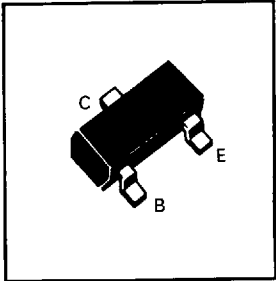


SOT23 NPN SILICON PLANAR
SMALL SIGNAL TRANSISTORS

BCW31
BCW32
BCW33

PARTMARKING DETAILS:-

- BCW31 - D1
- BCW32 - D2
- BCW33 - D3
- BCW31R - D4
- BCW32R - D5
- BCW33R - D6



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	32	V
Collector-Emitter Voltage ($I_C = 2.0\text{mA}$)	V_{ECO}	32	V
Emitter-Base Voltage	B_{EBO}	5	V
Collector Current	I_C	100	mA
Peak Pulse Current	I_{CM}	200	mA
Power Dissipation at $T_{amb} = 25^\circ\text{C}$	P_{TOT}	330	mW
Operating and Storage Temperature Range	$tj:tstg$	- 55 to + 150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ unless otherwise stated)

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Collector-Base Cut-Off Current		I_{CBO}			100 10	nA μA	$I_E = 0, V_{CB} = 20\text{V}$ $I_E = 0, V_{CB} = 20\text{V}$ $T_j = 100^\circ\text{C}$
Base-Emitter Voltage		V_{BE}	550		700	mV	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$		120 210	250	mV mV	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 50\text{mA}, I_B = 2.5\text{mA}$
Base-Emitter Saturation Voltage		$V_{BE(SAT)}$		750 850		mV mV	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 50\text{mA}, I_B = 2.5\text{mA}$
Static Forward Current Transfer Ratio	BCW31	h_{FE}	110	90	220		$I_C = 10\mu\text{A}, V_{CE} = 5\text{V}$ $I_C = 2\text{mA}, V_{CE} = 5\text{V}$
	BCW32	h_{FE}	200	150	450		$I_C = 10\mu\text{A}, V_{CE} = 5\text{V}$ $I_C = 2\text{mA}, V_{CE} = 5\text{V}$
	BCW33	h_{FE}	420	270	800		$I_C = 10\mu\text{A}, V_{CE} = 5\text{V}$ $I_C = 2\text{mA}, V_{CE} = 5\text{V}$
Transition Frequency		f_T		300		MHz	$I_C = 10\text{mA}, V_{CE} = 5\text{V}$ $f = 35\text{MHz}$
Collector Capacitance		C_{TC}			4	pF	$I_E = I_B = 0, V_{CB} = 10\text{V}$ $f = 1\text{MHz}$
Noise Figure		N			10	dB	$I_C = 200\mu\text{A}, V_{CE} = 5\text{V}$ $R_s = 2\text{k}\Omega, f = 1\text{kHz}$ $B = 200\text{Hz}$

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