

SANYO

No.3181A

2SA1765

. PNP Epitaxial Planar Silicon Transistor

High-Speed Switching Applications

Features

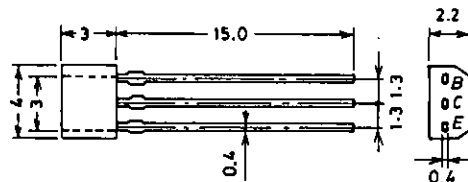
- Fast switching speed
- Low collector saturation voltage
- High gain-bandwidth product
- Small collector capacitance
- Complementary pair with the 2SC4454

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

			unit
Collector to Base Voltage	V_{CB0}	-15	V
Collector to Emitter Voltage	V_{CE0}	-15	V
Emitter to Base Voltage	V_{EB0}	-5	V
Collector Current	I_C	-200	mA
Collector Current(Pulse)	I_{CP}	-500	mA
Base Current	I_B	-40	mA
Collector Dissipation	P_C	300	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

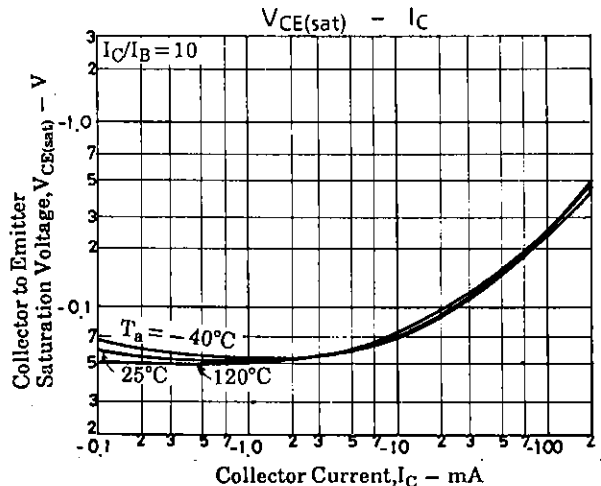
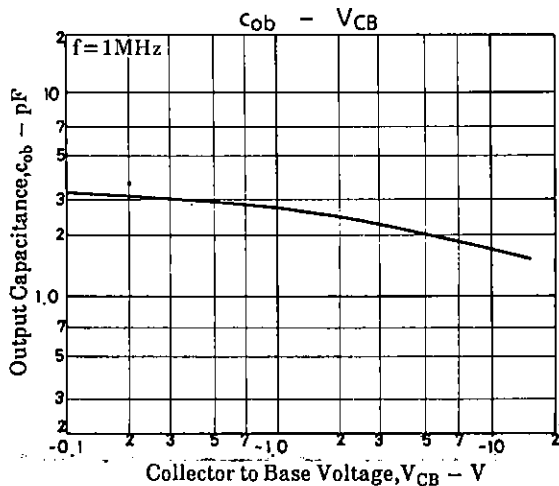
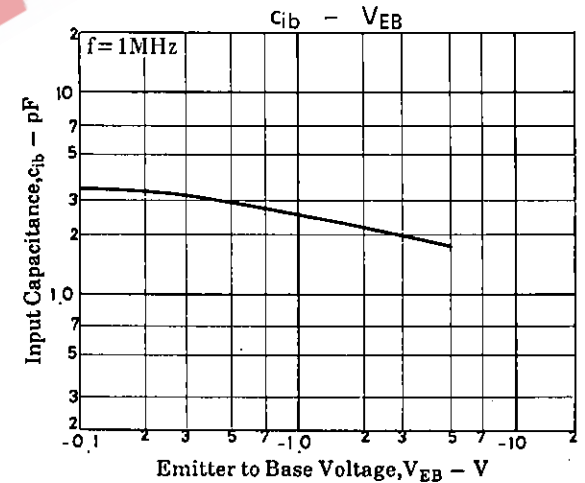
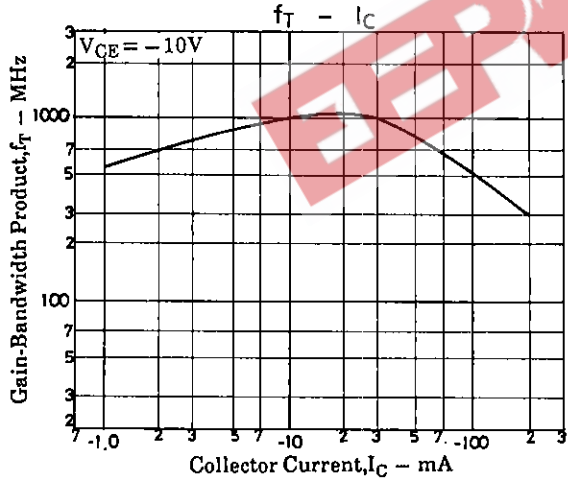
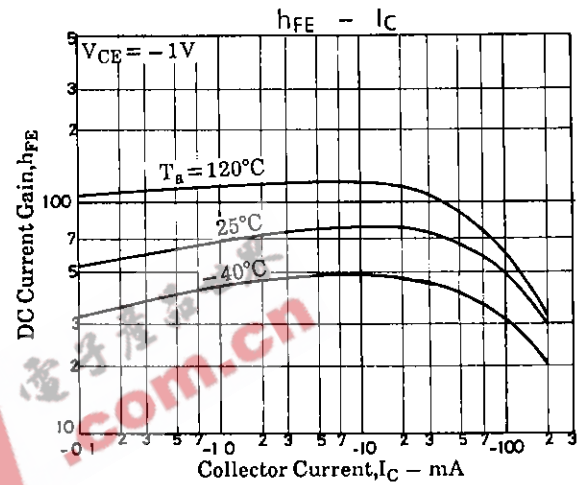
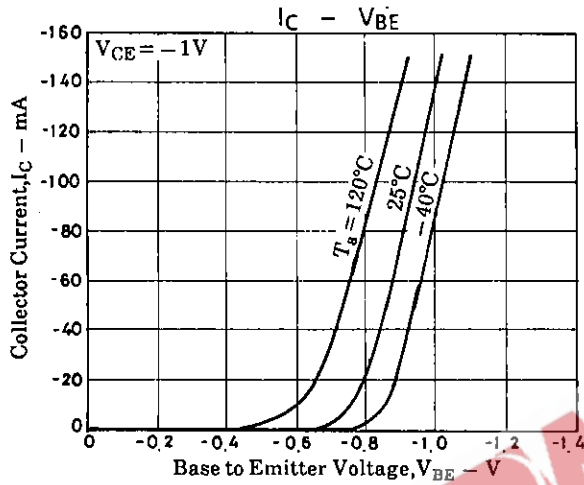
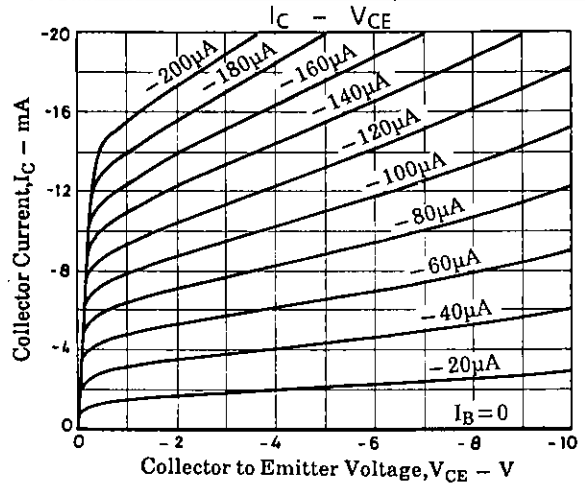
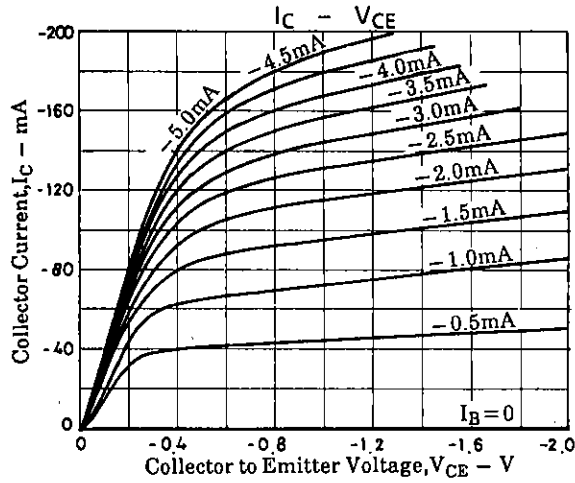
Electrical Characteristics at $T_a = 25^\circ\text{C}$

