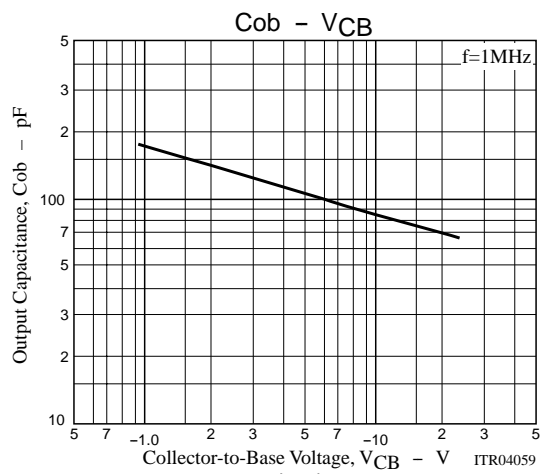
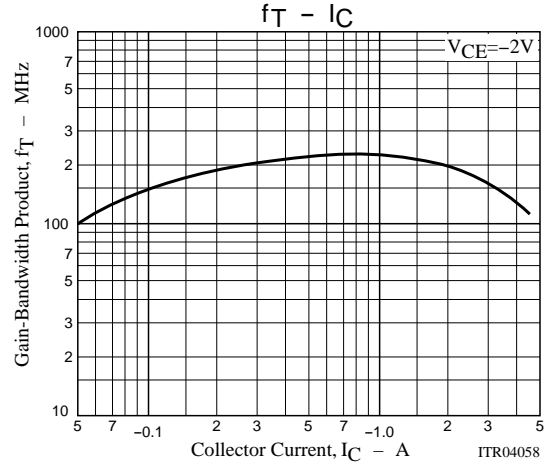
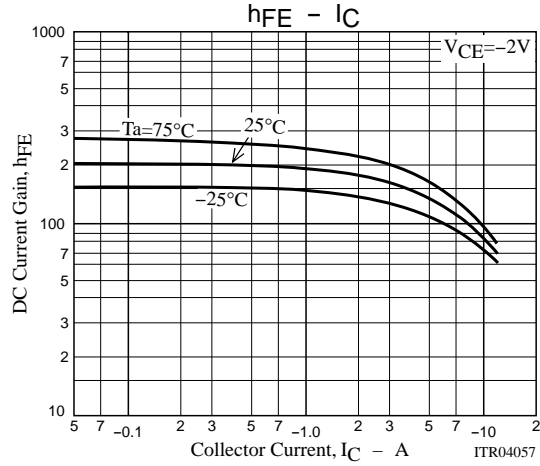
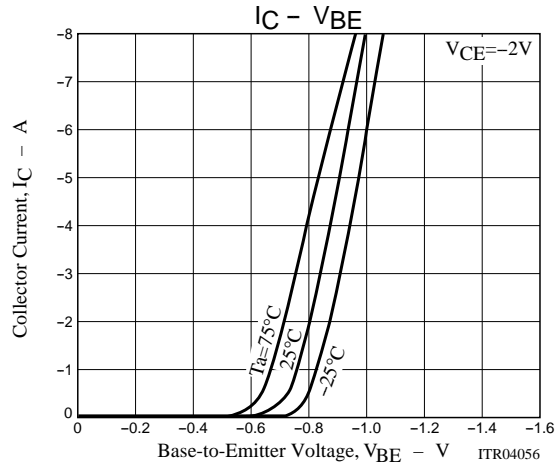
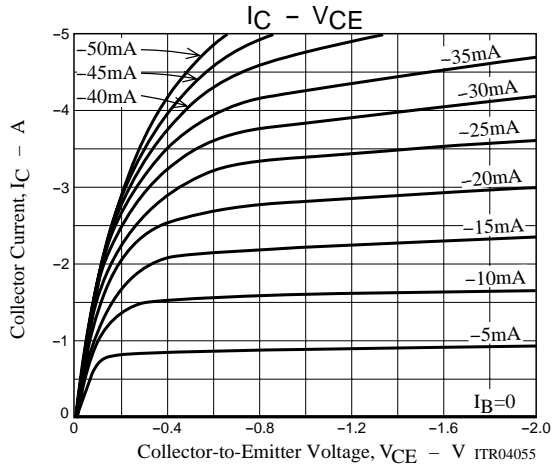
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=-20\text{V}, I_E=0$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}, I_C=0$			-1	μA
DC Current Gain	h_{FE1}	$V_{CE}=-2\text{V}, I_C=-500\text{mA}$	100*		400*	
	h_{FE2}	$V_{CE}=-2\text{V}, I_C=-6\text{A}$	60			
Gain-Bandwidth Product	f_T	$V_{CE}=-2\text{V}, I_C=-500\text{mA}$		200		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-5\text{A}, I_B=-250\text{mA}$		-220	-400	mV
Base-to-Emitter 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
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-25			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, R_{BE}=\infty$	-20			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-5			V
Turn-ON Time	t_{on}	See specified Test Circuit		30	300	ns
Storage Time	t_{stg}	See specified Test Circuit		200	800	ns
Fall Time	t_f	See specified Test Circuit		15	150	ns

