



# 2SA1763

## High-Speed Switching Applications

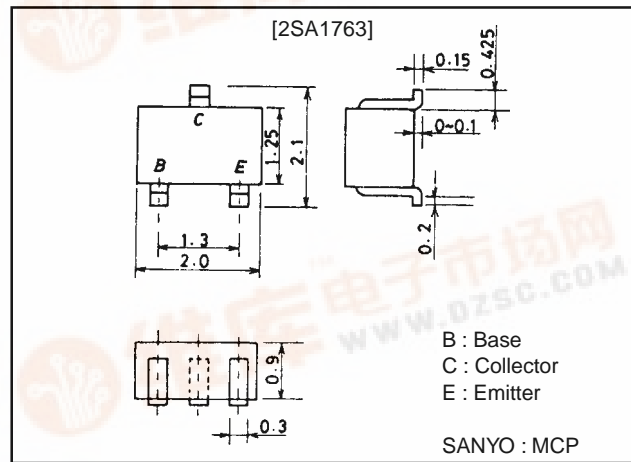
### Features

- 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	$V_{CB0}$		-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	$P_C$		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	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-3V, I_C=0$			-0.1	$\mu A$
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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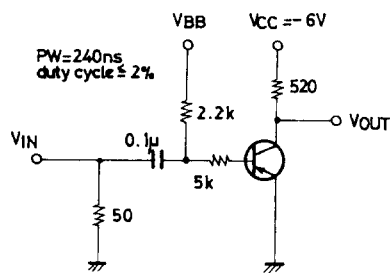
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-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

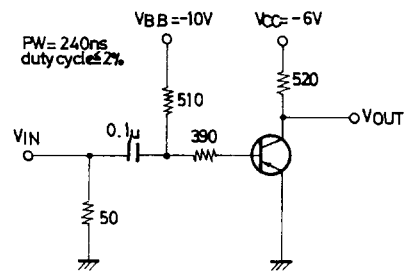
For the specified switching test circuit, see the below.

