MSKSEMI
SEMICONDUCTOR

| ESD | TVS | TSS | MOV | GDT | PLED |

Product data sheet

MSKSEMI SEMICONDUCTOR

SOT-89

1. BASE

2. COLLECTOR

3. EMITTER
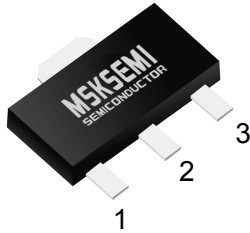
FEATURES

- **Low $V_{CE(sat)}$: -0.2V(Typ) I_C/I_B=-500mA/-50mA**
- **Compliments 2SD1664**

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-32	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-1	A
P_C	Collector Power Dissipation	500	mW
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-50μA,I_E=0	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA,I_B=0	-32			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-50μA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-20V,I_E=0			-0.5	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-4V,I_C=0			-0.5	μA
DC current gain	h_{FE}	V_{CE}=-3V,I_C=-100mA	82		390	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-500mA,I_B=-50mA		-0.2	-0.5	V
Transition frequency	f_T	V_{CE}=-5V,I_C=-50mA,f=30MHz		150		MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V,I_E=0,f=1MHz		20	30	pF

CLASSIFICATION OF h_{FE}

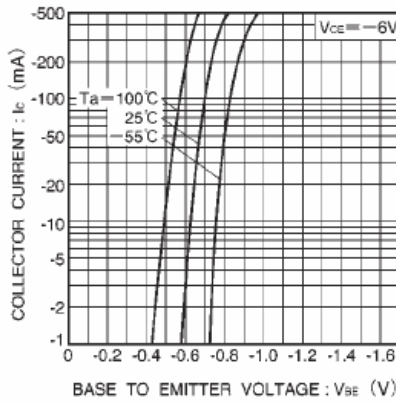| Rank	P	Q	R
Range	82-180	120-270	180-390
Marking	BAP	BAQ	BAR

Typical Characteristics
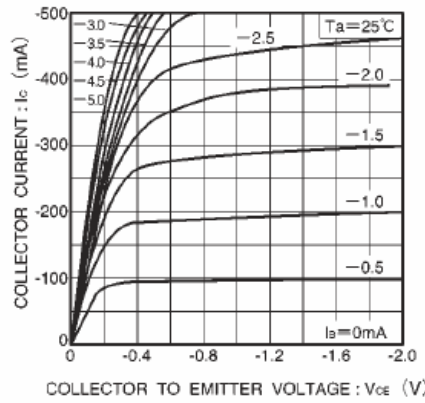
Fig.1   Grounded emitter propagation characteristics
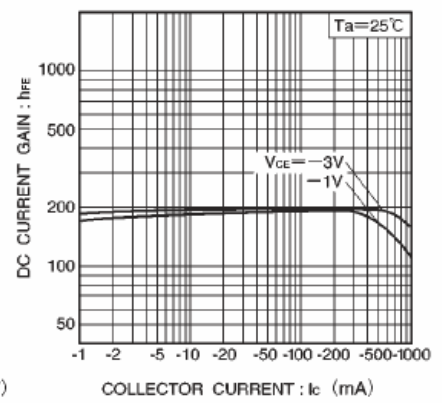
Fig.2   Grounded emitter output characteristics
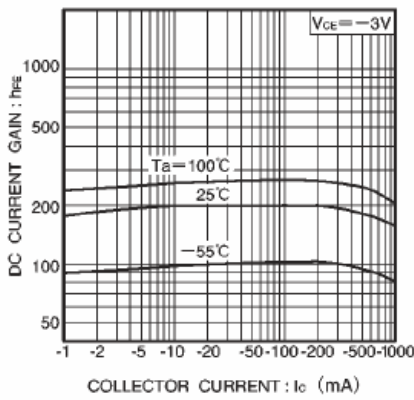
Fig.3   DC current gain vs. collector current（Ⅰ）

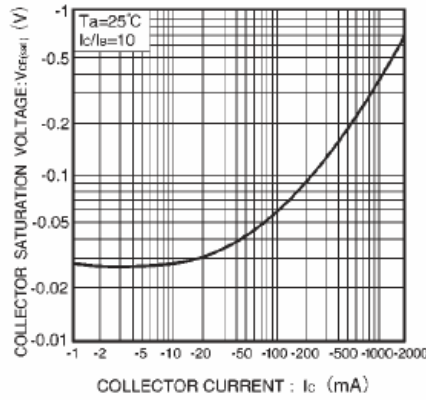Fig.4   DC current gain vs. collector current（Ⅱ）

