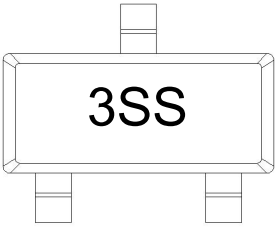
SOT-23 Plastic-Encapsulate Transistors

RoHS COMPLIANT

Marking: 3SS **SOT-23**

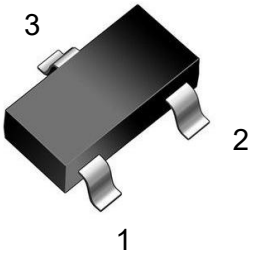
Features

- Low profile package
- Ldeal forautomated placement
- Power Dissipation of 200mW
- High Stability and High Reliability
- RoHS compliant



Applications

- Amplifying signal
- Electronic switch
- Oscillating circui
- Variable resistance



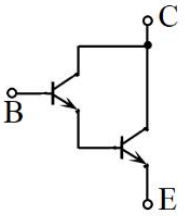
Mechanical Data

- Package: SOT-23
- Lead finish:matte tin
- Case material: “ green ” molding compound.
- UL flammability classification rating 94V -0
- Moisture sensitivity: level 1 per J -STD-020

Package：SOT-23

1：Base
2：Emitter
3：Collector

Epuivalent circuit



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

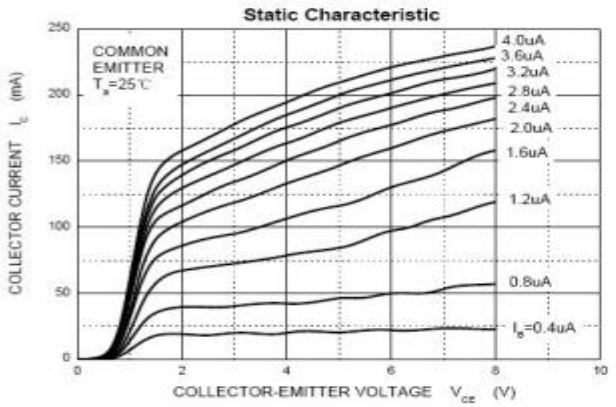
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	12	V
Collector Current - Continuous	I_C	500	mA
Collector Power Dissipation	P_C	200	mW
ThermalResistance From Junction to Ambient	$R_{\theta JA}$	625	℃/W
Junction Temperature	T_J	-55 to +150	℃
Junction and Storage Temperature	T_{STG}	-55 to +150	℃

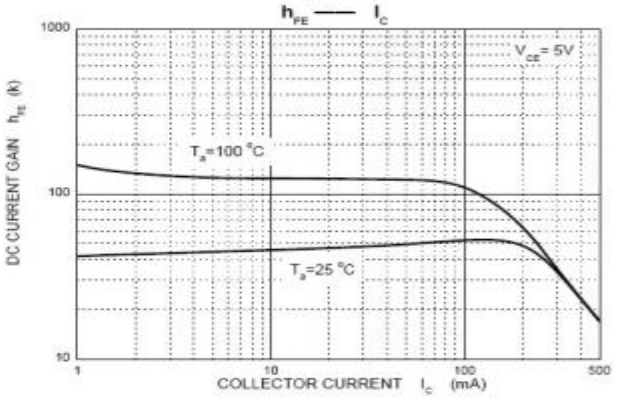
Electrical Characteristics (T_A = 25 °C unless otherwise noted)

