

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED


BC859B-MS/BC859C-MS/BC860B-MS/BC860C-MS

Product specification

Features

- Low current (max. 100 mA)
- Low voltage (max. 45 V).
- NPNcomplements:BC849-MSandBC850-MS

Reference News

PACKAGE OUTLINE	
	1. BASE 2. EMITTER 3. COLLECTOR
SOT-23	

MARKING

BC859B-MS	BC859C-MS	BC860B-MS	BC860C-MS
4B	4C	4F	4G
Range:220-475	Range:420-800	Range:220-475	Range:420-800

Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CBO}	-30	V
		-50	
Collector - Emitter Voltage	V _{CEO}	-30	
		-45	
Emitter - Base Voltage	V _{EB0}	-5	
Collector Current - Continuous	I _C	-100	mA
Peak Collector Current	I _{CM}	-200	
Peak Base Current	I _{BM}	-200	
Collector Power Dissipation (Note.1)	P _C	250	mW
Thermal Resistance From Junction to Ambient (Note.1)	R _{thja}	500	K/W
Junction Temperature	T _J	150	°C
Storage Temperature range	T _{stg}	-55 to 150	

Note.1: Transistor mounted on an FR4 printed-circuit board.

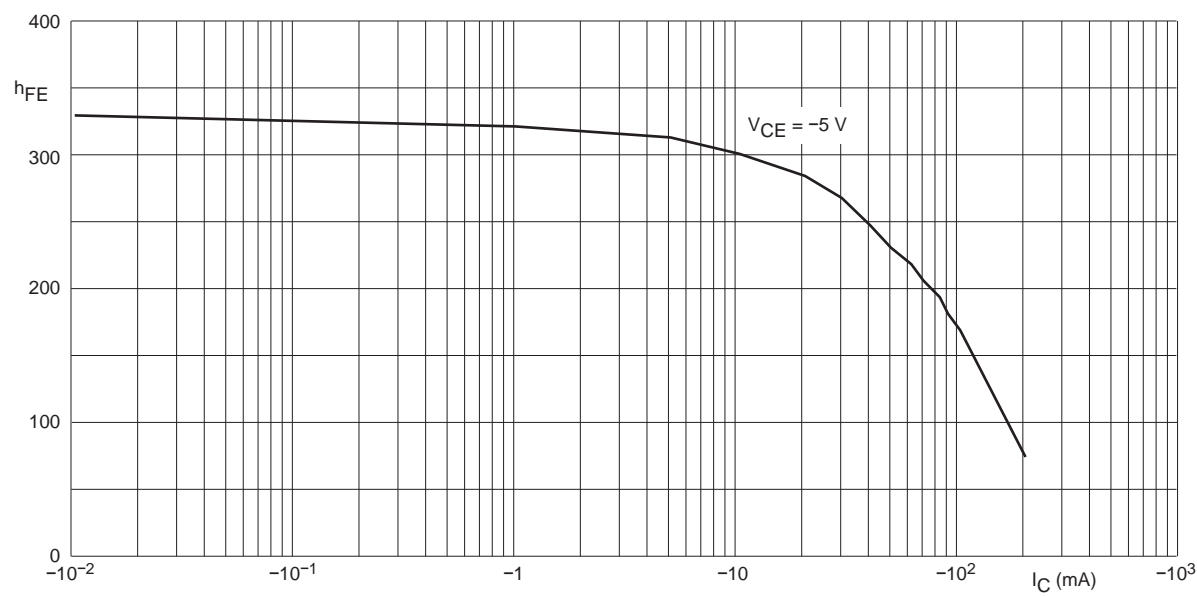
Electrical Characteristics Ta = 25 °C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage BC859*-MS BC860*-MS	V _{CBO}	I _C = -100 μA, I _E =0	-30			V
			-50			
Collector- emitter breakdown voltage BC859*-MS BC860*-MS	V _{CEO}	I _C = -1 mA, I _B =0	-30			
			-45			
Emitter - base breakdown voltage	V _{EBO}	I _E = -100 μA, I _C =0	-5			
Collector-base cut-off current	I _{CBO}	V _{CB} = -30 V, I _E =0		-1	-15	nA
		V _{CB} = -30 V, I _E =0, T _J = 150 °C			-4	uA
Emitter cut-off current	I _{EBO}	V _{EB} = -5V, I _C =0			-100	nA
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =-10 mA, I _B =-0.5mA		-75	-300	mV
		I _C =-100 mA, I _B =-5mA		-250	-600	
Base - emitter saturation voltage	V _{BE(sat)}	I _C =-10 mA, I _B =-0.5mA (Note.1)		-700		
		I _C =-100 mA, I _B =-5mA (Note.1)		-850		
Base - emitter voltage	V _{BE}	V _{CE} = -5V, I _C = -2mA (Note.2)	-600	-650	-750	
		V _{CE} = -5 V, I _C = -10mA (Note.2)			-820	
DC current gain BC859B-MS:BC860B-MS BC859C-MS:BC860C-MS	h _{FE}	V _{CE} = -5V, I _C = -2mA	220		475	
			420		800	
Collector capacitance	C _c	V _{CB} = -10V, I _E =I _C = 0, f=1MHz		4.5		pF
Emitter capacitance	C _e	V _{EB} = -0.5 V, I _C =I _C = 0, f=1MHz		10		
Noise Figure	NF	V _{CE} = -5V, I _C = -200uA, RS=2KΩ f=30HZ to 15KHz			4	dB
		V _{CE} = -5V, I _C = -200uA, RS=2KΩ f=1 KHz, B=200HZ			4	
Transition frequency	f _T	V _{CE} = -5V, I _C = -10mA, f=100MHz	100			MHz

Note.1: V_{BE(sat)} decreases by about -1.7 mV/K with increasing temperature. Note.

