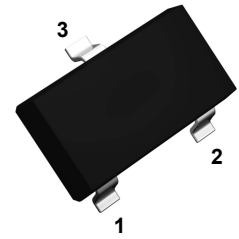


Features

- Complementary to MMST3906

Absolute Maximum Ratings (T_A = 25 °C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	60	V
Collector-Emitter Voltage	V _{CEO}	40	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current	I _C	200	mA
Collector Power Dissipation	P _C	200	mW
Thermal Resistance from Junction to Ambient	R _{θJA}	625	°C/W
Junction Temperature	T _J	-55 to +150	°C
Storage Temperature	T _{STG}	-55 to +150	°C



SOT-323

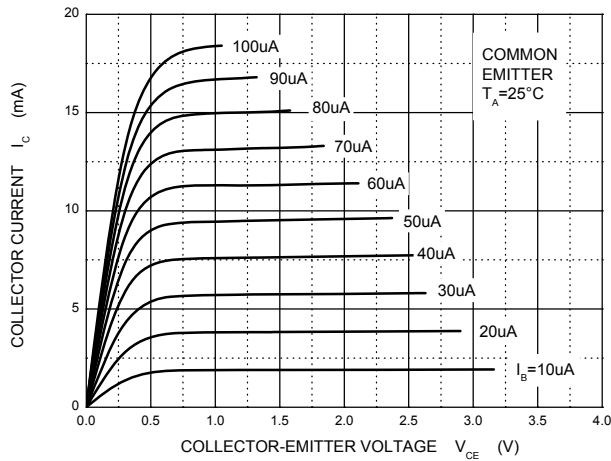
1. BASE
2. EMITTER
3. COLLECTOR

Electrical Characteristics (T_A = 25 °C unless otherwise noted)

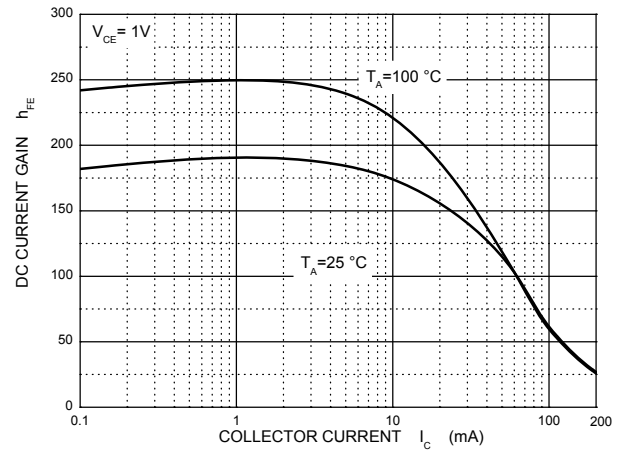
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	V _{(BR)CBO} *	I _C =10μA, I _E =0	60	-	-	V
Collector-Emitter Breakdown Voltage	V _{(BR)CEO} *	I _C =1mA, I _B =0	40	-	-	V
Emitter-Base Breakdown Voltage	V _{(BR)EBO} *	I _E =10μA, I _C =0	5	-	-	V
Collector Cut-off Current	I _{CBO} *	V _{CB} =60V, I _E =0	-	-	60	nA
Collector Cut-off Current	I _{CE}	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, I _C =10mA,	-	-	35	nS
Rise Time	t _r	I _{B1} =1mA	-	-	35	nS
Storage Time	t _s	V _{CC} =3V, I _C =10mA, I _{B1} = I _{B2} =1mA	-	-	225	nS
Fall Time	t _f		-	-	75	nS