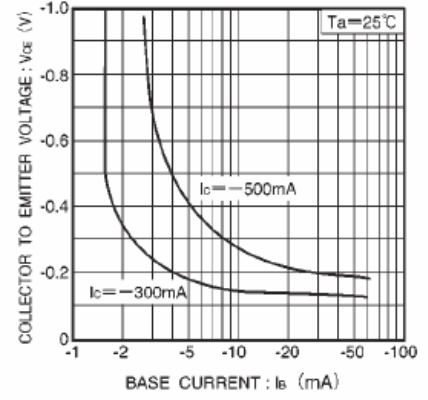Fig.5   Collector-emitter saturation voltage vs. collector current

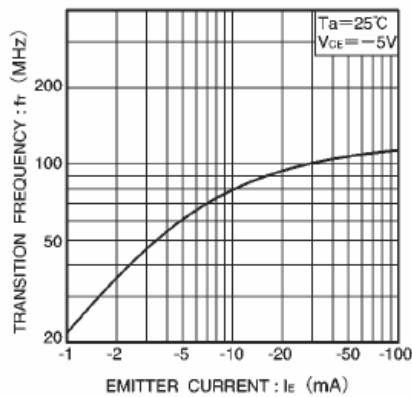Fig.6   Collector-emitter saturation voltage vs. base current

Fig.7   Gain bandwidth product vs. emitter current
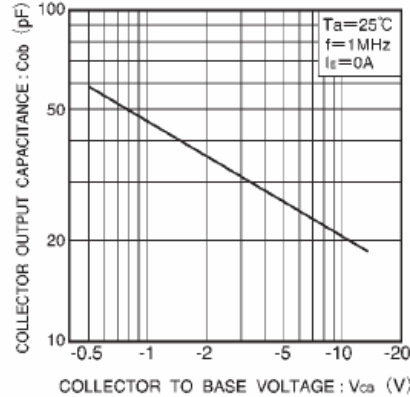
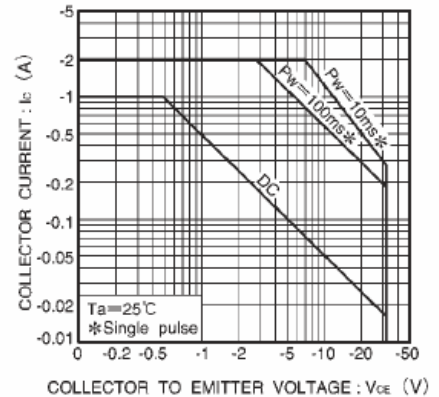Fig.8   Collector output capacitance vs. collector-base voltage
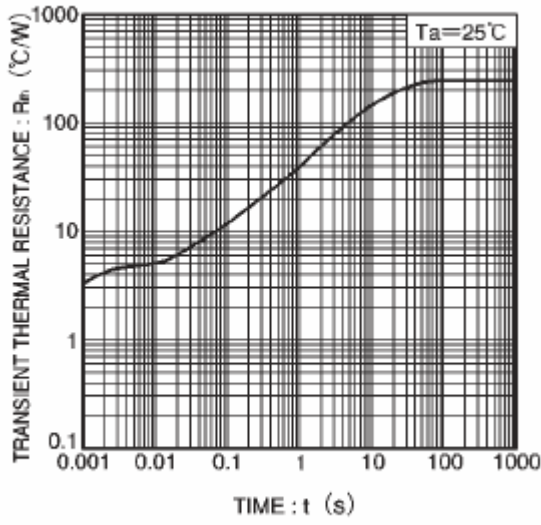
Fig.9   Safe operation area

Fig.10   Transient thermal resistance

PACKAGE MECHANICAL DATA
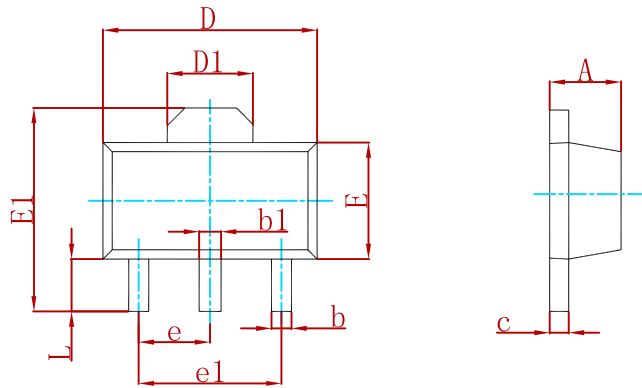
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

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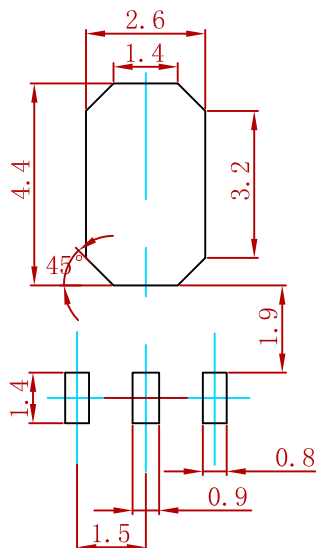
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
2SB1132	SOT-89	1000

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