



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

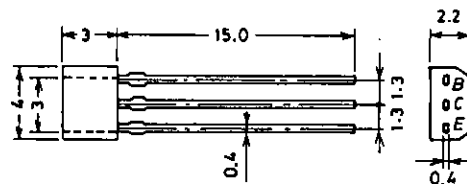
Absolute Maximum Ratings at Ta = 25°C

			unit
Collector to Base Voltage	V _{CB0}	-15	V
Collector to Emitter Voltage	V _{CEO}	-15	V
Emitter to Base Voltage	V _{EBO}	-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	°C
Storage Temperature	T _{stg}	-55 to +150	°C

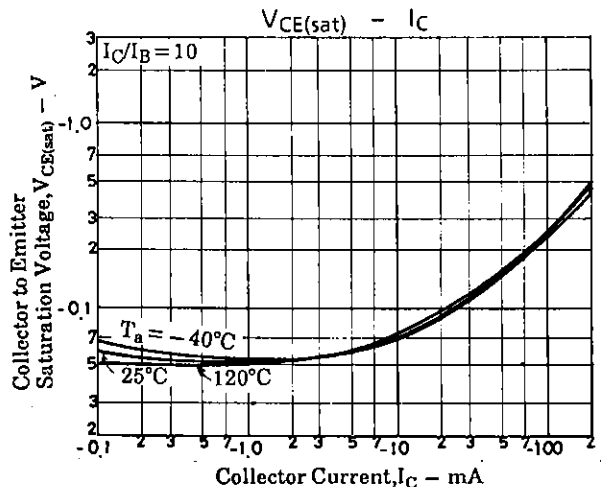
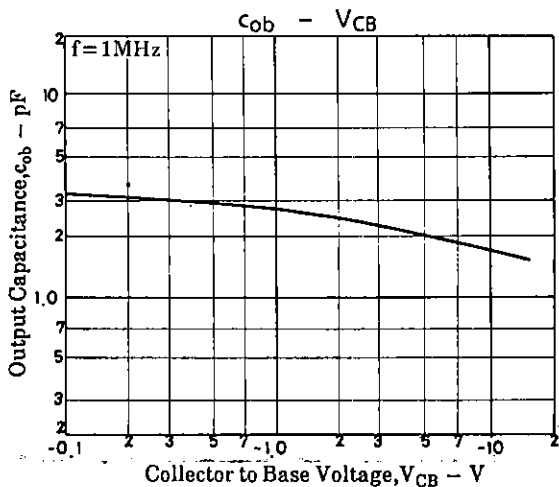
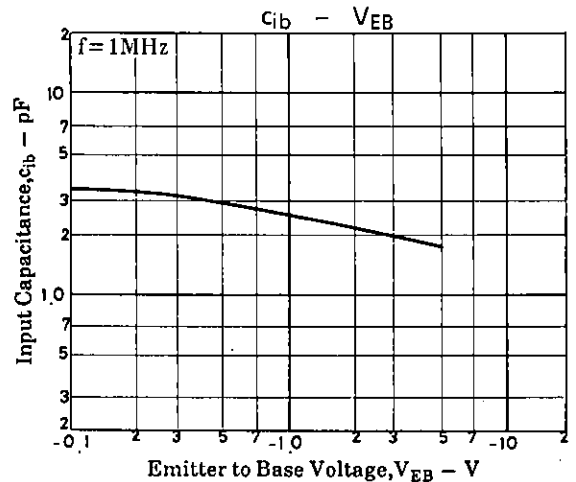
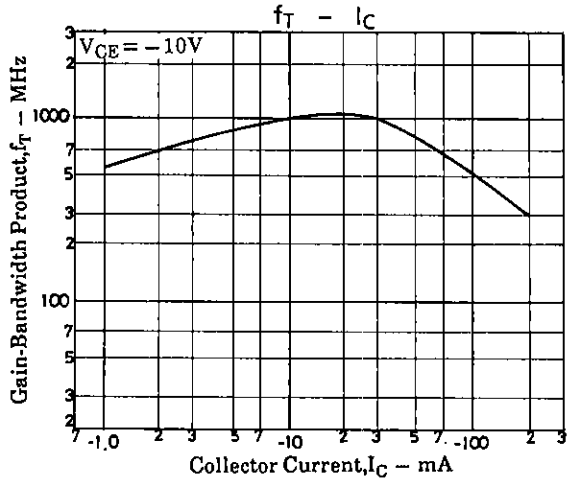
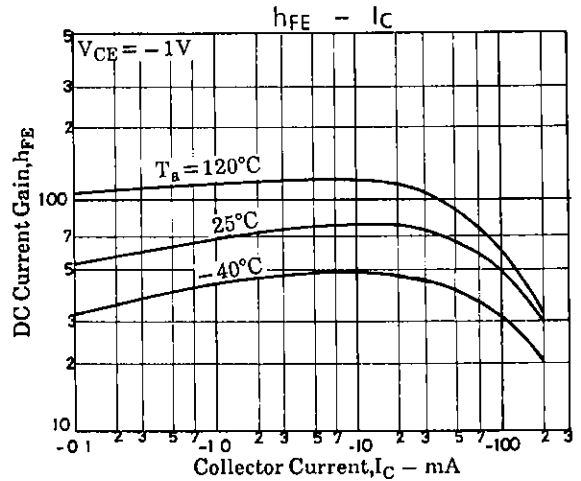
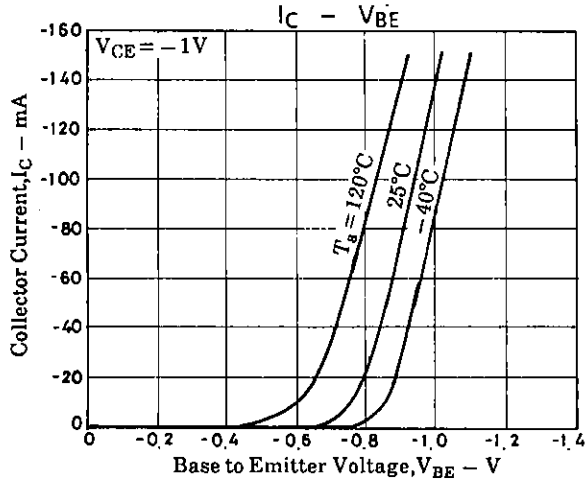
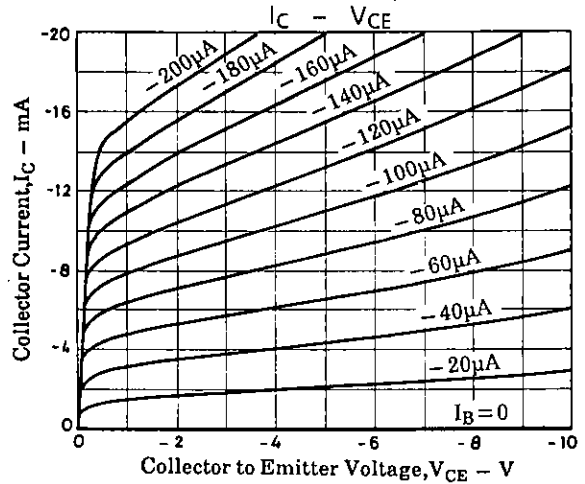
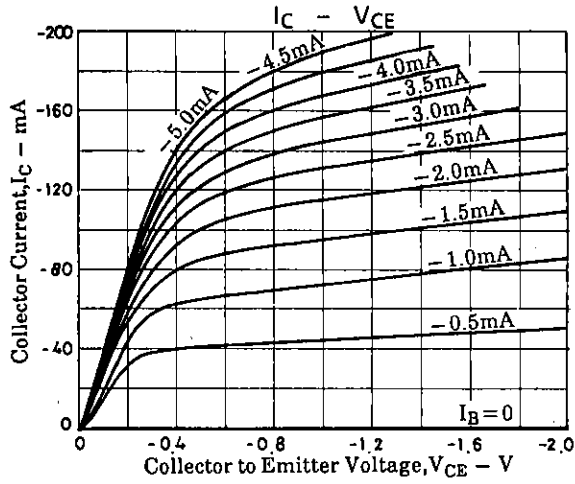
Electrical Characteristics at Ta = 25°C

