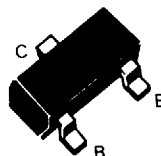


SOT23 PNP SILICON PLANAR SMALL SIGNAL TRANSISTORS

BCW61

PARTMARKING DETAILS:-

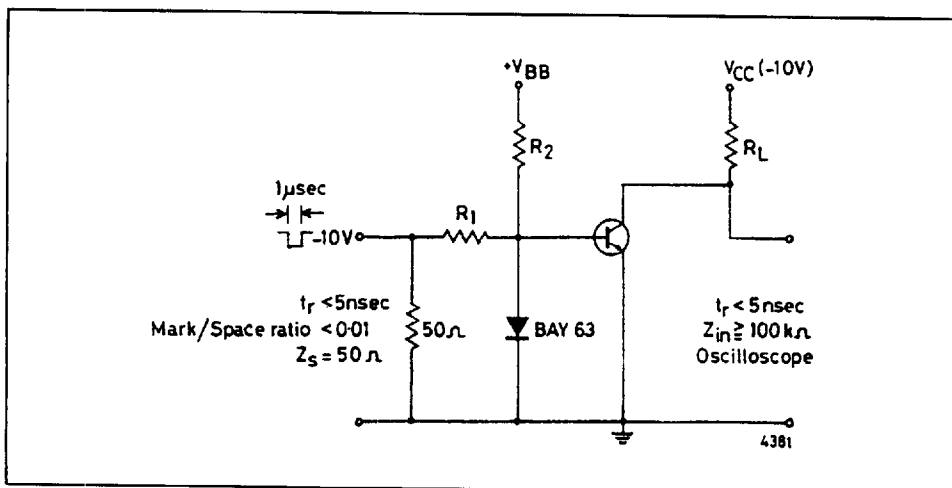
BCW61A - BA	BCW61AR - CA
BCW61B - BB	BCW61BR - CB
BCW61C - BC	BCW61CR - CC
BCW61D - BD	BCW61DR - CD



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-32	V
Collector-Emitter Voltage	V_{CEO}	-32	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-200	mA
Base Current	I_B	-50	mA
Power Dissipation at $T_{amb} = 25^\circ\text{C}$	P_{TOT}	330	mW
Operating and Storage Temperature Range	$t_j:tstg$	-55 to +150	$^\circ\text{C}$

SWITCHING CIRCUIT



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BCW61

CHARACTERISTICS (at 25°C ambient temperature unless otherwise stated)

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector-Emitter Voltage		$V_{(BR)CEO}$	-32			V	$I_{CEO} = -2\text{mA}$
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	-5			V	$I_{EBO} = -1\mu\text{A}$
Collector-Emitter Cut-Off Current		I_{CES}			-20 -20	nA μA	$V_{CES} = -32\text{V}$ $V_{CES} = -32\text{V}$, $T_{amb} = 150^\circ\text{C}$
Emitter-Base Cut-Off Current		I_{EBO}			-20	nA	$V_{EBO} = -4\text{V}$
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$		-0.12	-0.25	V	$I_C = -10\text{mA}$, $I_B = -0.25\text{mA}$
				-0.25	-0.55	V	$I_C = -50\text{mA}$, $I_B = -1.25\text{mA}$
Base-Emitter Saturation Voltage		$V_{BE(SAT)}$	-0.60 -0.68	-0.70	-0.85	V	$I_C = -10\text{mA}$, $I_B = -0.25\text{mA}$
				-0.80	-1.05	V	$I_C = -50\text{mA}$, $I_B = -1.25\text{mA}$
Base-Emitter Voltage		V_{BE}	-0.6	-0.55		V	$I_C = -10\mu\text{A}$, $V_{CE} = -5\text{V}$
				-0.65		V	$I_C = -2\text{mA}$, $V_{CE} = -5\text{V}$
				-0.72	-0.75	V	$I_C = -50\text{mA}$, $V_{CE} = -1\text{V}$
						V	
Static Forward current transfer ratio	BCW61A	h_{FE}	120 60	140 170	220		$I_C = -10\mu\text{A}$, $V_{CE} = -5\text{V}$ $I_C = -2\text{mA}$, $V_{CE} = -5\text{V}$ $I_C = -50\text{mA}$, $V_{CE} = -1\text{V}$
	BCW61B	h_{FE}	30 180 80	200 250	310		$I_C = -10\mu\text{A}$, $V_{CE} = -5\text{V}$ $I_C = -2\text{mA}$, $V_{CE} = -5\text{V}$ $I_C = -50\text{mA}$, $V_{CE} = -1\text{V}$
	BCW61C	h_{FE}	40 250 100	270 350	460		$I_C = -10\mu\text{A}$, $V_{CE} = -5\text{V}$ $I_C = -2\text{mA}$, $V_{CE} = -5\text{V}$ $I_C = -50\text{mA}$, $V_{CE} = -1\text{V}$
	BCW61D	h_{FE}	100 380 110	340 500	630		$I_C = -10\mu\text{A}$, $V_{CE} = -5\text{V}$ $I_C = -2\text{mA}$, $V_{CE} = -5\text{V}$ $I_C = -50\text{mA}$, $V_{CE} = -1\text{V}$
Transition Frequency		f_T		180		MHz	$I_C = -10\text{mA}$, $V_{CE} = -5\text{V}$ $f = 100\text{MHz}$
Collector-Base Capacitance		C_{cbo}			6	pF	$V_{CBO} = -10\text{V}$, $f = 1\text{MHz}$
Emitter-Base Capacitance		C_{ebo}		11		pF	$V_{EBO} = -0.5\text{V}$, $f = 1\text{MHz}$
Noise Figure		N		2	6	dB	$I_C = -0.2\text{mA}$, $V_{CE} = -5\text{V}$ $R_G = 2\text{k}\Omega$, $f = 1\text{kHz}$ $\Delta f = 200\text{Hz}$
Switching times:		t_d		35		ns	$I_C : I_{B1} : I_{B2} = 10 : 1 : 1\text{mA}$ $R_1 = R_2 = 5\text{k}\Omega$ $V_{BB} = -3.6\text{V}$, $R_L = 990\Omega$
		t_r		50		ns	
		t_{on}		85	150	ns	
		t_s		400		ns	
		t_f		80		ns	
		t_{off}		480	800	ns	

FOUR TERMINAL NETWORK DATA ($I_C = 2\text{mA}$, $V_{CE} = 5\text{V}$, $f = 1\text{kHz}$)

	h_{FE} Group A			h_{FE} Group B			h_{FE} Group C			h_{FE} Group D			
	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
h_{11e}	1.6	2.7	4.5	2.5	3.6	6.0	3.2	4.5	8.5	4.5	7.5	12	K
h_{12e}		1.5			2			2			3		10^{-4}
h_{21e}		200			260			330			520		
h_{22e}		18	30		24	50		30	60		50	100	μS

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