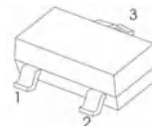


FEATURES

High Collector-Emitter Voltage

Complement to MMBTA94

SOT-23



1.BASE
2.EMITTER
3.COLLECTOR

3D

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

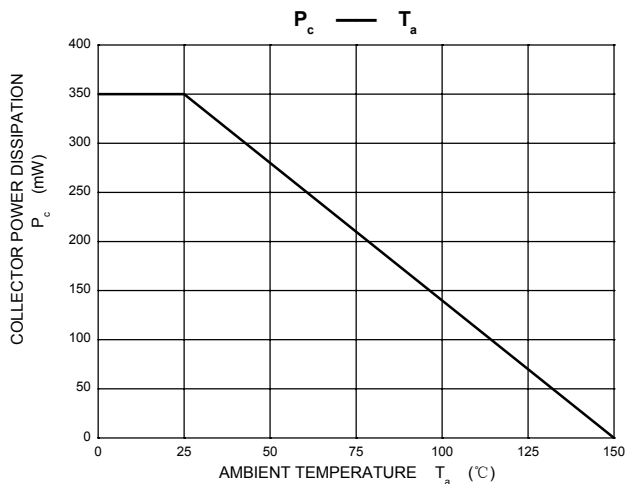
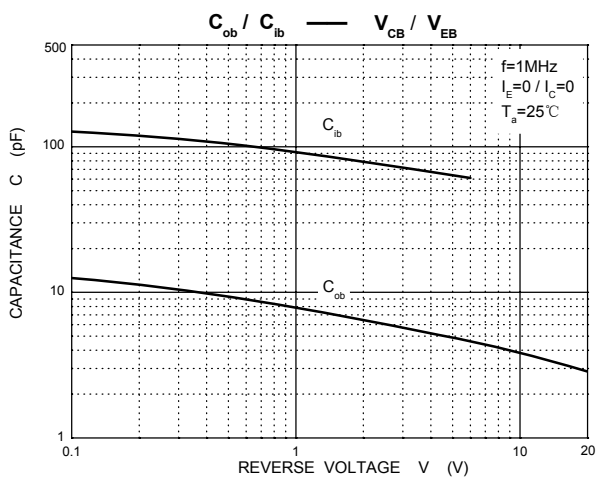
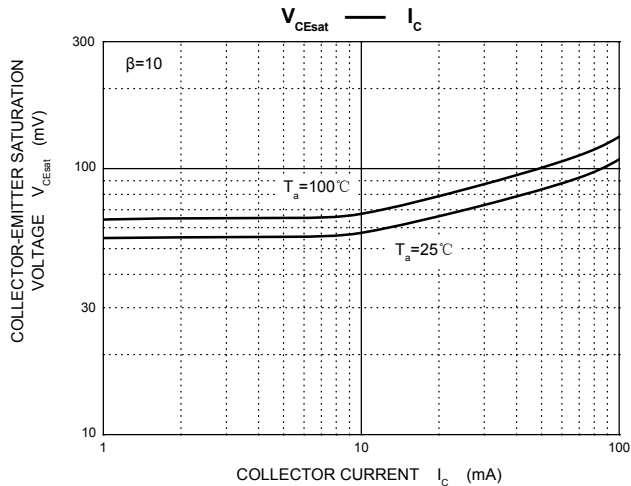
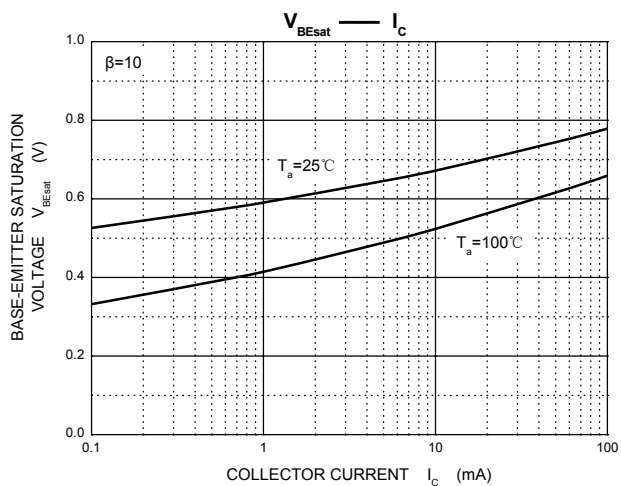
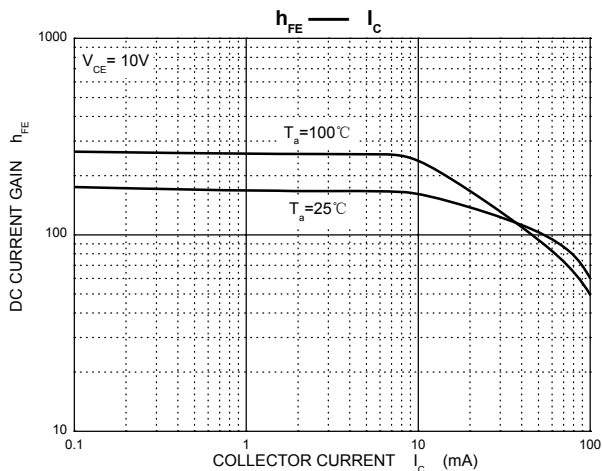
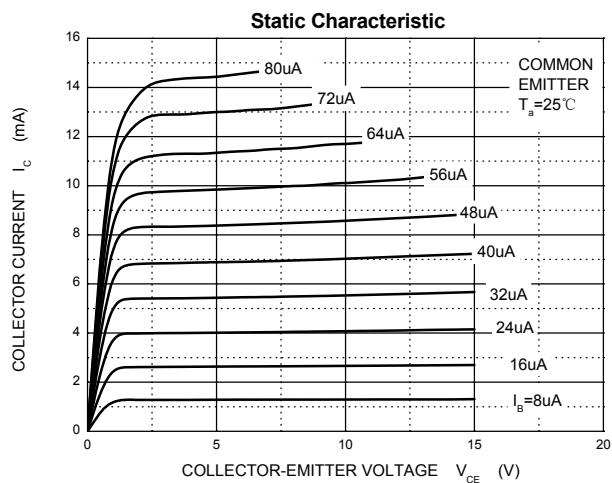
Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CBO}	400	V
Collector - Emitter Voltage	V _{CEO}	400	
Emitter - Base Voltage	V _{EBO}	6	
Collector Current - Continuous	I _C	200	mA
Collector Current - Pulsed	I _{CM}	300	
Collector Power Dissipation	P _C	350	mW
Thermal Resistance From Junction To Ambient	R _{θJA}	357	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 to 150	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V _{CBO}	I _C = 100 μA, I _E = 0	400			V