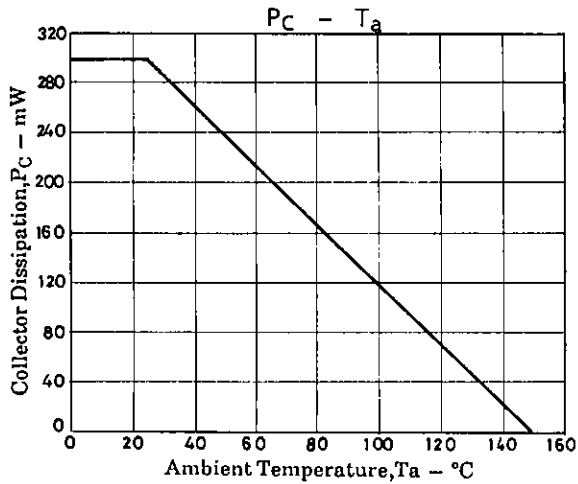
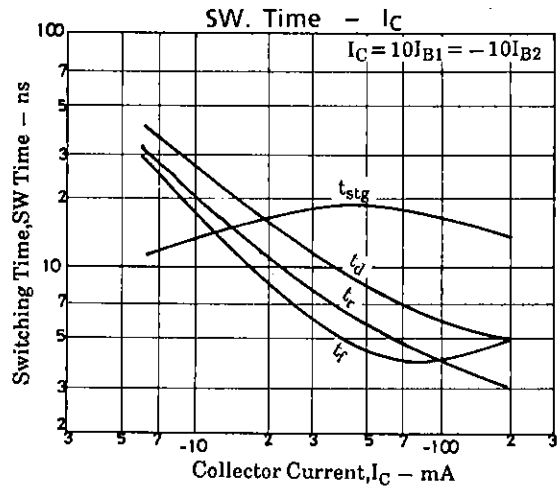
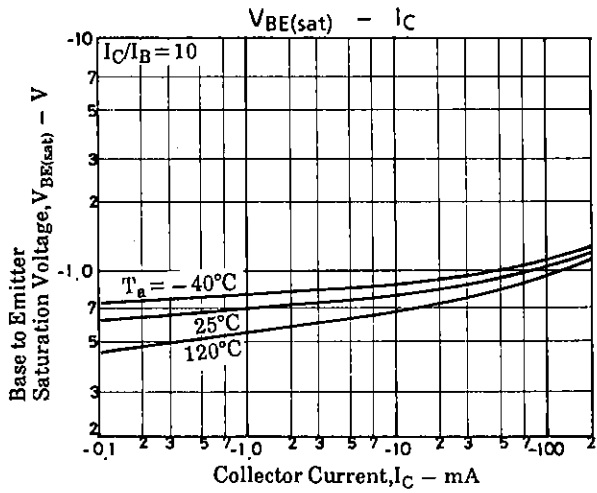
			min	typ	max	unit
Collector Cutoff Current	I _{CBO}	V _{CB} = -8V, I _E = 0			-0.1	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} = -3V, I _C = 0			-0.1	μA
DC Current Gain	h _{FE}	V _{CE} = -1V, I _C = -10mA	50	80	140	
Gain-Bandwidth Product	f _T	V _{CE} = -10V, I _C = -10mA	450	1000		MHz
Output Capacitance	c _{ob}	V _{CB} = -5V, f = 1MHz		2.0	3.0	pF
C-E Saturation Voltage	V _{CE(sat)}	I _C = -10mA, I _B = -1mA	-0.07	-0.20		V
B-E Saturation Voltage	V _{BE(sat)}	I _C = -10mA, I _B = -1mA	-0.80	-0.90		V
C-B Breakdown Voltage	V _{(BR)CBO}	I _C = -10μA, I _E = 0	-15			V
C-E Breakdown Voltage	V _{(BR)CEO}	I _C = -1mA, R _{BE} = ∞	-15			V
E-B Breakdown Voltage	V _{(BR)EBO}	I _E = -10μA, 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)



