

**2SA1865**

Muting Circuits, Driver Applications

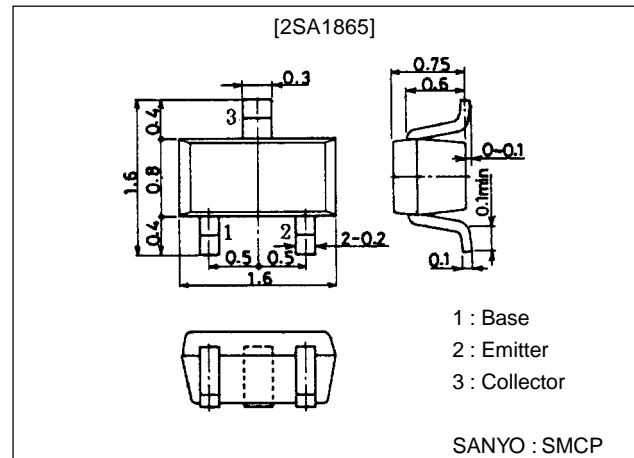
Features

- 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	μA
Collector Cutoff Current	I_{CE0}	$V_{CE}=-10\text{V}$, $I_E=0$			-0.5	μA
Emitter Cutoff Current	I_{EB0}	$V_{EB}=-5\text{V}$, $I_C=0$	-195	-250	-360	μA
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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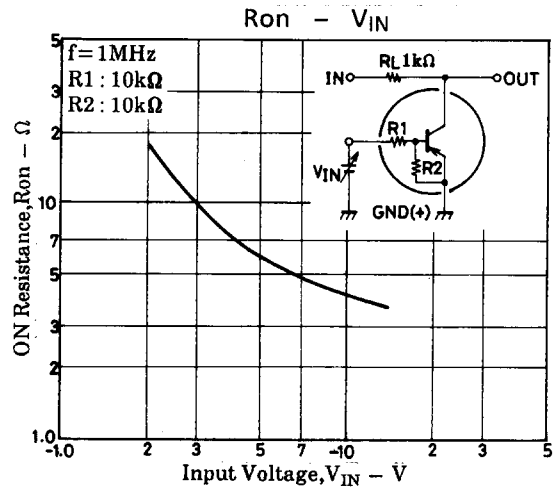
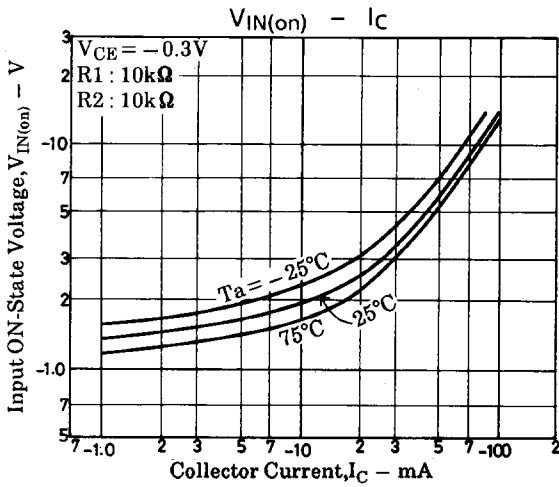
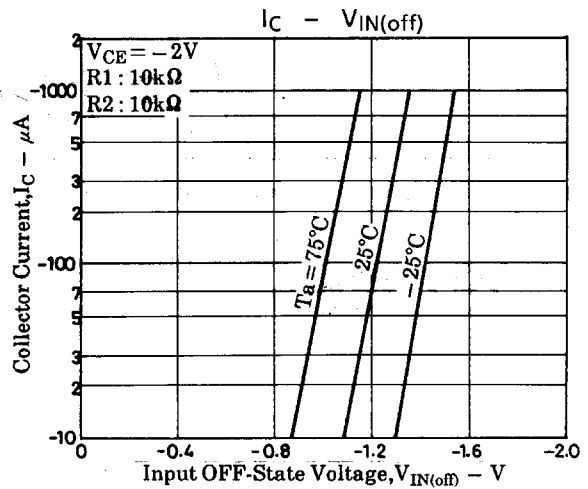
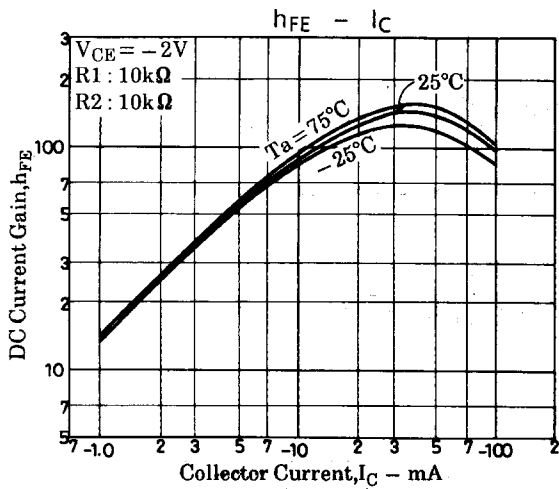
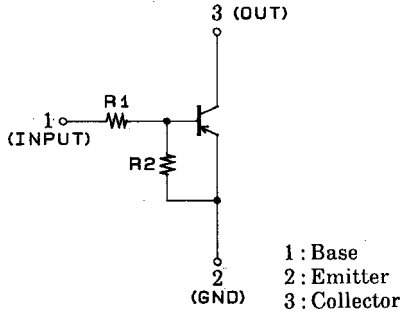
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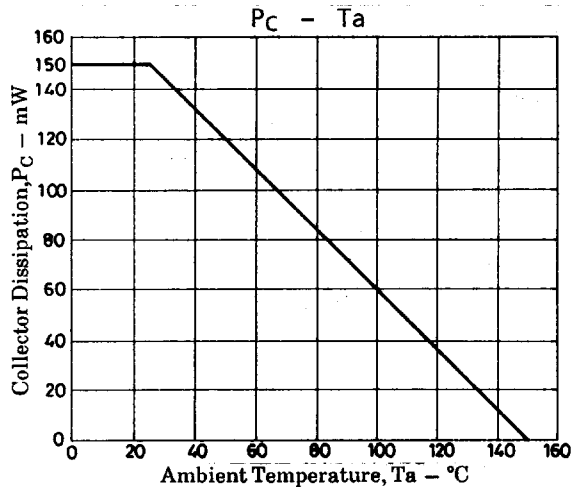
2SA1865

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 Ω
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		Ω

Marking : BA

Electrical Connection





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