### Switching Time Test Circuit

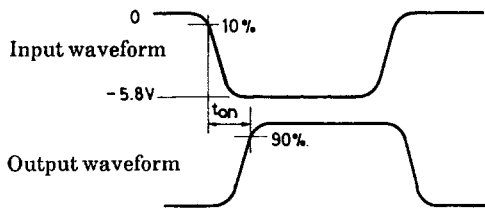
#### $t_{on}, t_{off}$ Test Circuit



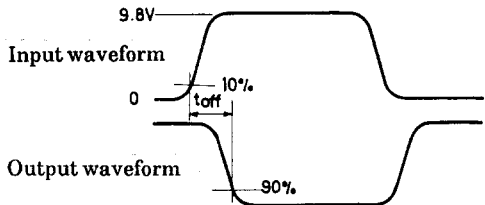
#### $t_{stg}$ Test Circuit



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

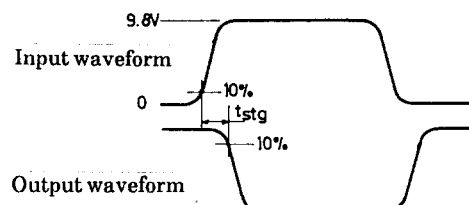


#### $t_{off}$ Test Waveform ( $V_{BB} = -8.0V$ )

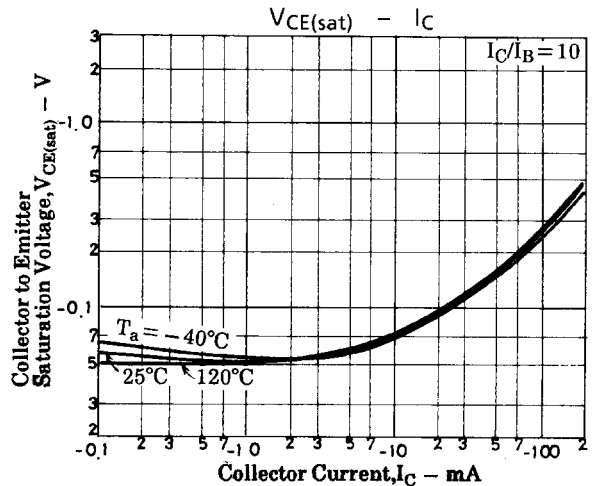
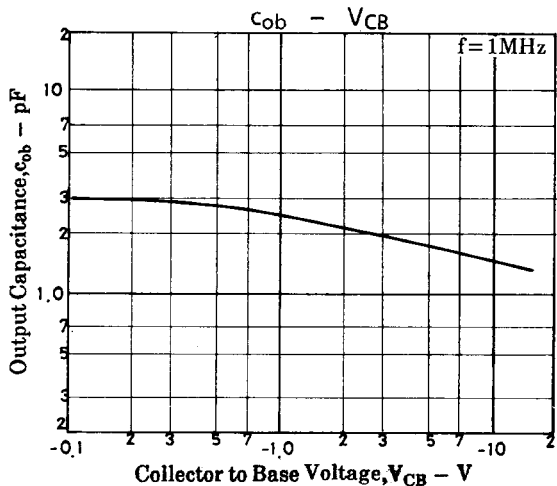
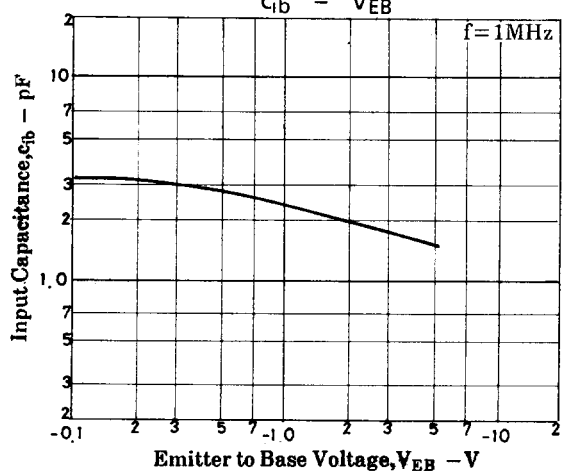
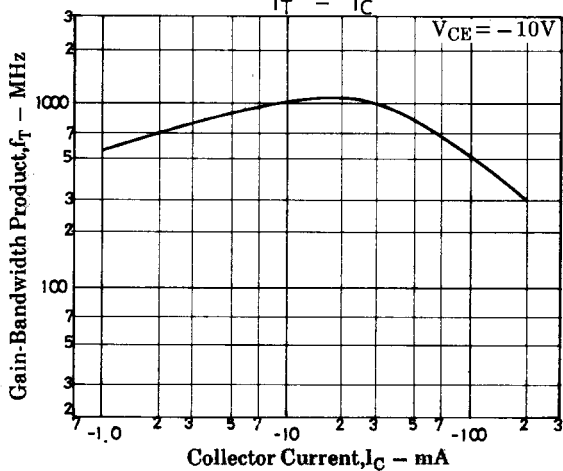
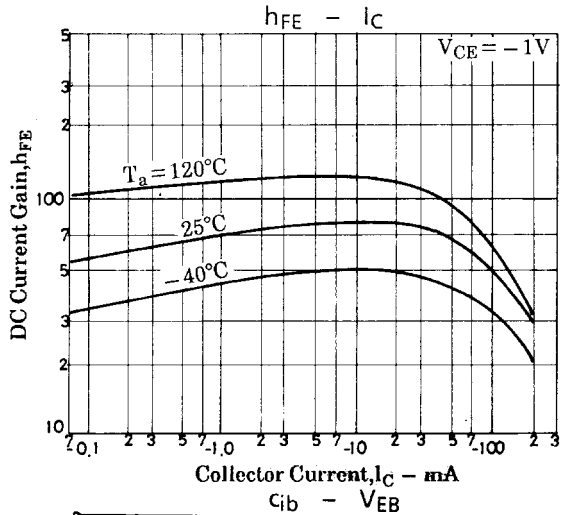
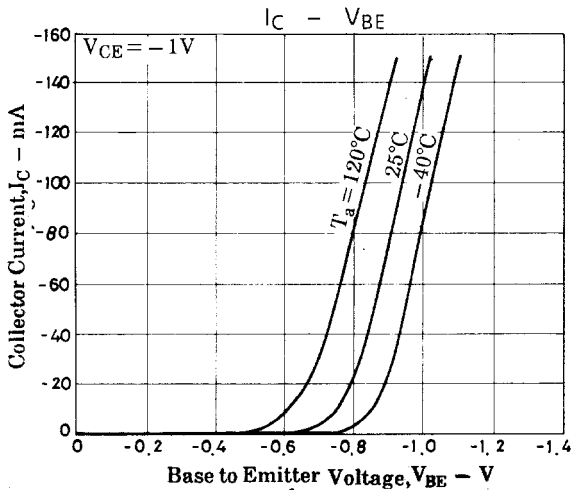
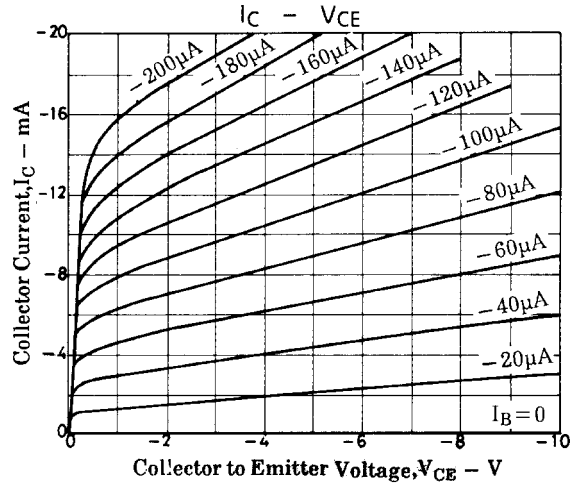
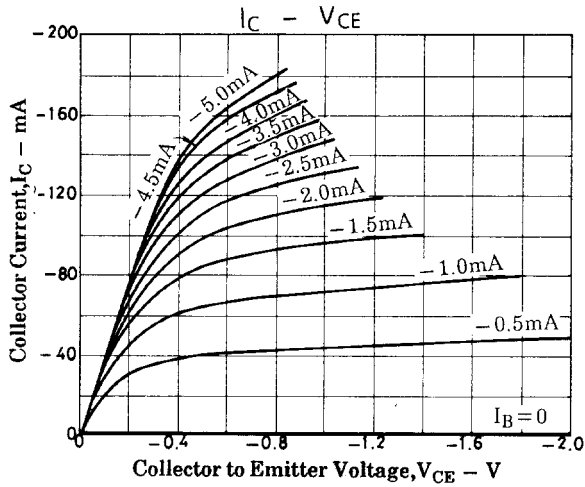