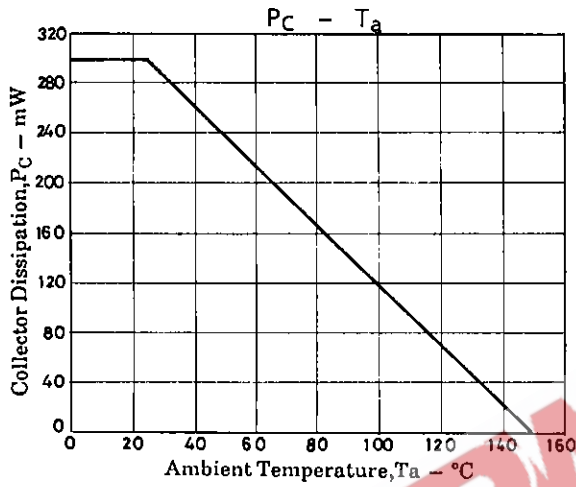
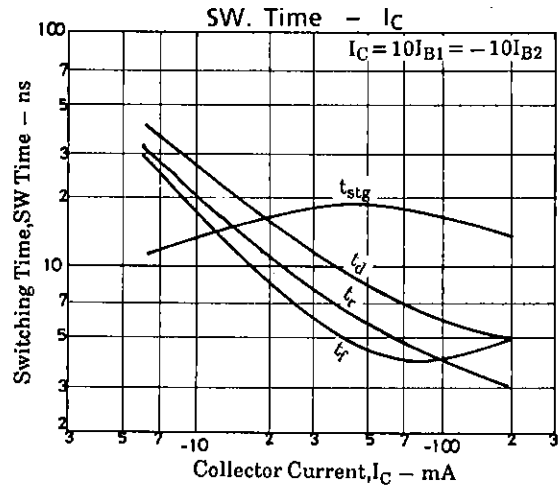
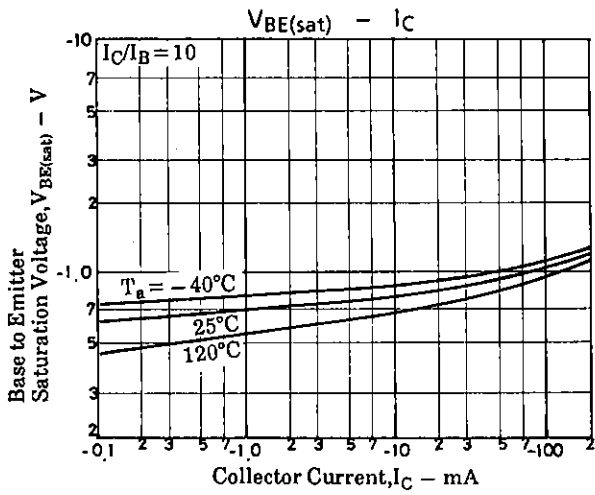
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = -8\text{V}, I_E = 0$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -3\text{V}, I_C = 0$			-0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = -1\text{V}, I_C = -10\text{mA}$	50	80	140	
Gain-Bandwidth Product	f_T	$V_{CE} = -10\text{V}, I_C = -10\text{mA}$	450	1000		MHz
Output Capacitance	c_{ob}	$V_{CB} = -5\text{V}, f = 1\text{MHz}$		2.0	3.0	pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = -10\text{mA}, I_B = -1\text{mA}$	-0.07	-0.20		V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = -10\text{mA}, I_B = -1\text{mA}$	-0.80	-0.90		V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-15			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-15			V
E-B 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.		11	25	ns
Storage Time	t_{stg}	"		21	60	ns
Turn-OFF Time	t_{off}	"		19	60	ns

