

MAXIMUM RATINGS

Rating	Symbol	BCW67	BCW68	Unit
Collector-Emitter Voltage	V_{CEO}	32	45	Vdc
Collector-Base Voltage	V_{CBO}	45	60	Vdc
Emitter-Base Voltage	V_{EBO}	5.0		Vdc
Collector Current — Continuous	I_C	800		mA dc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board,* $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Total Device Dissipation Alumina Substrate,** $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Junction and Storage Temperature	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

*FR-5 = $1.0 \times 0.75 \times 0.062$ in.**Alumina = $0.4 \times 0.3 \times 0.024$ in. 99.5% alumina.

DEVICE MARKING

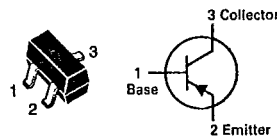
BCW67L = DD; BCW68L = DP; BCW67AL = DA; BCW67BL = DB;
BCW67CL = DC; BCW68FL = DF; BCW68GL = DH

MOTOROLA SC XSTRS/R F

BCW67L, AL, BL, CL
BCW68L, FL, GL

T-27-09

CASE 318-03, STYLE 6
SOT-23 (TO-236AB)



GENERAL PURPOSE
TRANSISTORS

PNP SILICON

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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage ($I_C = 10$ mA dc, $I_B = 0$)	$V_{(BR)CEO}$	32 45	— —	— —	Vdc
Collector-Emitter Breakdown Voltage ($I_C = 10$ μ A dc, $V_{EB} = 0$)	$V_{(BR)CES}$	45 60	— —	— —	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10$ μ A dc, $I_C = 0$)	$V_{(BR)EBO}$	5.0	—	—	Vdc
Collector Cutoff Current ($V_{CE} = 32$ Vdc, $I_E = 0$)	I_{CES}	—	—	20	nA dc
($V_{CE} = 45$ Vdc, $I_E = 0$)		—	—	20	nA dc
($V_{CE} = 32$ Vdc, $I_B = 0$, $T_A = 150^\circ\text{C}$)		—	—	10	μ A dc
($V_{CE} = 45$ Vdc, $I_B = 0$, $T_A = 150^\circ\text{C}$)		—	—	10	μ A dc
Emitter Cutoff Current ($V_{EB} = 4.0$ Vdc, $I_C = 0$)	I_{EBO}	—	—	20	nA dc

ON CHARACTERISTICS

DC Current Gain ($I_C = 10$ mA dc, $V_{CE} = 1.0$ Vdc)	BCW67L, AL, 68L, FL BCW67BL, 68GL BCW67CL	h_{FE}	75 120 180	— — —	— — —	—
($I_C = 100$ mA dc, $V_{CE} = 1.0$ Vdc)	BCW67L, AL, 68L, FL BCW67BL, 68GL BCW67CL		100 160 250	— — —	250 400 630	
($I_C = 300$ mA dc, $V_{CE} = 1.0$ Vdc)	BCW67L, AL, 68L, FL BCW67BL, 68GL BCW67CL		35 60 100	— — —	— — —	
Collector-Emitter Saturation Voltage ($I_C = 300$ mA dc, $I_B = 30$ mA dc)		$V_{CE(sat)}$	—	—	1.5	Vdc
Base-Emitter Saturation Voltage ($I_C = 500$ mA dc, $I_B = 50$ mA dc)		$V_{BE(sat)}$	—	—	2.0	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product ($I_C = 20$ mA dc, $V_{CE} = 10$ Vdc, $f = 100$ MHz)	f_T	100	—	—	—	MHz
Output Capacitance ($V_{CB} = 10$ Vdc, $I_E = 0$, $f = 1.0$ MHz)	C_{obo}	—	—	18	—	pF
Input Capacitance ($V_{EB} = 0.5$ Vdc, $I_C = 0$, $f = 1.0$ MHz)	C_{ibo}	—	—	105	—	pF
Noise Figure ($I_C = 0.2$ mA dc, $V_{CE} = 5.0$ Vdc, $R_S = 1.0$ k Ω , $f = 1.0$ kHz, BW = 200 Hz)	NF	—	—	10	—	dB

MOTOROLA SMALL-SIGNAL TRANSISTORS, FETs AND DIODES