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SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



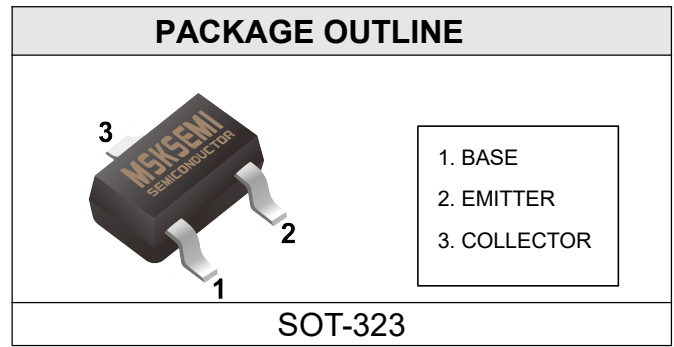
PLED

MMST3904

Product specification

FEATURES

- Complementary to MMST3906

Reference News

MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

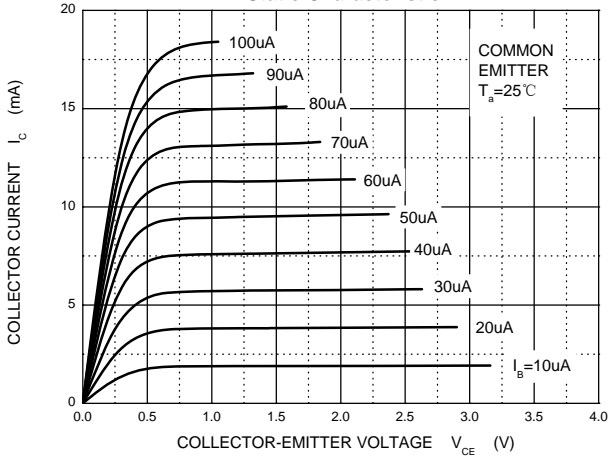
Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	60	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EBO}	Emitter-Base Voltage	5	V
I _c	Collector Current	200	mA
P _c	Collector Power Dissipation	200	mW
R _{θJA}	Thermal Resistance From Junction To Ambient	625	°C/W
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55 ~ +150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

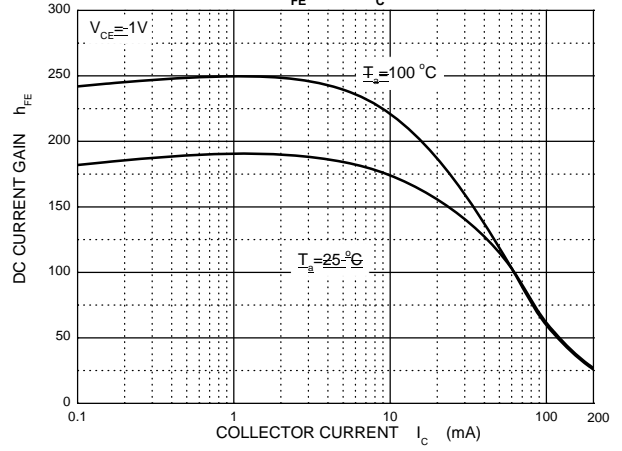
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO} *	I _c =10μA, I _E =0	60			V
Collector-emitter breakdown voltage	V _{(BR)CEO} *	I _c =1mA, I _B =0	40			V
Emitter-base breakdown voltage	V _{(BR)EBO} *	I _E =10μA, I _c =0	5			V
Collector cut-off current	I _{CBO} *	V _{CB} =60V, I _E =0			60	nA
Collector cut-off current	I _{CEX}	V _{CE} =30V, V _{BE(off)} =3V			50	nA
DC current gain	h _{FE} *	V _{CE} =1V, I _c =100μA	40			
		V _{CE} =1V, I _c =1mA	70			
		V _{CE} =1V, I _c =10mA	100		300	
		V _{CE} =1V, I _c =50mA	60			
Collector-emitter saturation voltage	V _{CE(sat)} *	I _c =10mA, I _B =1mA			0.25	V
		I _c =50mA, I _B =5mA			0.3	V
Base-emitter saturation voltage	V _{BE(sat)} *	I _c =10mA, I _B =1mA			0.85	V
		I _c =50mA, I _B =5mA			0.95	V
Transition frequency	f _T	V _{CE} =20V, I _c =10mA, f=100MHz	300			MHz
Collector output capacitance	C _{ob}	V _{CB} =5V, I _E =0, f=1MHz			4	pF
Collector output capacitance	C _{ib}	V _{EB} =0.5V, I _E =0, f=1MHz			8	pF
Delay time	t _d	V _{CC} =3V, V _{BE(off)} =0.5V			35	ns
Rise time	t _r	I _c =10mA, I _{B1} =1mA			35	ns
Storage time	t _s				225	ns
Fall time	t _f	V _{CC} =3V, I _c =10mA, I _{B1} =I _{B2} =1mA			75	ns

*Pulse test: pulse width ≤300μs, duty cycle ≤ 2.0%.

