

**2SA1763**

High-Speed Switching Applications

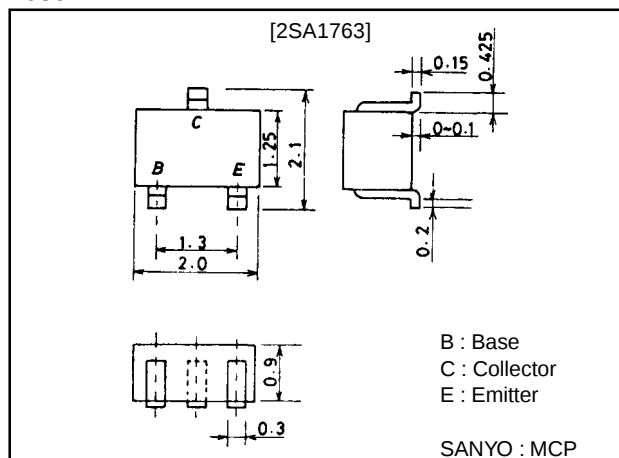
Features

- Fast switching speed.
- Low collector saturation voltage.
- High gain-bandwidth product.
- Small collector capacitance.
- Very small-sized package permitting the 2SA1763-applied sets to be made small and slim.
- Complementary pair with the 2SC4452.

Package Dimensions

unit:mm

2059



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-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		150	mW
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}	$V_{CB} = -8V, I_E = 0$			-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}	$V_{CB} = -5V, f = 1MHz$		1.8	3.0	pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -10mA, I_B = -1mA$		-0.07	-0.20	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -10mA, I_B = -1mA$		-0.80	-0.85	V

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2SA1763

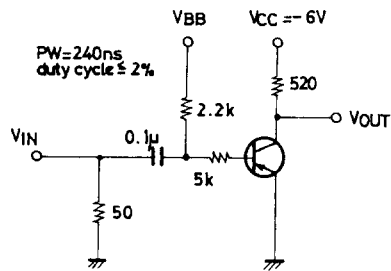
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-5			V
Turn-ON Time	t_{on}	See specified Test Circuit		11		ns
Storage Time	t_{stg}	See specified Test Circuit		21		ns
Turn-OFF Time	t_{off}	See specified Test Circuit		19		ns

Marking : FS

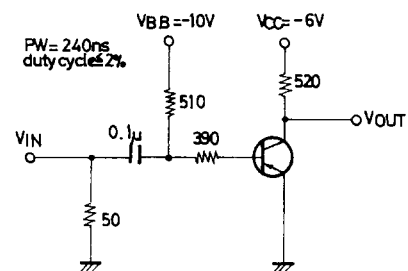
For the specified switching test circuit, see the below.

Switching Time Test Circuit

t_{on}, t_{off} Test Circuit

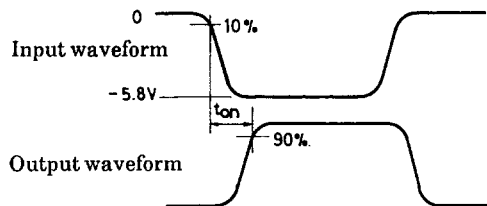


t_{stg} Test Circuit

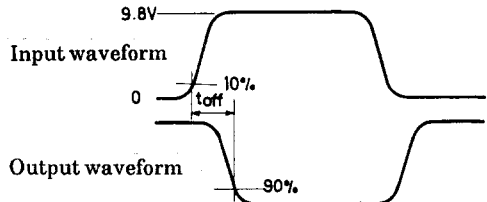


Unit (resistance : Ω , capacitance : F)

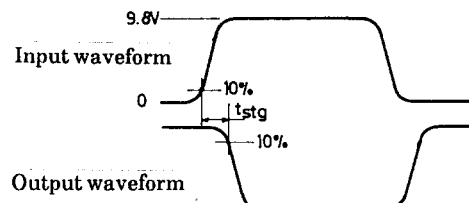
t_{on} Test Waveform ($V_{BB} = GND$)