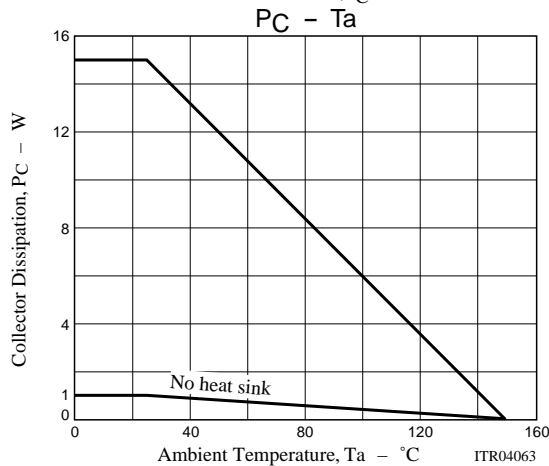
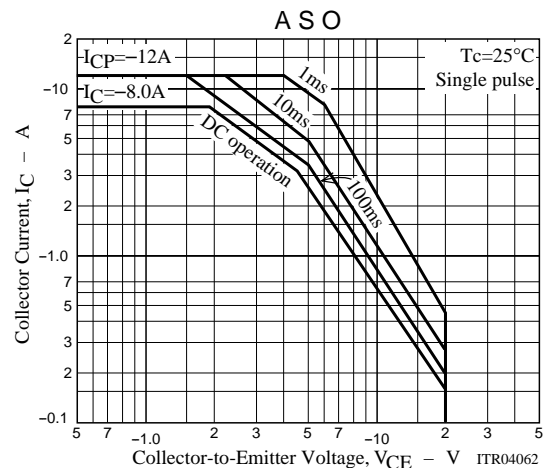
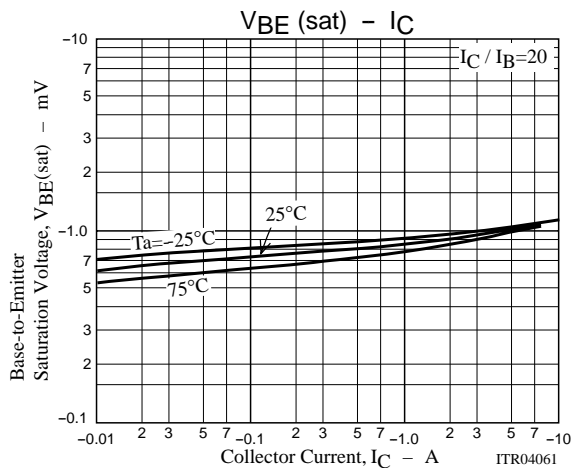
* : The 2SA1641 is classified by 500mA h_{FE} as follows :

Rank	R	S	T
h_{FE}	100 to 200	140 to 280	200 to 400

Switching Time Test Circuit







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