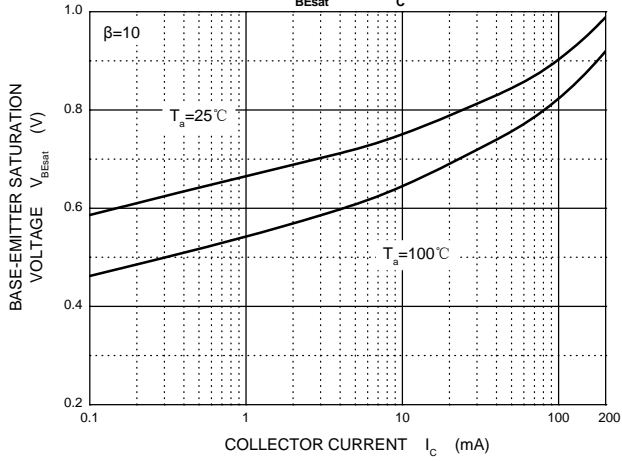
Static Characteristic



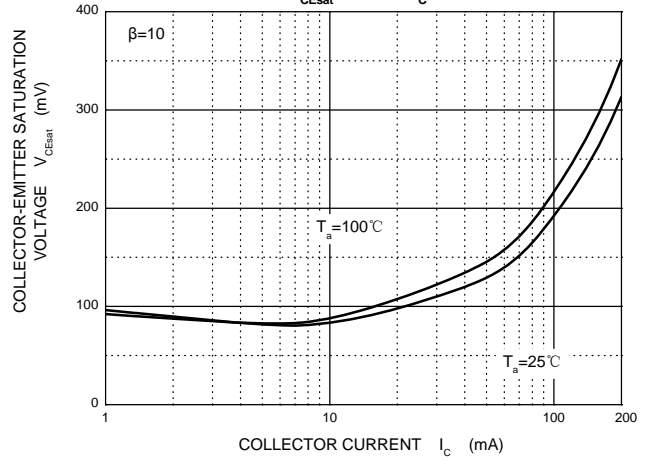
$h_{FE} - I_c$



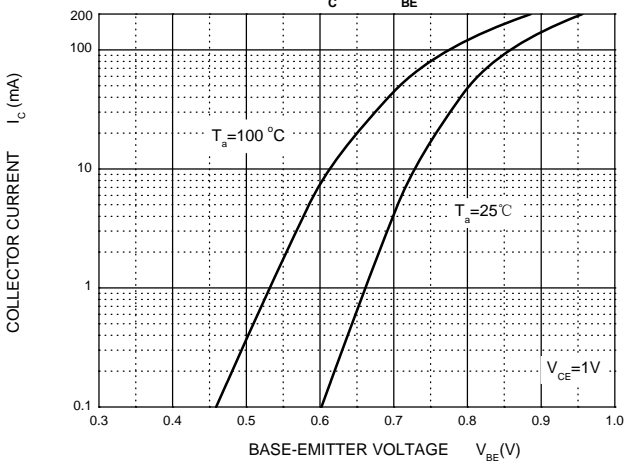
$V_{BEsat} - I_c$



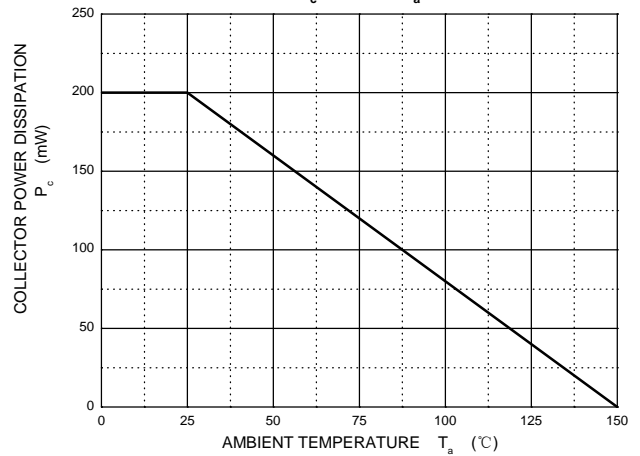
$V_{CEsat} - I_c$



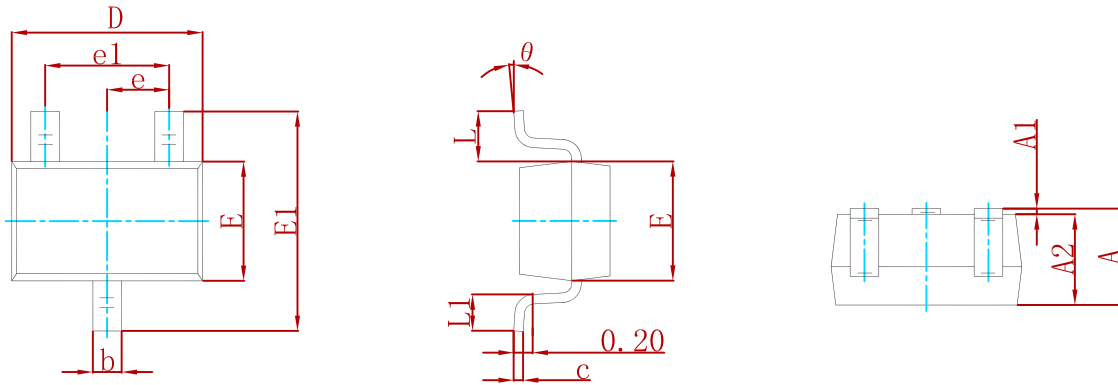
$I_c - V_{BE}$



$P_c - T_a$

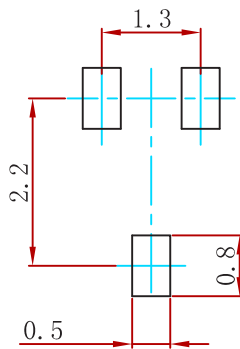


PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
MMST3904	SOT-323	3000

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