Collector- emitter breakdown voltage *1	V _{CEO}	I _C = 1 mA, I _B = 0	400			
Emitter - base breakdown voltage	V _{EBO}	I _E = 100 μA, I _C = 0	6			
Collector-base cut-off current	I _{CBO}	V _{CB} = 400 V, I _E = 0			100	nA
Emitter cut-off current	I _{EBO}	V _{EB} = 4V, I _C =0			100	
Collector-emitter saturation voltage *1	V _{CE(sat)1}	I _C =10 mA, I _B =1mA			0.2	V
	V _{CE(sat)2}	I _C =50 mA, I _B =5mA			0.3	
Base - emitter saturation voltage *1	V _{BE(sat)}	I _C =10 mA, I _B =1mA			0.75	
DC current gain *1	h _{FE(1)}	V _{CE} = 10V, I _C = 1mA	40			
	h _{FE(2)}	V _{CE} = 10V, I _C = 10mA	50		200	
	h _{FE(3)}	V _{CE} = 10V, I _C = 50mA	45			
	h _{FE(4)}	V _{CE} = 10V, I _C = 100mA	40			
Collector output capacitance	C _{ob}	V _{CB} = 20V, I _E = 0, f=1MHz			7	pF
Transition frequency	f _T	V _{CE} =20, I _C = 10mA, f=30MHz	50			MHz

