

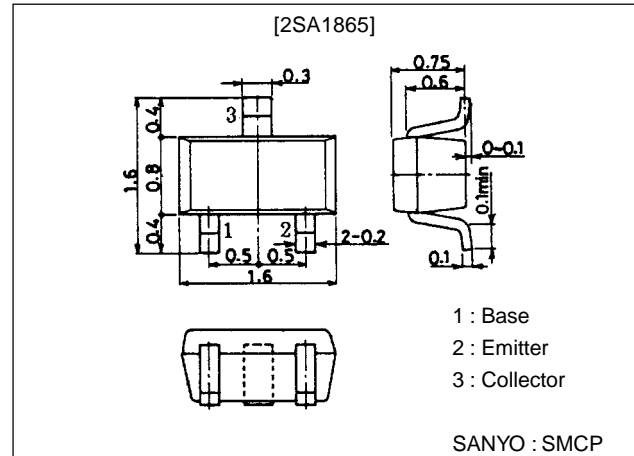
**2SA1865****Muting Circuits, Driver Applications****Features**

- On-chip bias resistors ( $R_1=10k\Omega$ ,  $R_2=10k\Omega$ ).
- Very small-sized package making 2SA1865-applied sets to small and slim.
- Small ON resistance.
- High gain-bandwidth product  $f_T$ .

**Package Dimensions**

unit:mm

2106A

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		-15	V
Collector-to-Emitter Voltage	$V_{CE0}$		-15	V
Emitter-to-Base Voltage	$V_{EB0}$		-10	V
Input Voltage	$V_{IN}$		-14	V
Collector Current	$I_C$		-100	mA
Collector Current (Pulse)	$I_{CP}$		-200	mA
Base Current	$I_B$		-20	mA
Collector Dissipation	$P_C$		150	mW
Junction Temperature	$T_j$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CB0}$	$V_{CB}=-10\text{V}$ , $I_E=0$			-0.1	$\mu\text{A}$
Collector Cutoff Current	$I_{CE0}$	$V_{CE}=-10\text{V}$ , $I_E=0$			-0.5	$\mu\text{A}$
Emitter Cutoff Current	$I_{EB0}$	$V_{EB}=-5\text{V}$ , $I_C=0$	-195	-250	-360	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=-2\text{V}$ , $I_C=-10\text{mA}$	50			
Gain-Bandwidth Product	$f_T$	$V_{CE}=-5\text{V}$ , $I_C=-10\text{mA}$		600		MHz
Output Capacitance	$C_{ob*}$	$V_{CB}=-10\text{V}$ , $f=1\text{MHz}$		0.9		pF

\* : Characteristic of the constituent transistor.

