

»Features

$V_{CE} = 60V$   
 $I_C = 0.2A$   
 $f_T = 300MHz @ V_{CE}=20V, I_C=10mA, f=100MHz$

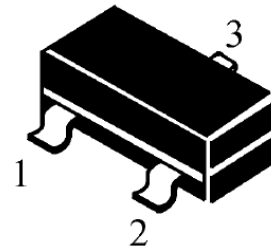
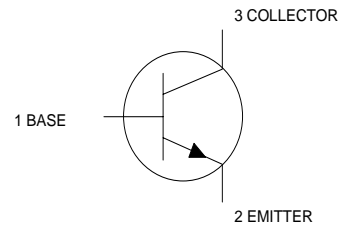
»General Description

- As complementary type the PNP transistor MMST3906 is recommended
- Epitaxial planar die constructio
- SOT-323 Plastic Package.

»Applying

- Amplifiers and switching

»Pin Configurations



»Absolute Maximum Ratings @ $T_A=25^{\circ}C$  unless otherwise noted

Symbol	Parameter	Rating	Units
VCB0	Collector-Base Voltage (open emitter)	60	V
VCE0	Collector-Emitter Voltage (open base)	40	V
VEB0	Emitter -Base Voltage (open collector)	6	V
IC	Collector Current (continuous)	200	mA
PC	Collector Power Dissipation ( $T_{amb} = 25^{\circ}C$ )	225	mW
Tj	Junction Temperature	150	$^{\circ}C$
TSTG	Storage Temperature	-55 ~ 150	$^{\circ}C$

Classification	A	L
HFE2	100-300	140-270

**»Electrical Characteristics @ $T_A=25^{\circ}\text{C}$  unless otherwise noted**

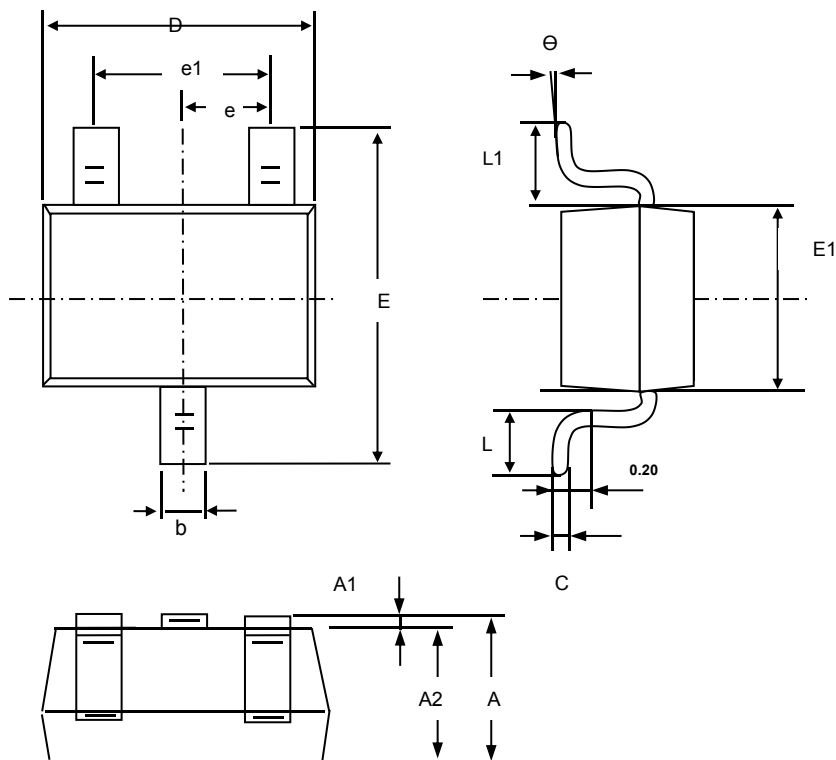
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
BVCEO	Collector-Emitter Breakdown Voltage	IC = 1mA, IB = 0	40			V
BVCBO	Collector-Base Breakdown Voltage	IC = 100 $\mu$ A, IE=0	60			V
BVEBO	Emitter -Base Breakdown Voltage	IE = 100 $\mu$ A, IC=0	6			V
ICBO	Collector Cut-off Current	VCB=30V, IE=0			100	nA
IEBO	Base Cut-off Current	VEB=5V, IC=0			100	nA
hFE1*	DC Current Gain	VCE=1V IC = 0.1 mA	40			
hFE2*		VCE=1V IC = 10 mA	100		300	
hFE3*		VCE=1V IC = 100 mA	30			
VCE(sat)	Collector-Emitter Saturation Voltage	IC=10mA, IB=1mA			200	mV
		IC=50mA, IB=5mA			285	mV
VBE(sat)	Emitter -Base Saturation Voltage	IC=10mA, IB=1mA			850	mV
		IC=50mA, IB=5mA			950	mV
VBE(on)	Base- Emitter on Voltage	VCE=1V, IC=10mA			1.0	V
Cc	Collector Capacitance	VCB=5V, IE=0, f=100 KHz ~ 1 MHz			5	pF
Ce	Emitter Capacitance	VEB=0.5V, IC=0, f=100 KHz ~ 1 MHz			15	pF
fT	Transition frequency	VCE=20V, IC=10mA, f=100M	300			MHz
F	Noise figure	VCE=5V, IC=-100 $\mu$ A, Rs=1K $\Omega$ f=10 Hz ~ 15.7 KHZ		5		dB
<b>Switching times (see Fig. 2)</b>						
ton	Turn-on time	ICon=10mA, IBon=1mA IBoff=-1mA, Vcc=3V, VBE=0.5V			65	nS
td	Delay time				35	nS
tr	Rise time				35	nS
tf	Fall time				50	nS
toff	Turn-off time				240	nS
ts	Storage time				200	nS

 Pulse test ----- tp  $\leq$  300  $\mu$ s;

 $\delta = 0.02$

»Package Information

SOT-323



Symbol	Dim in mm		
	Min	Nor	Max
A	0.90	1.00	1.10
A1	0.00	0.05	0.10
A2	0.90	0.95	1.00
b	0.20	0.30	0.40
c	0.08	0.12	0.15
D	2.00	2.10	2.20
E	2.15	2.30	2.45
E1	1.15	1.25	1.35
e	0.650TPY.		
e1	1.2	1.3	1.4
L	0.26	0.36	0.46
L1	0.525REF.		
θ	0°	4°	8°

»Ordering information

Order code	Package	Marking	Base qty	Delivery mode
MMST3904	SOT-323	K2N	3K	Tape and reel