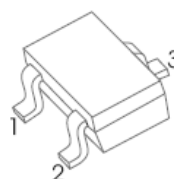


FEATURES

Complementary to MMST3906



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- 1. BASE
- 2. EMITTER
- 3. COLLECTOR

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

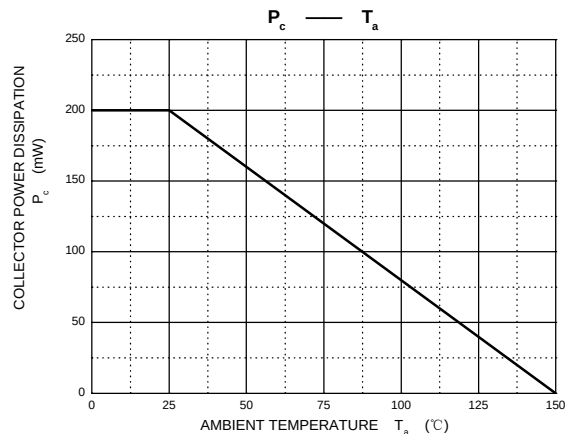
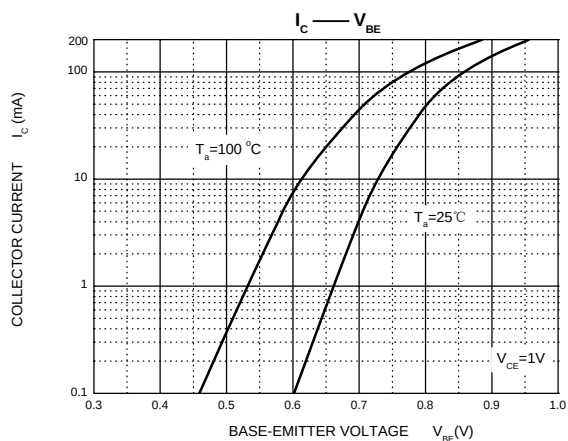
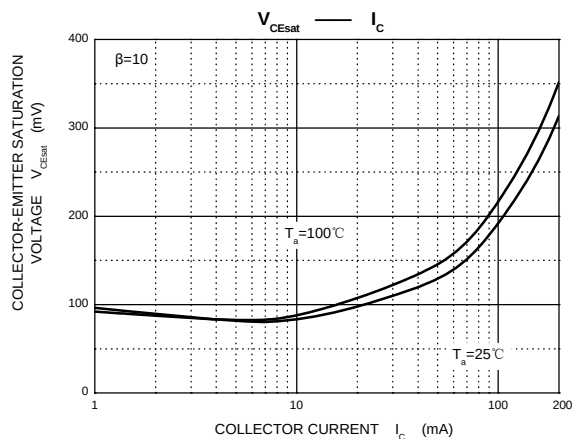
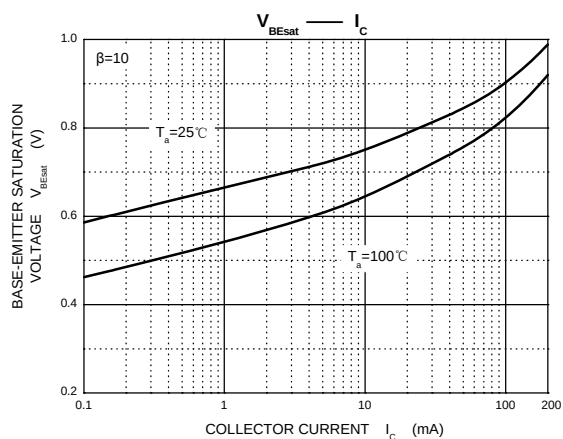
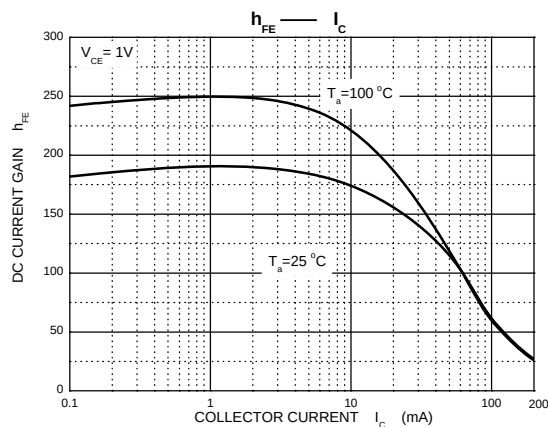
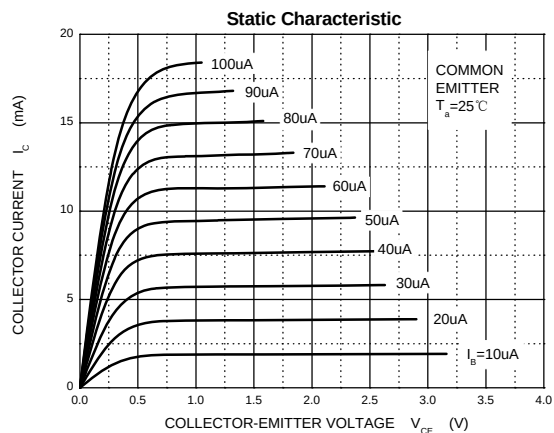
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	200	mA
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	°C/W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}^*$	$I_C=10\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=1mA, I_B=0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}^*$	$I_E=10\mu A, I_C=0$	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}^*	$V_{CE}=1V, I_C=100\mu A$	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	$V_{CC}=3V, V_{BE(off)}=0.5V, I_C=10mA, I_{B1}=1mA$			35	ns
Rise time	t_r				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

