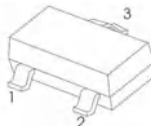




FEATURES

High Breakdown Voltage
Complement to MMBTA44

SOT-23



1.BASE
2.EMITTER
3.COLLECTOR

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CB0}	-400	V
Collector - Emitter Voltage	V _{CE0}	-400	
Emitter - Base Voltage	V _{EB0}	-5	
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}	150	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature range	T _{stg}	-55 to 150	

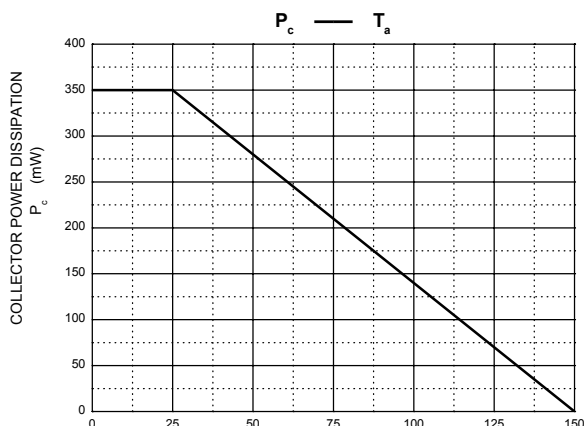
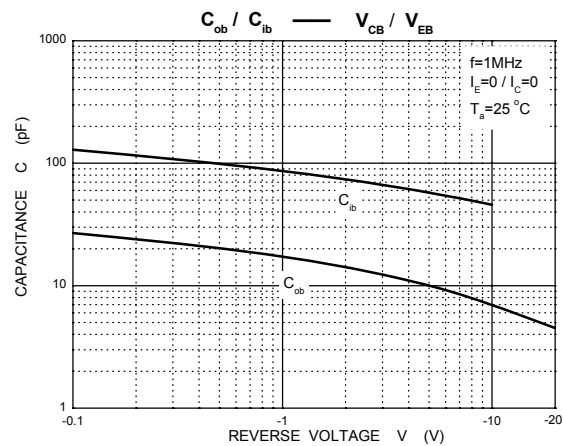
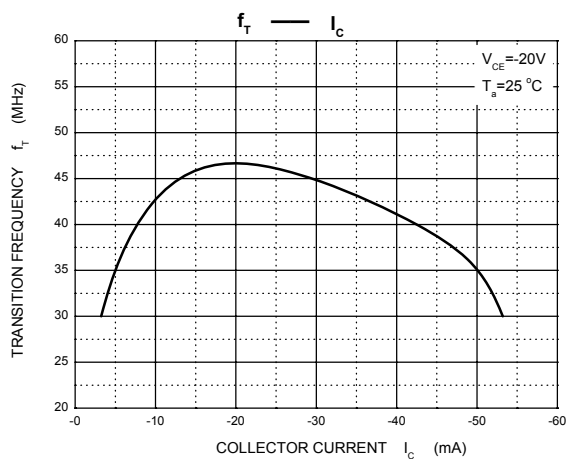
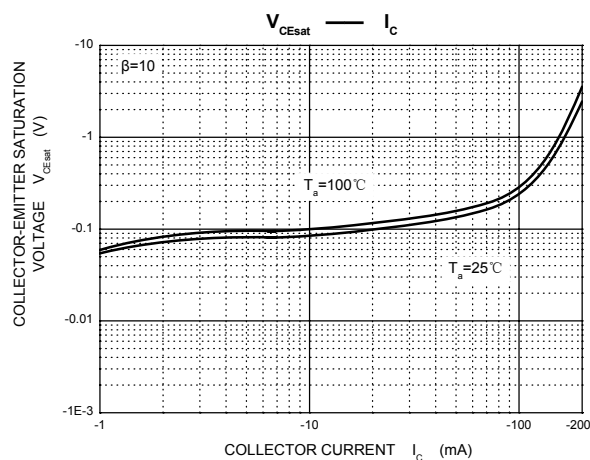
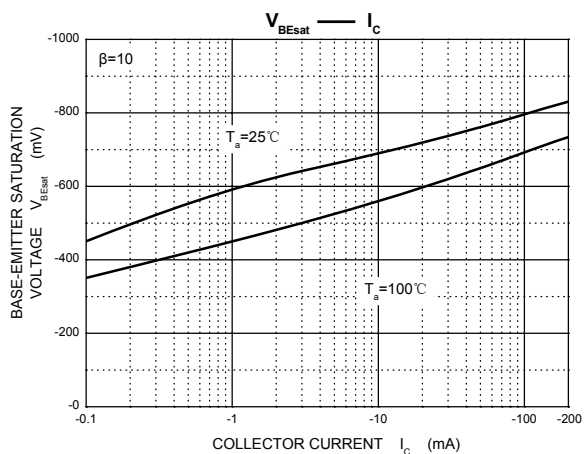
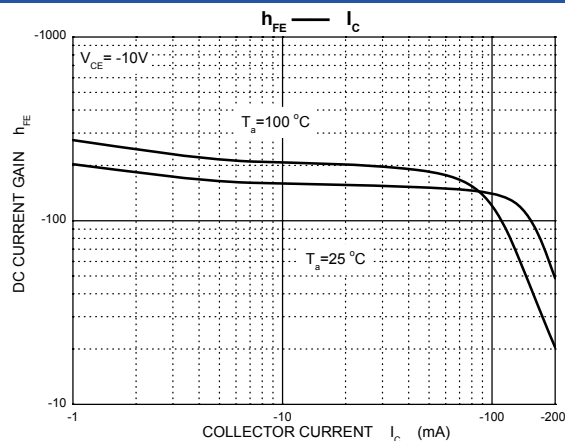
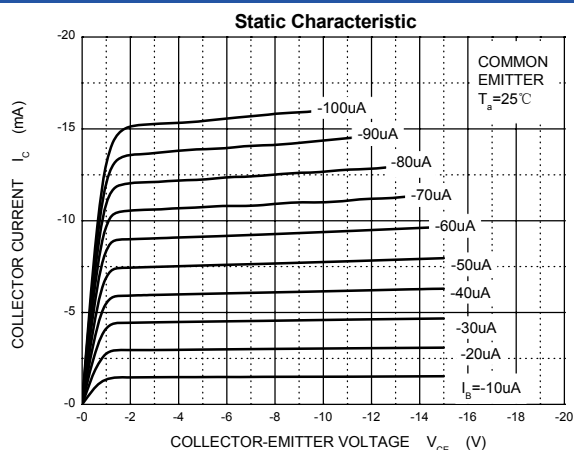
ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	VCBO	IC = -100 μ A, IE = 0	-400			V
Collector- emitter breakdown voltage	VCEO	IC = -1 mA, IB = 0	-400			
Emitter - base breakdown voltage	VEBO	IE = -100 μ A, IC = 0	-5			
Collector-base cut-off current	ICBO	VCB = -400 V, IE = 0			-100	nA
Emitter cut-off current	IEBO	VEB = -4V, IC = 0			-100	
Collector-emitter saturation voltage	VCE(sat)1	IC = -10 mA, IB = -1mA			-0.2	V
	VCE(sat)2	IC = -50 mA, IB = -5mA			-0.3	
Base - emitter saturation voltage	VBE(sat)	IC = -10mA, IB = -1mA			-0.75	
DC current gain	hFE(1)	VCE = -10V, IC = -10mA	80		300	
	hFE(2)	VCE = -10V, IC = -1mA	70			
	hFE(3)	VCE = -10V, IC = -100mA	40			
	hFE(4)	VCE = -10V, IC = -50mA	40			
Transition frequency	fT	VCE = -20V, IC = 10mA, f = 30MHz	50			MHz