Unit (resistance :  $\Omega$ , capacitance : F)

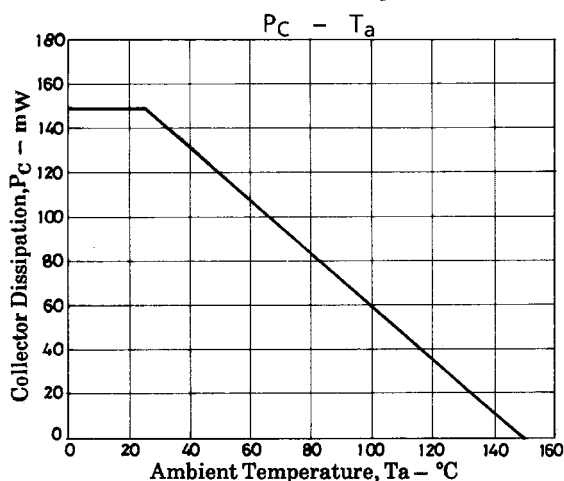
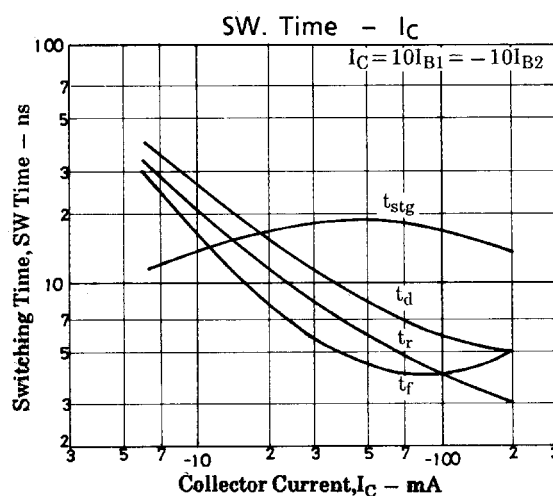
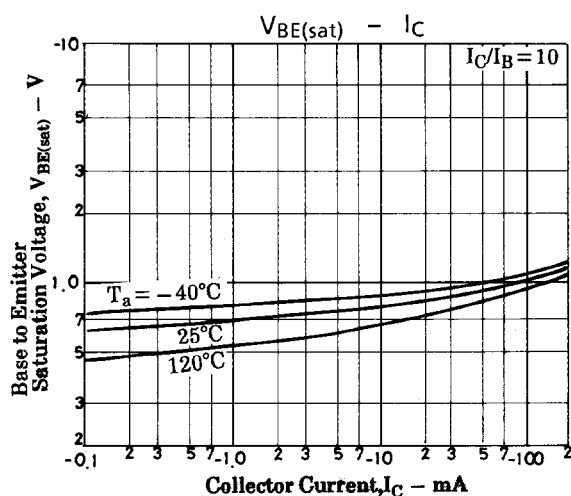
#### $t_{stg}$ Test Waveform



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