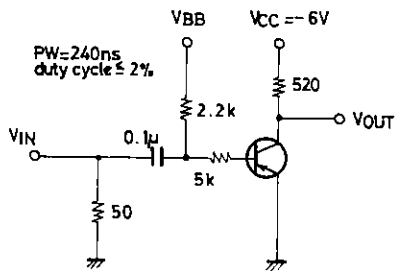
B: Base
C: Collector
E: Emitter
SANYO: SPA



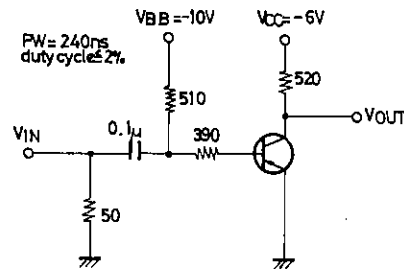


Switching Time Test Circuits

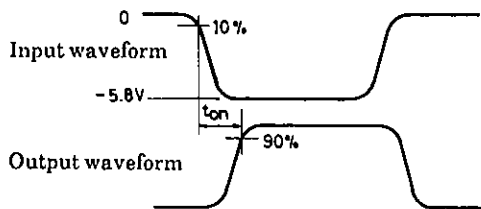
t_{on}, t_{off} Test Circuit



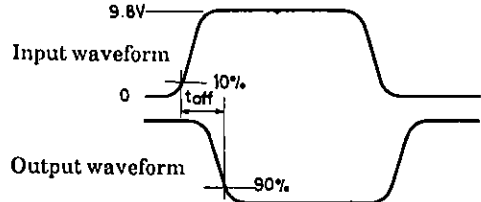
t_{stg} Test Circuit



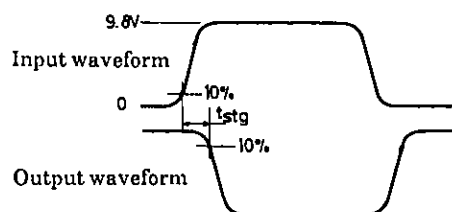
t_{on} Test Waveform ($V_{BB} = \text{GND}$)



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



t_{stg} Test Waveform



Unit(Resistance : Ω , Capacitance : F)

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