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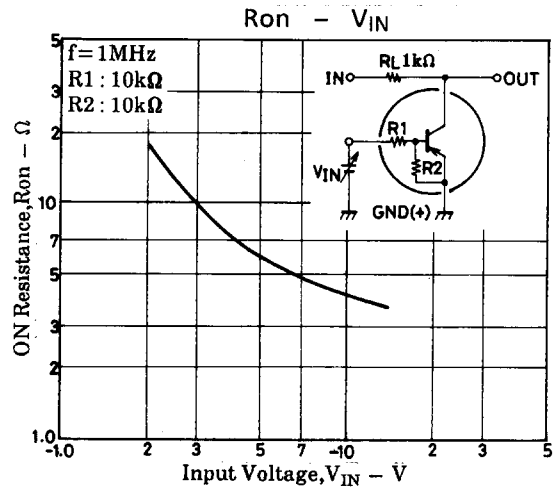
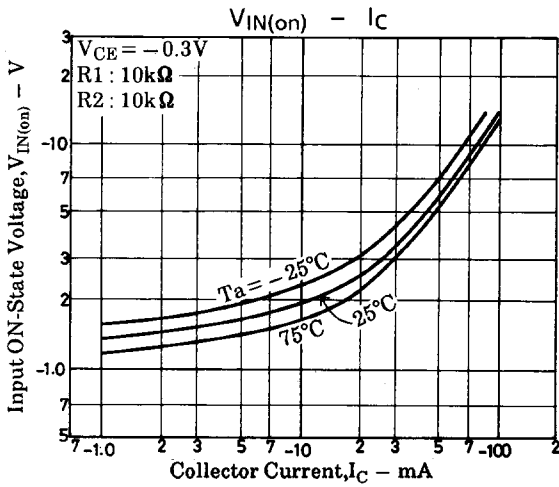
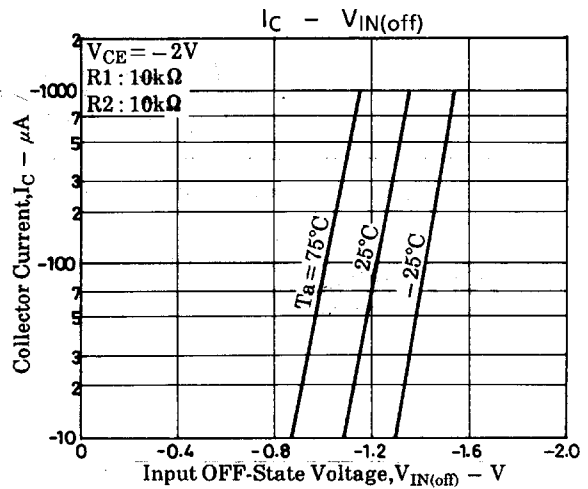
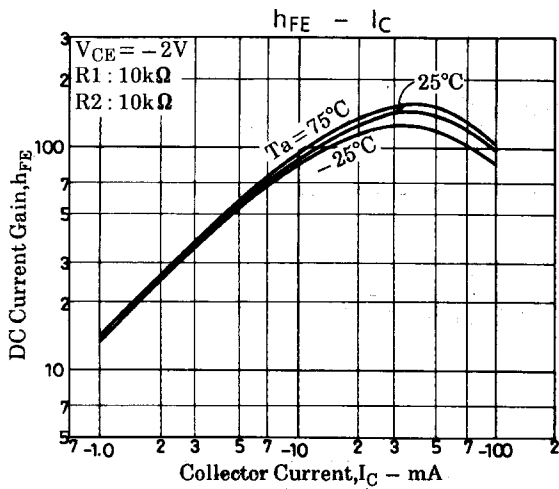
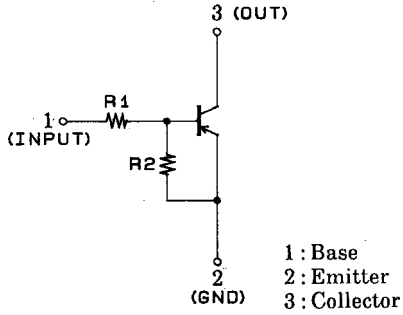
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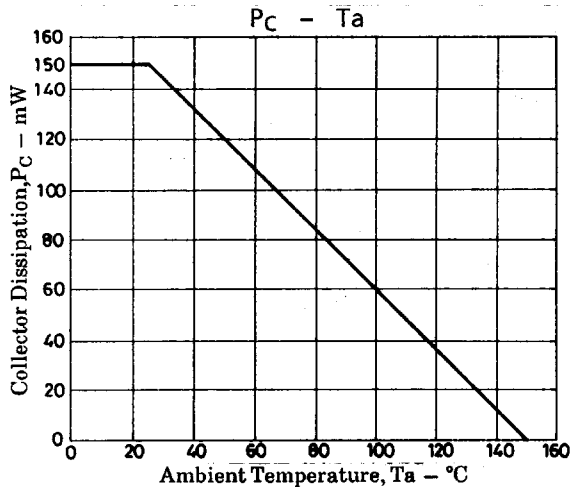
# 2SA1865

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -2.5\text{mA}$ , $I_B = -0.25\text{mA}$		-20	-60	mV
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}$ , $I_E = 0$	-15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}$ , $R_{BE} = \infty$	-15			V
Input OFF-State Voltage	$V_{IN(off)}$	$V_{CE} = -2\text{V}$ , $I_C = -100\mu\text{A}$	-0.8	-1.2	-1.5	V
Input ON-State Voltage	$V_{IN(on)}$	$V_{CE} = -0.3\text{V}$ , $I_C = -10\text{mA}$	-1.0	-2.0	-4.0	V
Input Resistance	R1		7.0	10	13	k $\Omega$
Resistance Ratio	R1/R2		0.9	1.0	1.1	
On Resistance	$R_{on}$	$V_{IN} = -5\text{V}$ , $f = 1\text{MHz}$		6.0		$\Omega$

Marking : BA

## Electrical Connection





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