

Features

- Low current (max. 100 mA)
- Low voltage (max. 45 V).
- PNP complements: BC859 and BC860.



SOT-23

Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CB0}	50	V
Collector - Emitter Voltage	V _{CE0}	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	V _{CB0}	I _c = 100 μA, I _E = 0	50			V
Collector- emitter breakdown voltage	V _{CEO}	I _c = 1 mA, I _B = 0	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			15	nA
		V _{CB} = 30 V, I _E = 0, T _J =150°C			5	μA
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 (Note.1)		90	250	mV
		I _C =100 mA, I _B =5mA (Note.1)		200	500	
Base - emitter saturation voltage	V _{BE(sat)}	I _C =10 mA, I _B =0.5mA (Note.2)		700		
		I _C =100 mA, I _B =5mA (Note.2)		900		
Base-Emitter Voltage	V _{BE}	I _C =2 mA, V _{CE} =5V (Note.2)	580	660	700	
		I _C =10 mA, V _{CE} =5V (Note.2)			770	
DC current gain	h _{FE}	V _{CE} = 5V, I _C = 10μA		450		
DC current gain		V _{CE} = 5V, I _C = 2mA	420	520	800	
Collector capacitance	C _c	V _{CB} = 10V, I _C =I _c = 0, f=1MHz		2.5		pF
Emitter capacitance	C _e	V _{EB} = 0.5V, I _E =I _e = 0, f=1MHz		11		
Noise Figure	NF	I _C =200μA, V _{CE} =5V, R _S =2KΩ; f=10Hz to 15.7KHz			4	dB
		I _C =200μA, V _{CE} =5V, R _S =2KΩ; f=1KHz, 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.