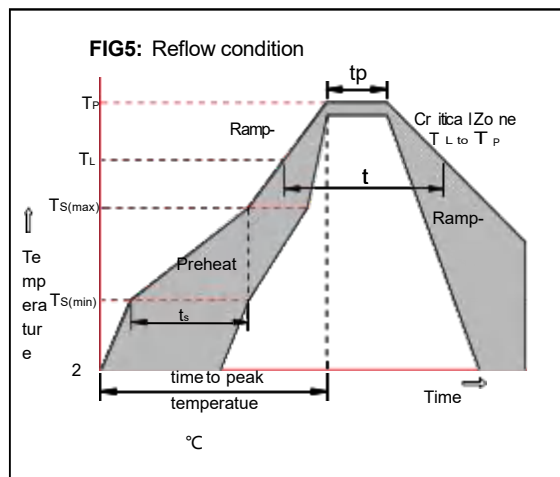
*Pulse test: pulse width $\leq 300\mu s$, duty cycles $\leq 2.0\%$.

RATING AND CHARACTERISTIC CURVES



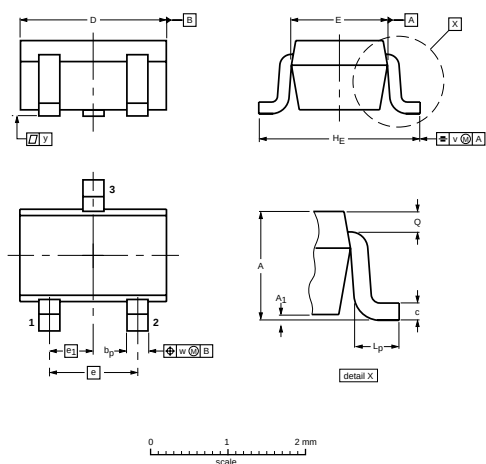
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 °C
	-Temperature Max($T_{s(max)}$)	+200 °C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3 °C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 °C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217 °C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5) °C
Time within 5 °C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6 °C/sec. Max
Time 25 °C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260 °C



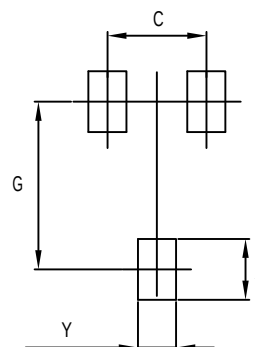
Package Dimensions & Suggested Pad Layout

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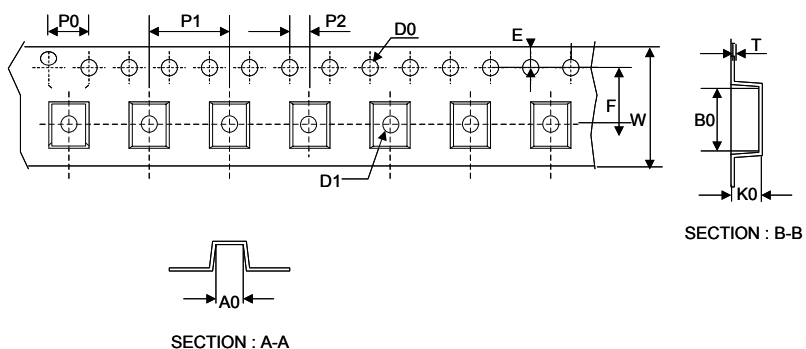
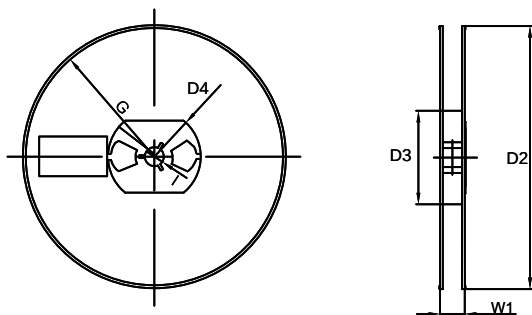
DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2



Dimensions	Value (in mm)
C	1.30
G	2.00
X	0.90
Y	0.65

Tape & reel specification

Tape		Symbol	Dimension (mm)
		P0	4.00±0.20
		P1	4.00±0.20
		P2	2.00±0.20
		D0	1.55±0.20
		D1	1.00±0.20
		E	1.55±0.25
		F	3.60±0.20
		W	8.00±0.20
		A0	2.50±0.20
		B0	2.60±0.20
		K0	1.40±0.20
		T	0.20±0.20
		D2	177.0±5.0
		D3	55Min.
		D4	R24.6±2.0
7" Reel		G	R82.0±2.0
		I	13.0±2.0
		W1	10.20±3.0
		Quantity: 3000PCS	