T-29-15

NPN silicon planar medium power transistors

BCW65
BCW66

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	BCW65	BCW66	Unit
Collector-Emitter Voltage	V_{CES}	60	75	V
Collector-Emitter Voltage	V_{CEO}	32	45	V
Emitter-Base Voltage	V_{EBO}	5	5	V
Collector Current	I_C	800	800	mA
Peak Collector Current (10ms)	I_{CM}	1000	1000	mA
Base Current	I_B	100	100	mA

CHARACTERISTICS (at $T_j = 25°C$ unless otherwise stated).

Parameter		Symbol	BCW65 & BCW66			Unit	Test Conditions
			Min.	Typ.	Max.		
Collector-emitter breakdown voltage	BCW65	$V_{(BR)CEO}$	32	—	—	V	$I_{CEO} = 10mA$
	BCW66		45	—	—	V	$I_{CEO} = 10mA$
Collector-emitter breakdown voltage	BCW65	$V_{(BR)CES}$	60	—	—	V	$I_C = 10\mu A$
	BCW66		75	—	—	V	$I_C = 10\mu A$
Emitter-base breakdown voltage		$V_{(BR)EBO}$	5	—	—	V	$I_{EBO} = 10\mu A$
Collector-emitter cut-off current	BCW65	I_{CES}	—	—	20	nA	$V_{CES} = 32V$
			—	—	20	μA	$V_{CES} = 32V$, $T_{amb} = 150°C$
	BCW66	I_{CES}	—	—	20	nA	$V_{CES} = 45V$
			—	—	20	μA	$V_{CES} = 45V$, $T_{amb} = 150°C$
Emitter-base cut-off current		I_{EBO}	—	—	20	nA	$V_{EBO} = 4V$
Collector-emitter saturation voltage		$V_{CE(sat)}$	—	—	0.3	V	$I_C = 100mA$, $I_B = 10mA$
			—	—	0.7	V	$I_C = 500mA$, $I_B = 50mA$
Base-emitter saturation voltage		$V_{BE(sat)}$	—	—	2.0	V	$I_C = 500mA$, $I_B = 50mA$

CHARACTERISTICS (continued).

Parameter		Symbol	BCW65 & BCW66			Unit	Test Conditions
			Min.	Typ.	Max.		
Static forward current transfer ratio	BCW65A BCW66F	h_{FE}	35 75 100 35	— — 160 —	— — 250 —		$I_C = 100\mu A$, $V_{CE} = 10V$ $I_C = 10mA$, $V_{CE} = 1V$ $I_C = 100mA$, $V_{CE} = 1V$ $I_C = 500mA$, $V_{CE} = 2V$
	BCW65B BCW66G	h_{FE}	50 110 160 60	— — 250 —	— — 400 —		$I_C = 100\mu A$, $V_{CE} = 10V$ $I_C = 10mA$, $V_{CE} = 1V$ $I_C = 100mA$, $V_{CE} = 1V$ $I_C = 500mA$, $V_{CE} = 2V$
	BCW65C BCW66H	h_{FE}	80 180 250 100	— — 350 —	— — 630 —		$I_C = 100\mu A$, $V_{CE} = 10V$ $I_C = 10mA$, $V_{CE} = 1V$ $I_C = 100mA$, $V_{CE} = 1V$ $I_C = 500mA$, $V_{CE} = 2V$
Transition frequency		f_T	100	—	—	MHz	$I_C = 20mA$, $V_{CE} = 10V$ $f = 100MHz$
Collector-base capacitance		C_{cbo}	—	8	12	pF	$V_{CBO} = 10V$, $f = 1MHz$
Emitter-base capacitance		C_{ebo}	—	—	80	pF	$V_{EBO} = 0.5V$, $f = 1MHz$
Noise figure		N	—	2	10	dB	$I_C = 0.2mA$, $V_{CE} = 5V$ $R_g = 1k\Omega$, $f = 1kHz$ $\Delta f = 200Hz$
Switching times Turn-on time Turn-off time		 t_{on} t_{off}	 — —	 — —	 100 400	 ns ns	$I_C = 150mA$ $I_{B1} = -I_{B2} = 15mA$ $R_L = 150\Omega$

Devices are identified by a code on the body of the device

BCW65A	EA
BCW65B	EB
BCW65C	EC
BCW66F	EF
BCW66G	EG
BCW66H	EH
BCW65AR	4V
BCW65BR	5V
BCW65CR	6V
BCW66FR	7P
BCW66GR	5T
BCW66HR	7M