

BCW61C

Silicon PNP Transistor

General Purpose Amp

SOT-23 Type Surface Mount Package

Description:

The BCW61C is a silicon PNP general purpose transistor in a SOT-23 type surface mount package designed for use in general purpose switching and amplification applications..

Absolute Maximum Ratings:

Collector-Base Voltage, V_{CBO}	32V
Collector-Emitter Voltage, V_{CEO}	32V
Emitter-Base Voltage, V_{EBO}	5V
Collector Current, I_C	
Continuous	100mA
Peak	200mA
Peak Base Current, I_{BM}	100mA
Total Power Dissipation ($T_A \leq +25^\circ\text{C}$, Note 1), P_{tot}	250mW
Junction Temperature, T_J	+150°C
Operating Ambient Temperature Range, T_{amb}	-65° to +150°C
Storage Temperature Range, T_{stg}	-65° to +150°C
Thermal Resistance, Junction-to-Ambient (Note 1), R_{thJA}	500K/W

Note 1. Mounted on an FR4 printed-circuit board.

Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 32V, I_E = 0$	-	-	20	nA
		$V_{CB} = 32V, I_E = 0, T_J = +150^\circ\text{C}$	-	-	20	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4V, I_C = 0$	-	-	20	nA
Base-Emitter Voltage	V_{BE}	$V_{CE} = 5V, I_C = 2mA$	600	650	750	mV
		$V_{CE} = 5V, I_C = 10\mu A$	-	550	-	mV
		$V_{CE} = 1V, I_C = 50mA$	-	720	-	mV
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10mA, I_B = 0.25mA$	60	-	250	mV
		$I_C = 50mA, I_B = 1.25mA$	120	-	550	mV
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10mA, I_B = 0.25mA$	600	-	850	mV
		$I_C = 50mA, I_B = 1.25mA$	0.68	-	1.05	V

Electrical Characteristics (Cont'd): ($T_A = +25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 10\mu\text{A}$	40	–	–	
		$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	250	–	460	
		$V_{CE} = 1\text{V}, I_C = 50\text{mA}$	100	–	–	
Transition Frequency	f_T	$V_{CE} = 5\text{V}, I_C = 10\text{mA}, f = 100\text{MHz},$ Note 2	100	–	–	MHz
Collector Capacitance	C_c	$V_{CB} = 10\text{V}, I_E = I_e = 0, f = 1\text{MHz}$	–	4.5	–	pF
Emitter Capacitance	C_e	$V_{EB} = 0.5\text{V}, I_C = I_c = 0, f = 1\text{MHz}$	–	11	–	pF
Small-Signal Current Gain	h_{fe}	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	75	–	900	
Noise Figure	NF	$V_{CE} = 5\text{V}, I_C = 200\mu\text{A}, f = 1\text{kHz},$ $B = 200\text{Hz}, R_S = 2\text{k}\Omega$	–	2	6	dB

Note 2. Pulse Test: $t_p \leq 300\mu\text{s}, \delta \leq 0.02.$