Package Dimensions 2033
(unit: mm)

B: Base
C: Collector
E: Emitter

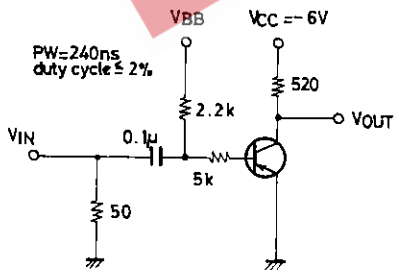
SANYO: SPA



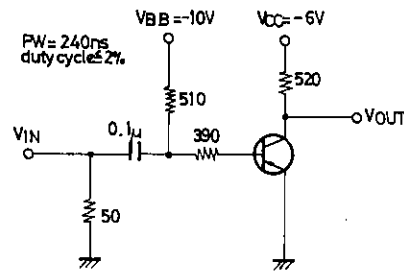


Switching Time Test Circuits

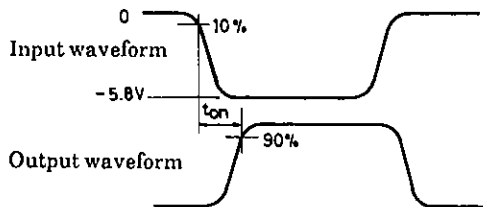
t_{on}, t_{off} Test Circuit



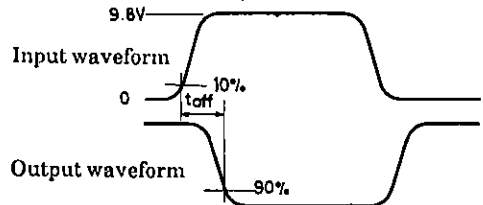
t_{stg} Test Circuit



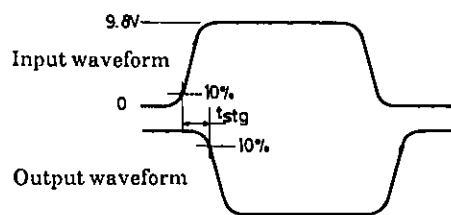
t_{on} Test Waveform ($V_{BB} = GND$)



t_{off} Test Waveform ($V_{BB} = -8.0V$)



t_{stg} Test Waveform



Unit(Resistance : Ω , Capacitance : F)

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