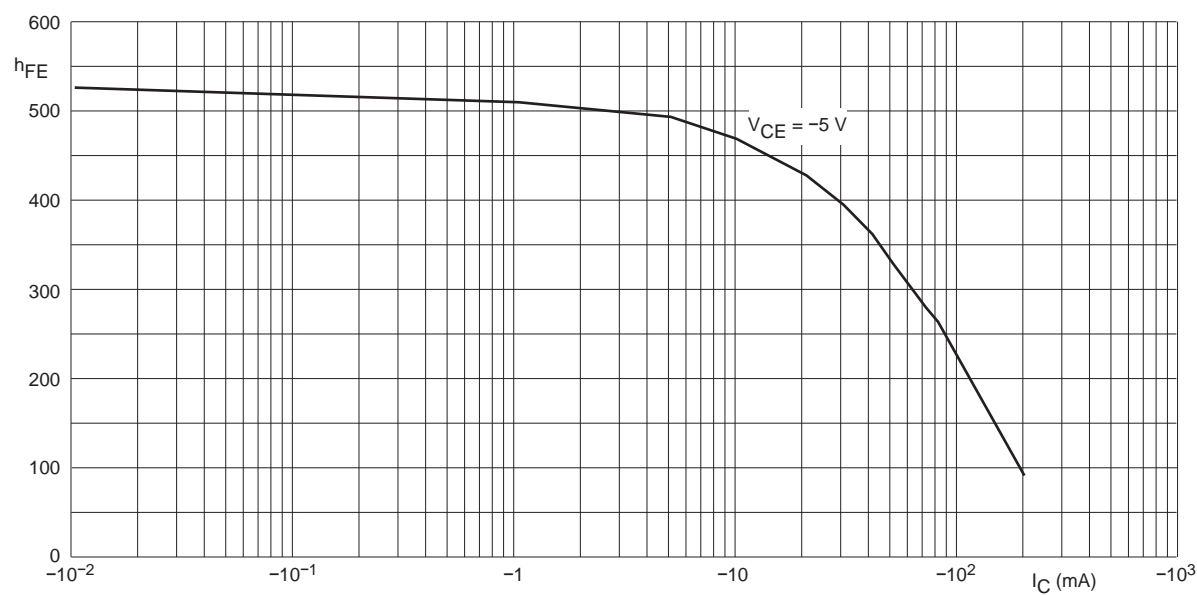
2: V_{BE} decreases by about -2 mV/K with increasing temperature.

Typical Characteristics



BC859B; BC860B.

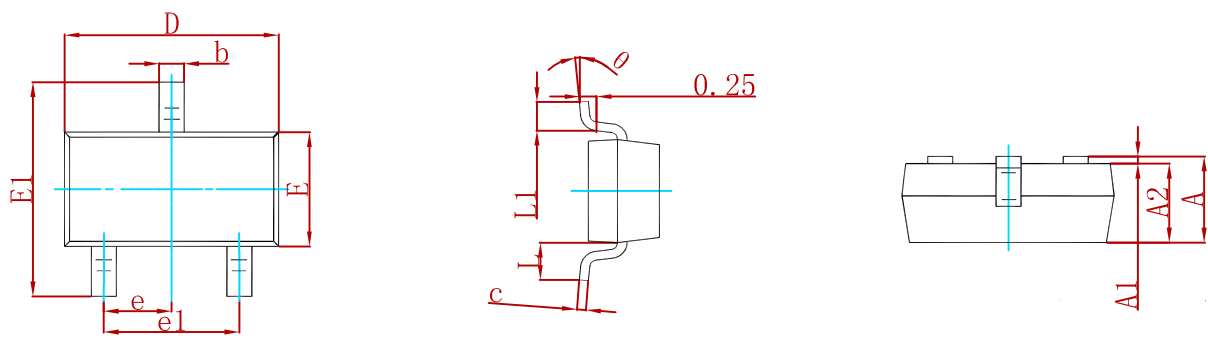
Fig.2 DC current gain; typical values.



BC859C; BC860C.

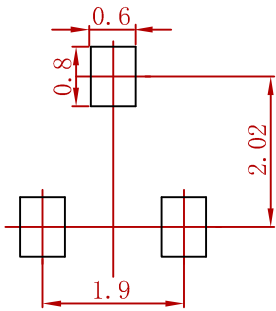
Fig.3 DC current gain; typical values.

PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

REELSPECIFICATION

P/N	PKG	QTY
BC589*-MS/BC860*-MS	SOT-23	3000

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