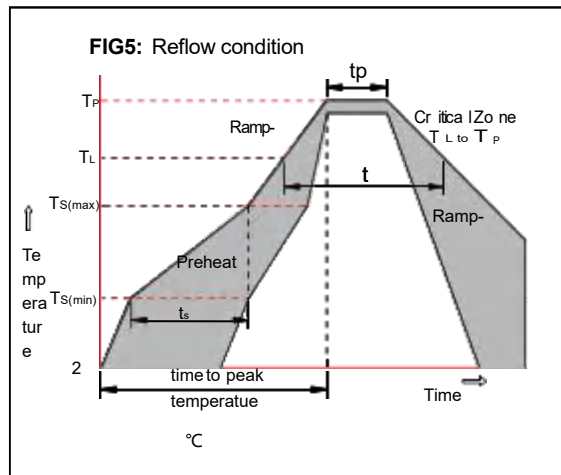
*1: Pulse test: pulse width ≤300μs, duty cycle ≤ 2.0%.

RATING AND CHARACTERISTIC CURVES



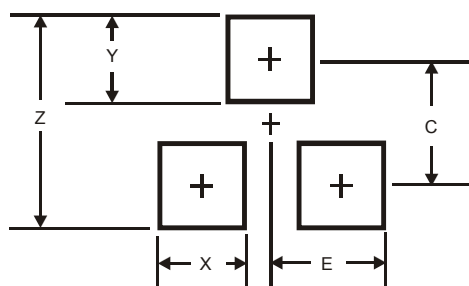
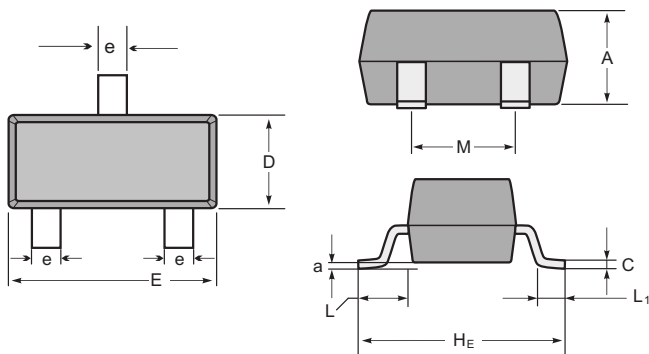
Soldering parameters

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

SOT23



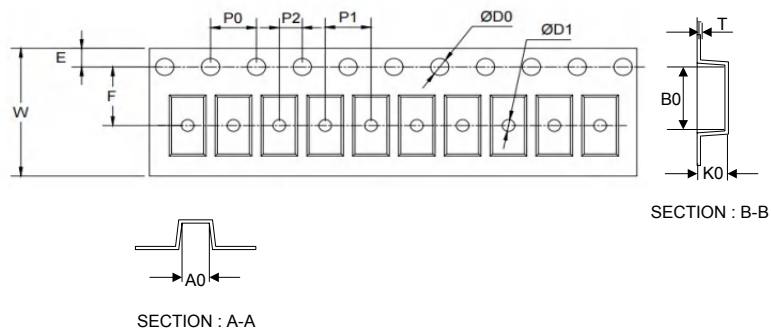
SOT-23 mechanical data

UNIT		A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Tape & reel specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
D0	1.55±0.10
D1	1.05±0.10
E	1.55±0.10
F	3.60±0.10
W	8.00±0.10
A0	3.80±0.20
B0	3.25±0.20
K0	1.45±0.10
T	0.25±0.05
D2	178.0±3.0
D3	55Min.
D4	R24.0±3.0
G	R82.0±3.0
I	13.0±2.0
W1	11.0±3.0
Quantity: 3000PCS	

7" Reel

