

T-27-09

MAXIMUM RATINGS

Rating	Symbol	BC860	BC859	Unit
Collector-Emitter Voltage	V _{CEO}	45	30	V
Collector-Base Voltage	V _{CB0}	50	30	V
Emitter-Base Voltage	V _{EBO}	6.0	5.0	V
Collector Current --- Continuous	I _C	100	100	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board,* T _A = 25°C Derate above 25°C	P _D	225	mW
Thermal Resistance Junction to Ambient	R _{θJA}	417	°C/W
Total Device Dissipation Alumina Substrate,** T _A = 25°C Derate above 25°C	P _D	300	mW
Thermal Resistance Junction to Ambient	R _{θJA}	556	°C/W
Junction and Storage Temperature	T _J , T _{stg}	-55 to +150	°C

*FR-5 = 1.0 x 0.75 x 0.062 in.

**Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

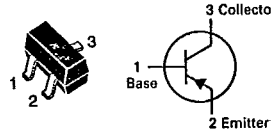
DEVICE MARKING

BC859AL = 4A; BC859BL = 4B; BC859CL = 4C; BC860AL = 4E;
BC860BL = 4F; BC860CL = 4G

MOTOROLA SC XSTRS/R F

BC859AL, BL, CL
BC860AL, BL, CL

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



LOW NOISE TRANSISTORS

PNP SILICON

Refer to BC559 for graphs.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit	
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	45	—	—	V	
BC860 Series BC859 Series		30	—	—	V	
Collector-Emitter Breakdown Voltage (V _{EB} = 0)	V _{(BR)CES}	50	—	—	V	
BC860 Series BC859 Series		30	—	—	V	
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	5.0	—	—	V	
Collector Cutoff Current (V _{CB} = 30 V, I _E = 0) (V _{CB} = 30 V, T _A = 150°C)	I _{CBO}	—	—	15 5.0	nA μA	
ON CHARACTERISTICS						
DC Current Gain (I _C = 10 μA, V _{CE} = 5.0 V)	h _{FE}	—	90	—	—	
(I _C = 2.0 mA, V _{CE} = 5.0 V)		BC859AL, BC860AL BC859BL, BC860BL BC859CL, BC860CL	—	150	—	—
		BC859AL, BC860AL BC859BL, BC860BL BC859CL, BC860CL	110 200 420	180 290 520	220 450 800	—
Collector-Emitter Saturation Voltage (I _C = 10 mA, I _B = 0.5 mA) (I _C = 100 mA, I _B = 5.0 mA)	V _{CE(sat)}	—	—	0.25 0.6	V	
Base-Emitter Saturation Voltage (I _C = 10 mA, I _B = 0.5 mA) (I _C = 100 mA, I _B = 5.0 mA)	V _{BE(sat)}	—	0.7 0.9	—	V	
Base-Emitter On Voltage (I _C = 2.0 mA, V _{CE} = 5.0 V) (I _C = 10 mA, V _{CE} = 5.0 V)	V _{BE(on)}	0.58	—	0.7 0.77	V	
SMALL-SIGNAL CHARACTERISTICS						
Current-Gain Bandwidth Product (I _C = 10 mA, V _{CE} = 5.0 Vdc, f = 35 MHz)	f _T	100	—	—	MHz	
Output Capacitance (V _{CB} = 10 V, f = 1.0 MHz)	C _{obo}	—	—	4.5	pF	
Noise Figure (I _C = 0.2 mAdc, V _{CE} = 5.0 Vdc, R _S = 2.0 kΩ, f = 1.0 kHz, BW = 200 Hz)	N _F	—	—	4.0	dB	