

# MSKSEMI

SEMICONDUCTOR



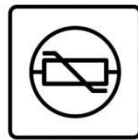
ESD



TVS



TSS



MOV

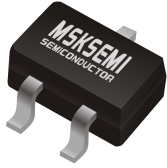


GDT

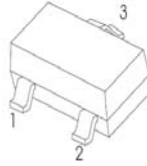


PLED

Product data sheet



SOT - 23



1. BASE
2. EMITTER
3. COLLECTOR

**FEATURES**

Ideally suited for automatic insertion  
For switching and AF amplifier applications

**DEVICE MARKING**

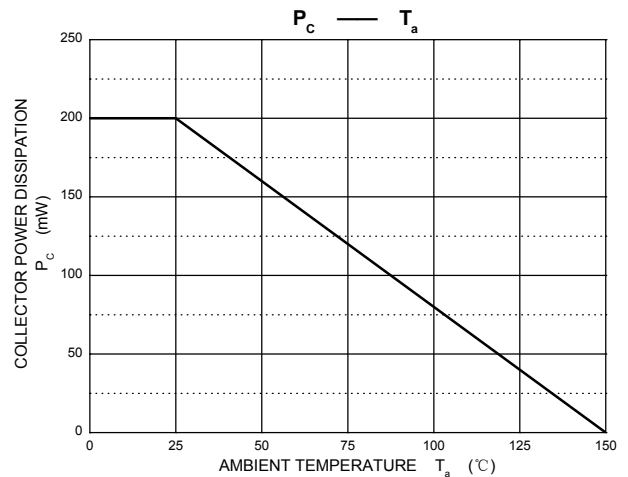