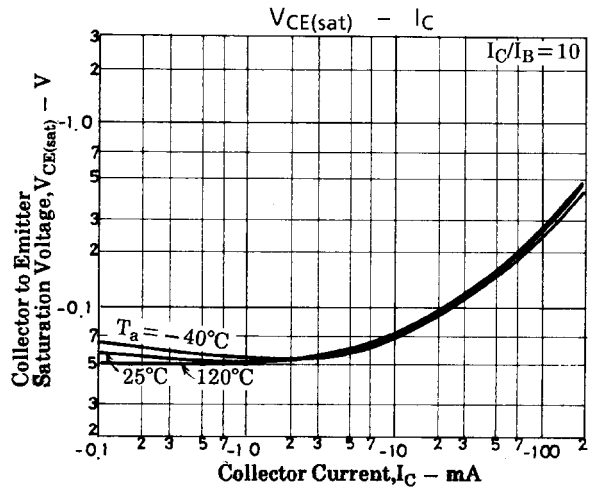
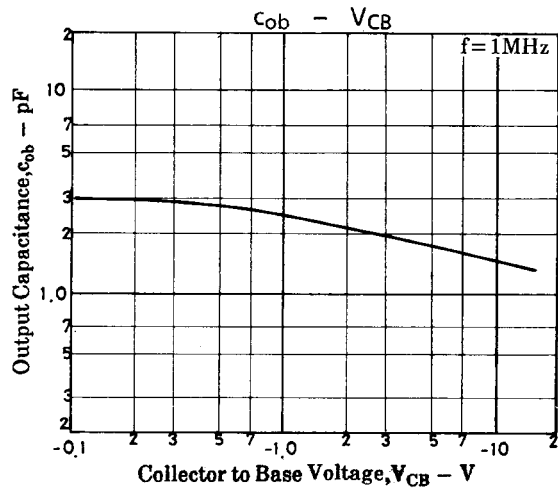
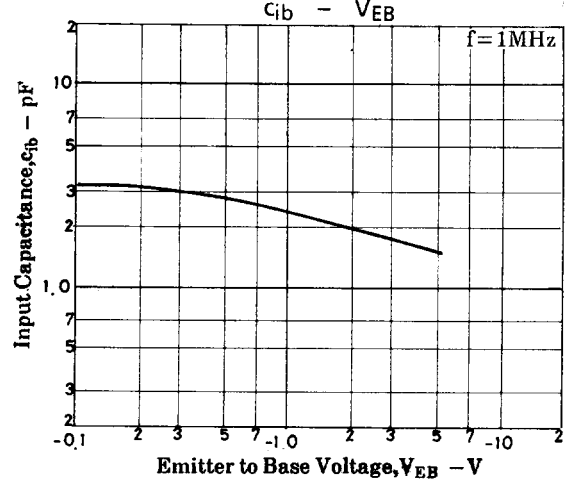
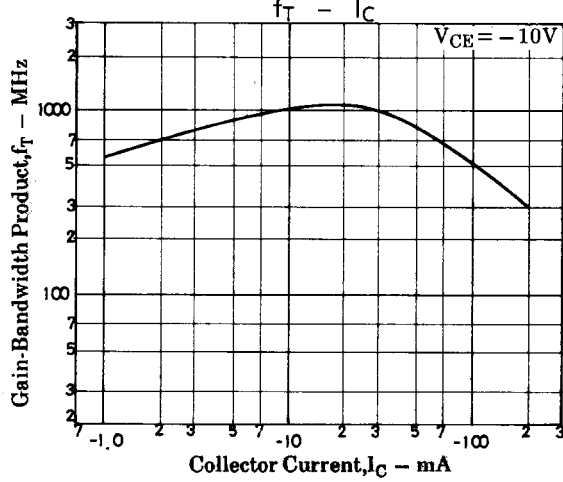
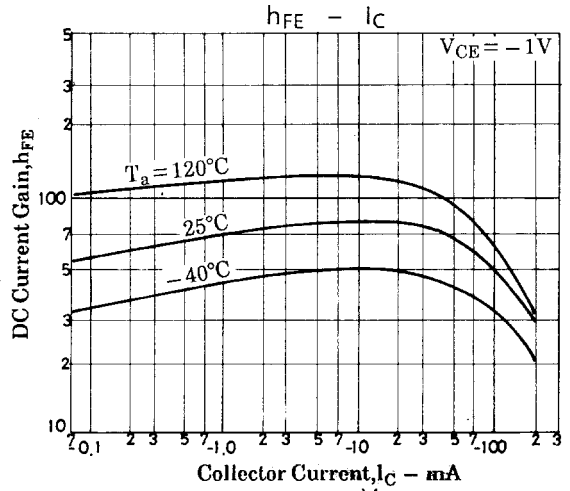
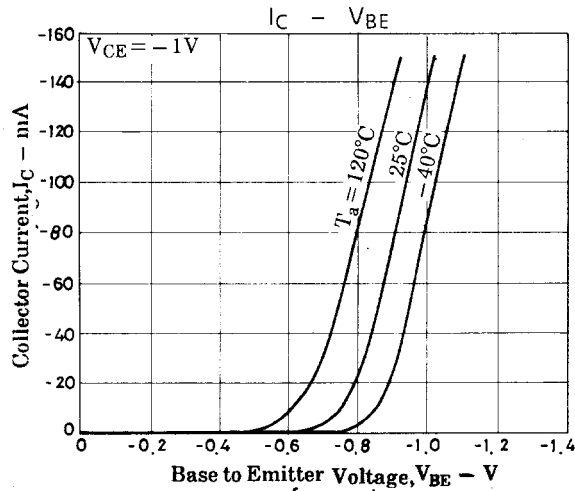
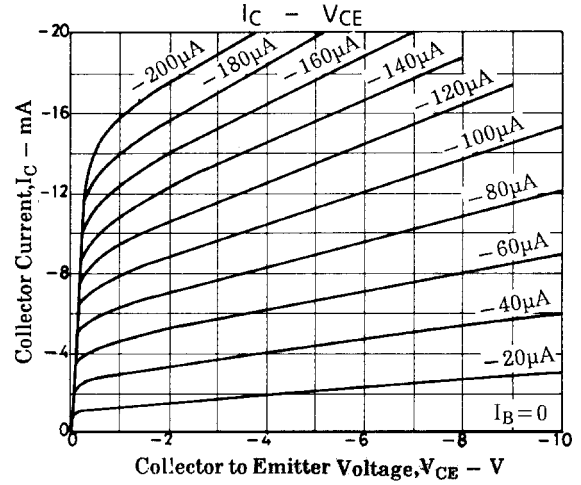
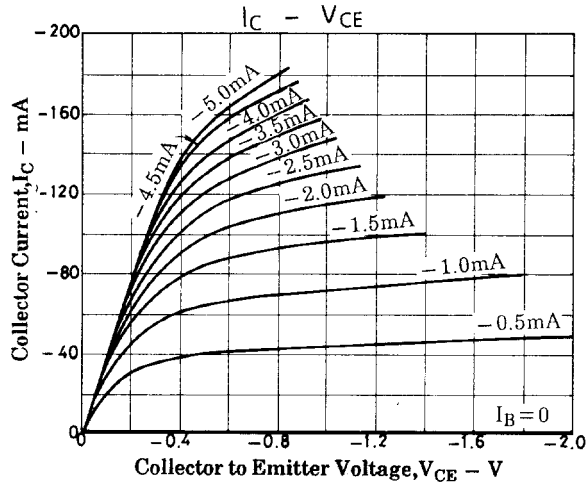