 Classification of h_{FE}

Type	BC850C,215-JSM
Range	420-800
Marking	2G*

Typical Characteristics

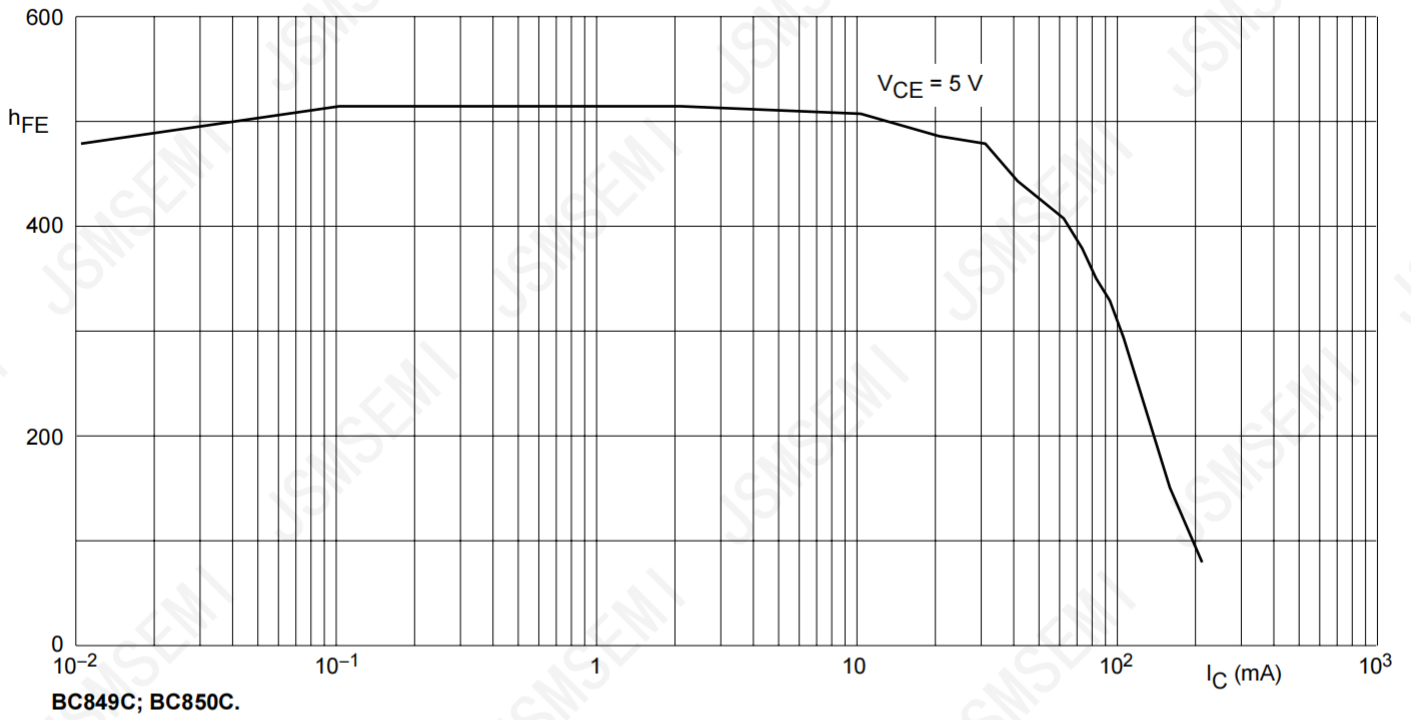
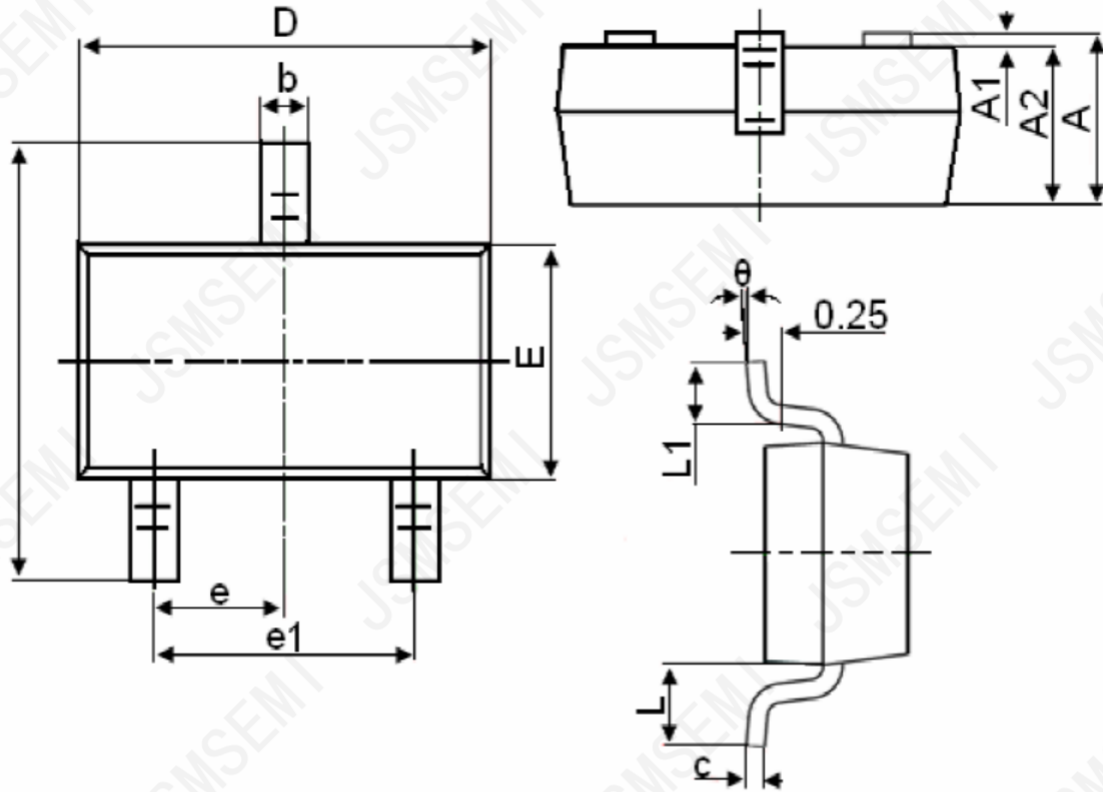


Fig.2 DC current gain; typical values.

Package Information

SOT-23



Symbol	Dimensions in Millimeters(mm)		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	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

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