

T-27-09

DATE 1-1-1984

MAXIMUM RATINGS

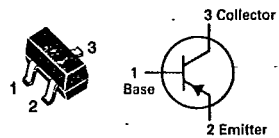
Rating	Symbol	BC856	BC857	BC858	Unit
Collector-Emitter Voltage	V _{CEO}	65	45	30	V
Collector-Base Voltage	V _{CBO}	80	50	30	V
Emitter-Base Voltage	V _{EBO}	5.0	5.0	5.0	V
Collector Current — Continuous	I _C	100	100	100	mA

BC856AL, BL
BC857AL, BL, CL
BC858AL, BL, CL

THERMAL CHARACTERISTICS MOTOROLA SC XSTRS/R F

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}	556	°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}	417	°C/W
Junction and Storage Temperature	T _J , T _{stg}	-55 to +150	°C

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



GENERAL PURPOSE
TRANSISTORS

PNP SILICON

Refer to BC556 for graphs.

*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

BC856AL = 3A; BC856BL = 3B; BC857AL = 3E; BC857BL = 3F; BC857CL = 3G;
 BC858AL = 3J; BC858BL = 3K; BC858CL = 3L

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (I _C = 10 mA)	BC856 Series BC857 Series BC858 Series	V _{(BR)CEO}	65 45 30	—	—	V
Collector-Emitter Breakdown Voltage (I _C = 10 μA, V _{EB} = 0)	BC856 Series BC857 Series BC858 Series	V _{(BR)CES}	80 50 30	—	—	V
Collector-Base Breakdown Voltage (I _C = 10 μA)	BC856 Series BC857 Series BC858 Series	V _{(BR)CBO}	80 50 30	—	—	V
Emitter-Base Breakdown Voltage (I _E = 1.0 μA)	BC856 Series BC857 Series BC858 Series	V _{(BR)EBO}	5.0 5.0 5.0	—	—	V
Collector Cutoff Current (V _{CB} = 30 V) (V _{CB} = 30 V, T _A = 150°C)		I _{CBO}	—	—	15 4.0	nA μA

ON CHARACTERISTICS

DC Current Gain (I _C = 10 μA, V _{CE} = 5.0 V)	BC856AL, BC857AL, BC858AL BC856BL, BC857BL, BC858BL BC857CL, BC858CL	h _{FE}	—	90 150 270	—	—
(I _C = 2.0 mA, V _{CE} = 5.0 V)	BC856AL, BC857AL, BC858AL BC856BL, BC857BL, BC858BL BC857CL, BC858CL		125 220 420	180 290 520	250 475 800	—
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)}	—	—	0.3 0.65	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)}	0.6	—	0.75 0.82	V

SMALL-SIGNAL CHARACTERISTICS

Current-Gain Bandwidth Product (I _C = 10 mA, V _{CE} = 5.0 Vdc, f = 100 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	—	—	10	dB