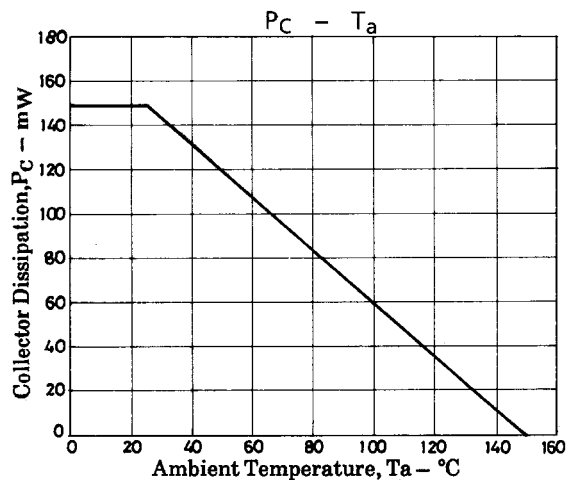
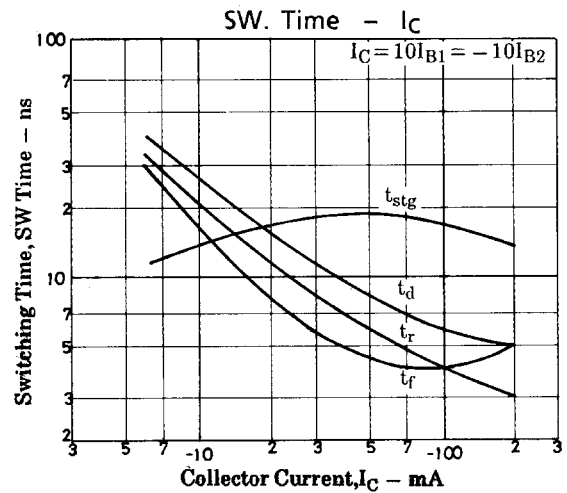
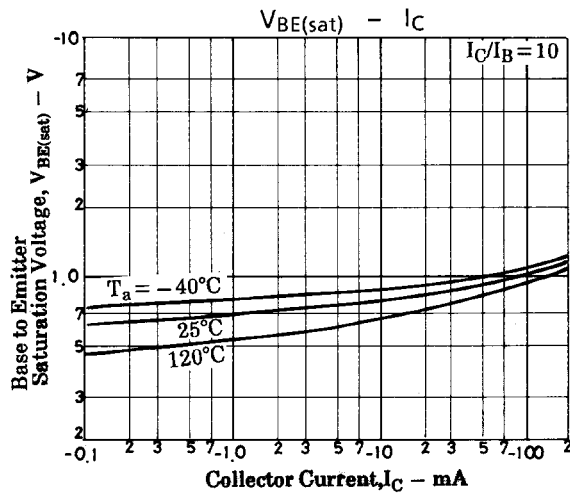
t_{off} Test Waveform ($V_{BB} = -8.0V$)



t_{stg} Test Waveform







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