Classification of hfe(1)

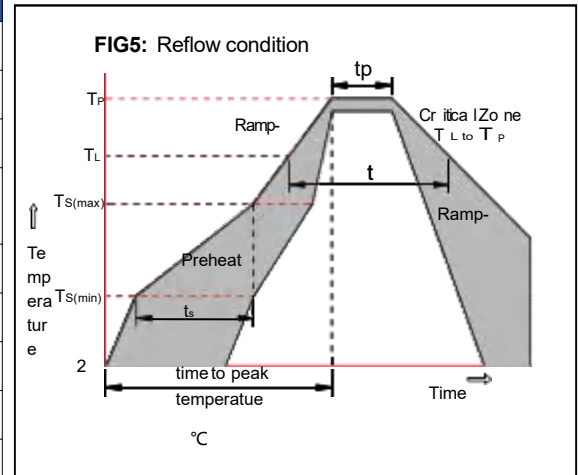
Type	MMBTA94
Range	80-300
Marking	4D

RATING AND CHARACTERISTIC CURVES



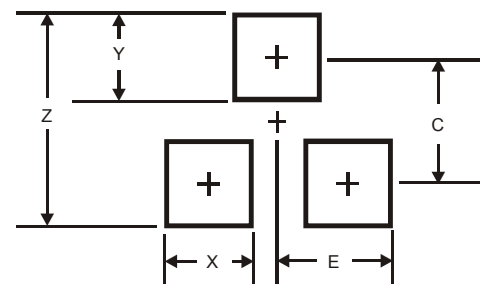
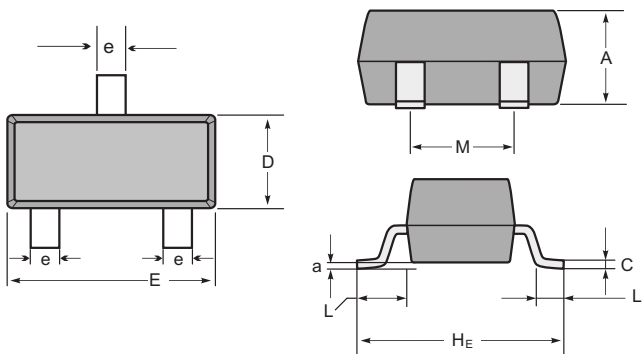
Soldering parameters

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



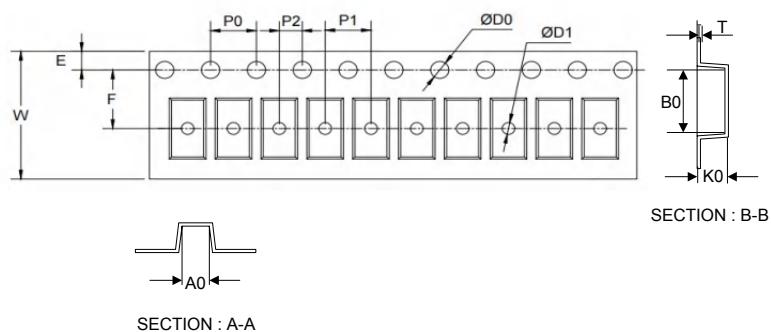
SOT-23 mechanical data

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)
	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)
	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