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

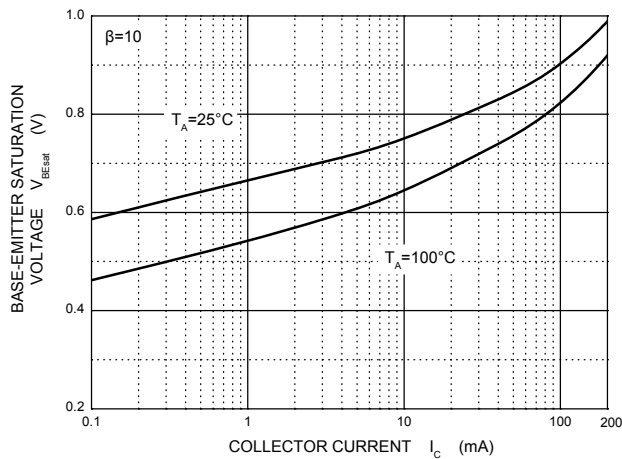
Typical Characteristic Curves



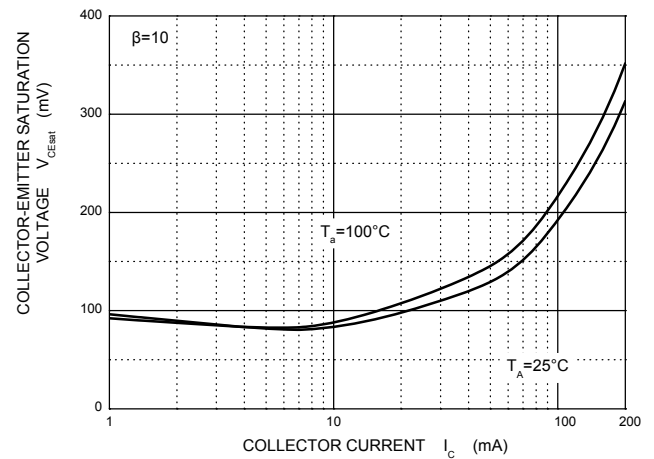
Static Characteristic



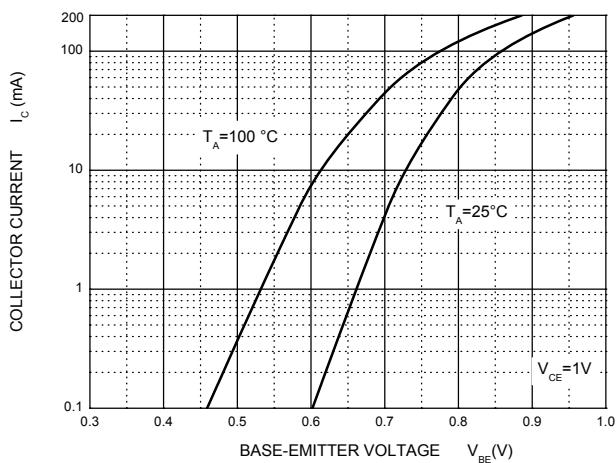
$h_{FE} \text{ — } I_C$



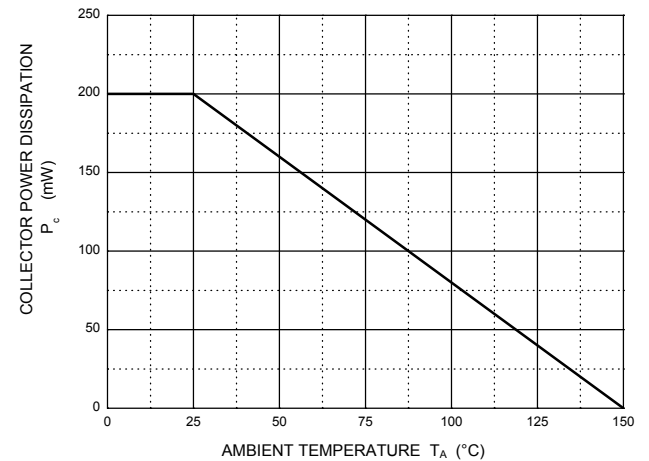
$V_{BEsat} \text{ — } I_C$



$V_{CEsat} \text{ — } I_C$

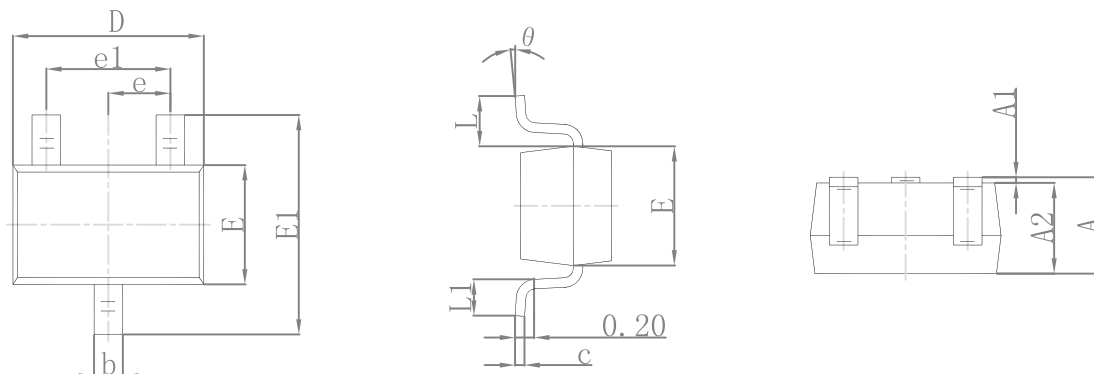


$I_C \text{ — } V_{BE}$



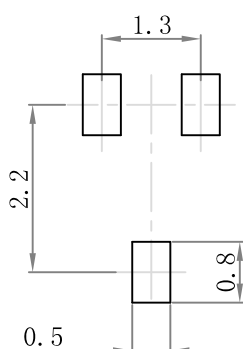
$P_C \text{ — } T_A$

Package Outline Dimensions SOT-323



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.

Marking and Ordering Information

Device	Package	Marking	Quantity	HSF Status
MMST3904	SOT-323	K2N	3000pcs / Reel	RoHS Compliant

For more information, please contact us at: inquiry@goodarksemi.com