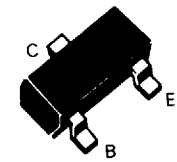
SOT23 PNP SILICON PLANAR SMALL SIGNAL TRANSISTORS

BCW61

PARTMARKING DETAILS:-

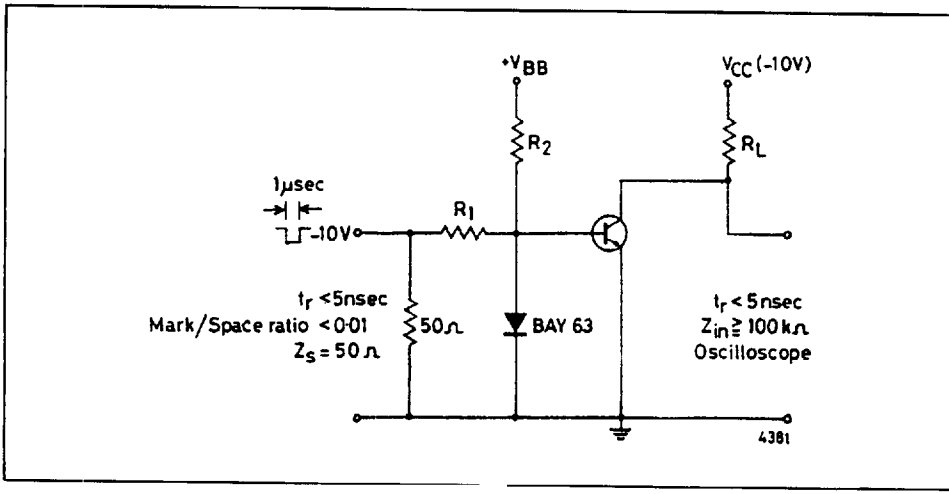
BCW61A – BA	BCW61AR – CA
BCW61B – BB	BCW61BR – CB
BCW61C – BC	BCW61CR – CC
BCW61D – BD	BCW61DR – CD



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 $T_{amb} = 25°C$	P_{TOT}	330	mW
Operating and Storage Temperature Range	tj:tstg	−55 to +150	°C

SWITCHING CIRCUIT



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

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

	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