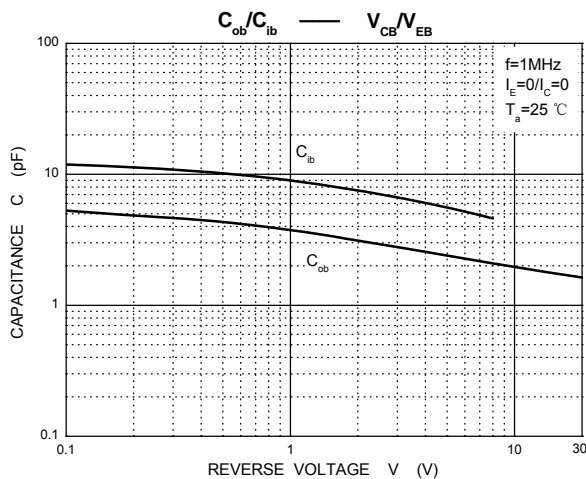
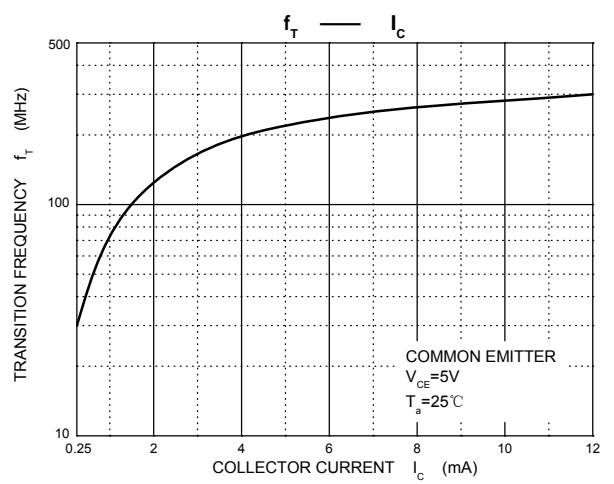
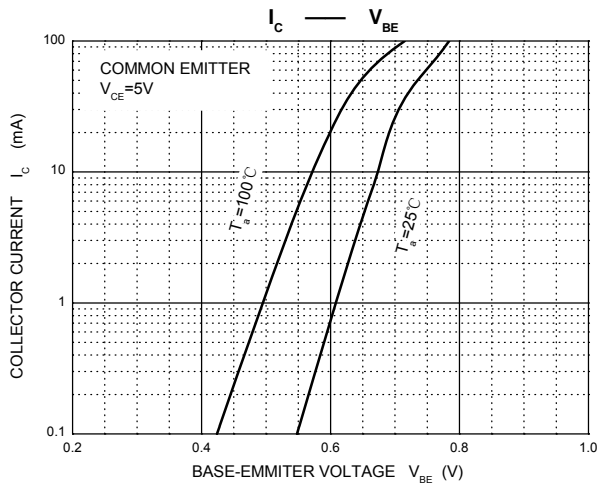
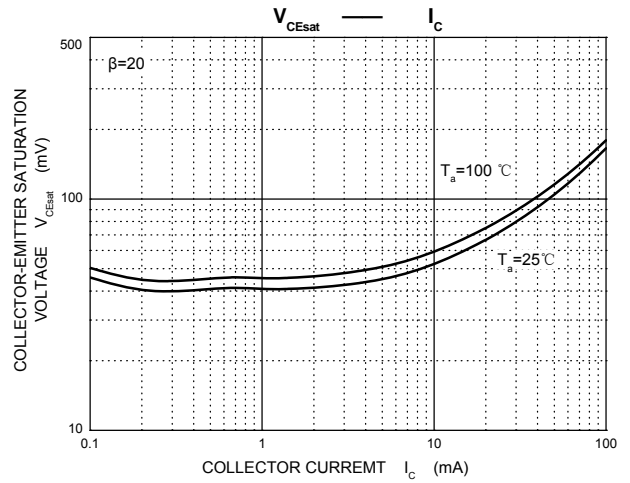
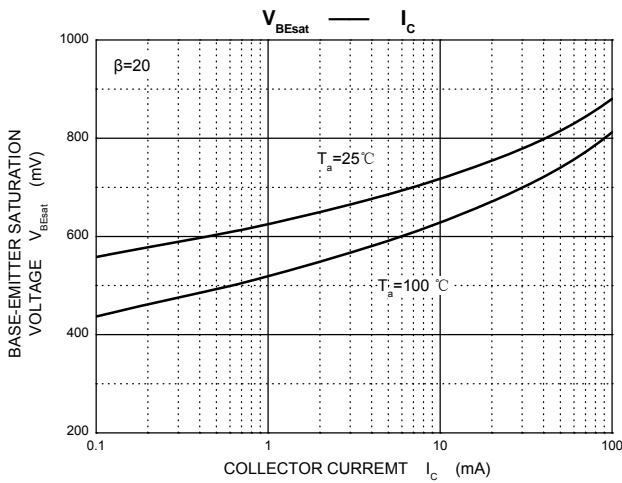
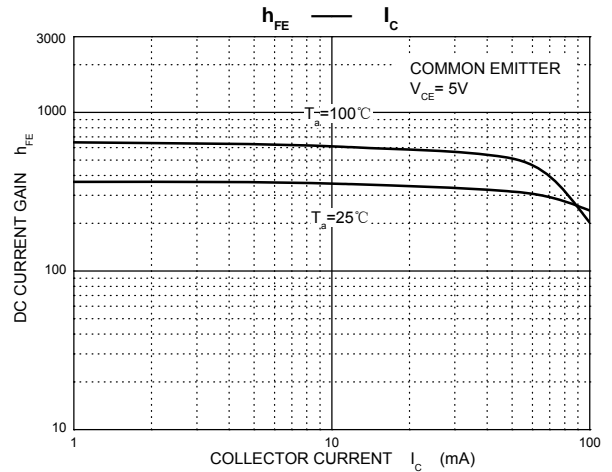
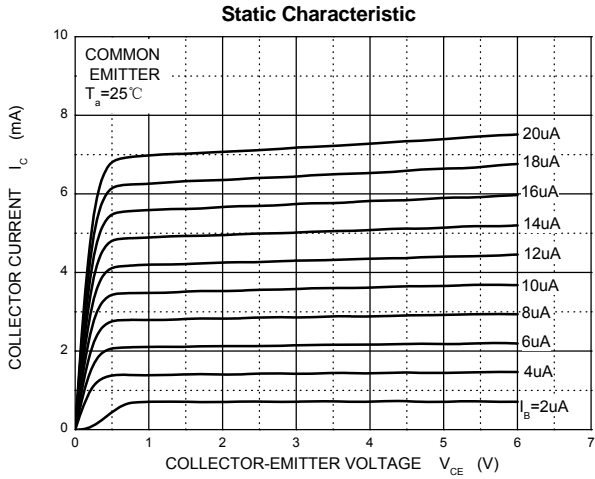
P/N	MARK	P/N	MARK	P/N	MARK
BC846A	1A	BC847A	1E	BC848A	1J
BC846B	1B	BC847B	1F	BC848B	1K
BC846C	1C	BC847C	1G	BC848C	1L

**MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**

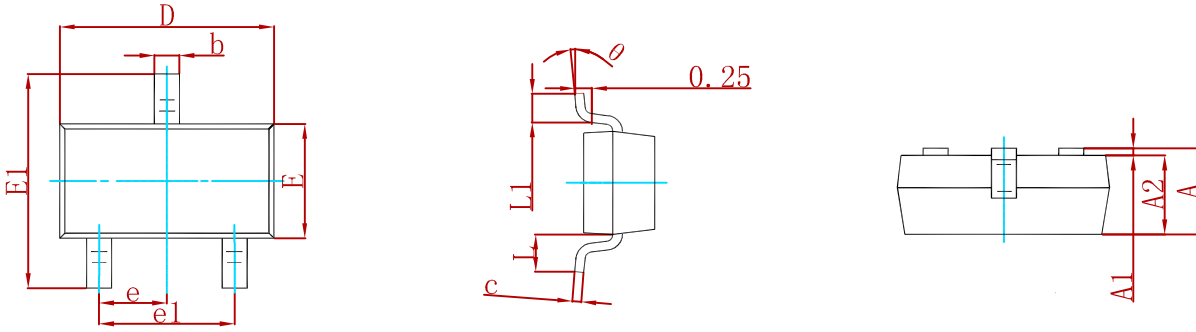
Symbol	Parameter	Value	Unit
<b>V<sub>CBO</sub></b>	Collector-Base Voltage	BC846	80
		BC847	50
		BC848	30
<b>V<sub>CEO</sub></b>	Collector-Emitter Voltage	BC846	65
		BC847	45
		BC848	30
<b>V<sub>EBO</sub></b>	Emitter-Base Voltage	6	V
<b>I<sub>C</sub></b>	Collector Current –Continuous	0.1	A
<b>P<sub>C</sub></b>	Collector Power Dissipation	200	mW
<b>R<sub>θJA</sub></b>	Thermal Resistance From Junction To Ambient	625	°C/W
<b>T<sub>J</sub></b>	Junction Temperature	150	°C
<b>T<sub>stg</sub></b>	Storage Temperature	-55~+150	°C

**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BC846 BC847 BC848	V <sub>CBO</sub> I <sub>C</sub> = 10μA, I <sub>E</sub> =0	80 50 30			V
Collector-emitter breakdown voltage	BC846 BC847 BC848	V <sub>CEO</sub> I <sub>C</sub> = 10mA, I <sub>B</sub> =0	65 45 30			V
Emitter-base breakdown voltage		V <sub>EBO</sub> I <sub>E</sub> = 10μA, I <sub>C</sub> =0	6			V
Collector cut-off current	BC846 BC847 BC848	I <sub>CBO</sub> V <sub>CB</sub> =70 V, I <sub>E</sub> =0 V <sub>CB</sub> =50 V, I <sub>E</sub> =0 V <sub>CB</sub> =30 V, I <sub>E</sub> =0			0.1	μA
Collector cut-off current	BC846 BC847 BC848	I <sub>CEO</sub> V <sub>CE</sub> =60 V, I <sub>B</sub> =0 V <sub>CE</sub> =45 V, I <sub>B</sub> =0 V <sub>CE</sub> =30 V, I <sub>B</sub> =0			0.1	μA
Emitter cut-off current		I <sub>EBO</sub> V <sub>EB</sub> =5 V, I <sub>C</sub> =0			0.1	μA
DC current gain	BC846A,847A,848A BC846B,847B,848B BC846C,BC847C,BC848C	h <sub>FE</sub> V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA	110 200 420		220 450 800	
Collector-emitter saturation voltage		V <sub>CE(sat)</sub> I <sub>C</sub> =100mA, I <sub>B</sub> = 5mA			0.5	V
Base-emitter saturation voltage		V <sub>BE(sat)</sub> I <sub>C</sub> =100mA, I <sub>B</sub> = 5mA			1.1	V
Transition frequency		f <sub>T</sub> V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10mA f=100MHz	100			MHz
Collector output capacitance		C <sub>ob</sub> V <sub>CB</sub> =10V,f=1MHz			4.5	pF

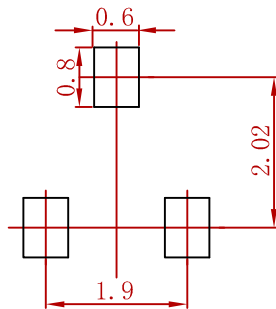


**PACKAGE MECHANICAL DATA**



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.

**REEL SPECIFICATION**

P/N	PKG	QTY
BC846/BC847/BC848	SOT-23	3000

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