

MAXIMUM RATINGS

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

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board,* T _A = 25°C Derate above 25°C	P _D	225 1.8	mW mW/°C
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 2.4	mW mW/°C
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

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage BC860 Series BC859 Series	V _{(BR)CEO}	45 30	— —	— —	V
Collector-Emitter Breakdown Voltage (V _{EB} = 0) BC860 Series BC859 Series	V _{(BR)CES}	50 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) BC859AL, BC860AL BC859BL, BC860BL BC859CL, BC860CL	h _{FE}	— — —	90 150 270	— — —	—
(I _C = 2.0 mA, V _{CE} = 5.0 V) 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 mA, V _{CE} = 5.0 Vdc, R _S = 2.0 kΩ, f = 1.0 kHz, BW = 200 Hz)	N _F	—	—	4.0	dB

12E D

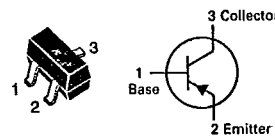
6367254 0085887 7

T-27-09

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.

MOTOROLA SMALL-SIGNAL TRANSISTORS, FETs AND DIODES