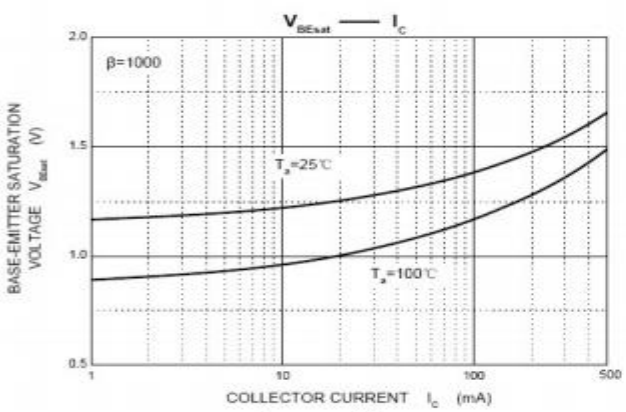
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100uA, I_E=0	80		V
Collector-emitter breakdown voltage	$V_{(BR)CES}$	I_C=100uA, V_{BE}=0	80		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10uA, I_C=0	12		V
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0		100	nA
Collector cut-off current	I_{CEO}	V_{CE}=60V, I_B=0		500	nA
Emitter cut-off current	I_{EBO}	V_{EB}=10V, I_C=0		100	nA
DC current gain	h_{FE}	V_{CE}=5V, I_C=100mA	10K		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA, I_B=0.01mA		1.2	V
		I_C=100mA, I_B=0.1mA		1.5	V
Base -emitter saturation voltage	$V_{BE(ON)}$	V_{CE}=5V,I_C=100mA		2	V
Transition frequency	f_T	V_{CE}=5V, I_C=10mA,f=100MHz	125		MHz
Collector output capacitance	C_{ob}	V_{CB}=1V, I_E=0, f=1MHz		8	pF

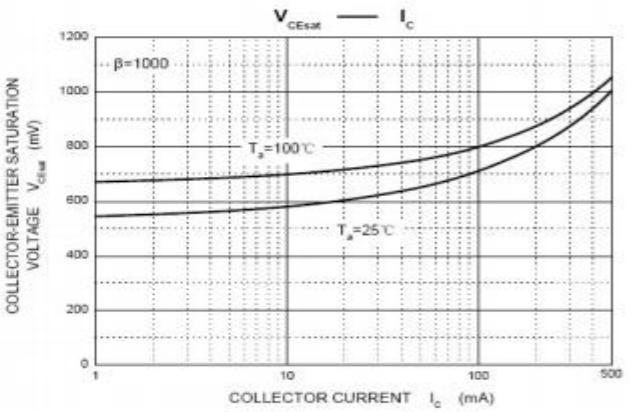
Ratings and Characteristics Curves

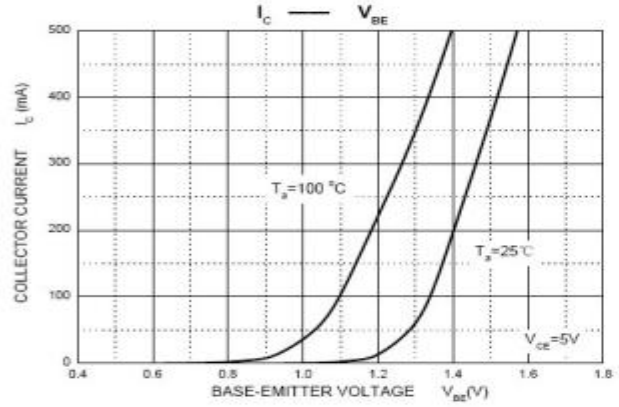
(TA = 25℃ unless otherwise note

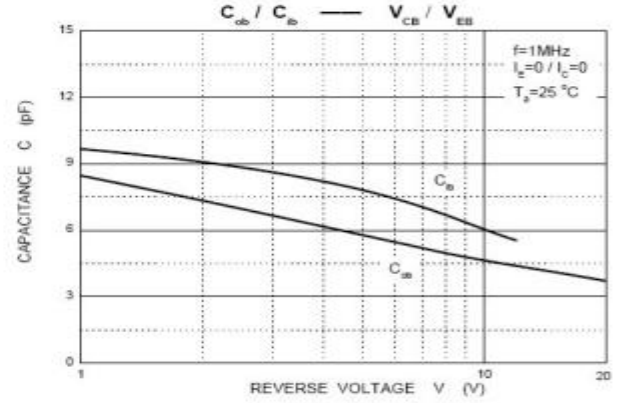


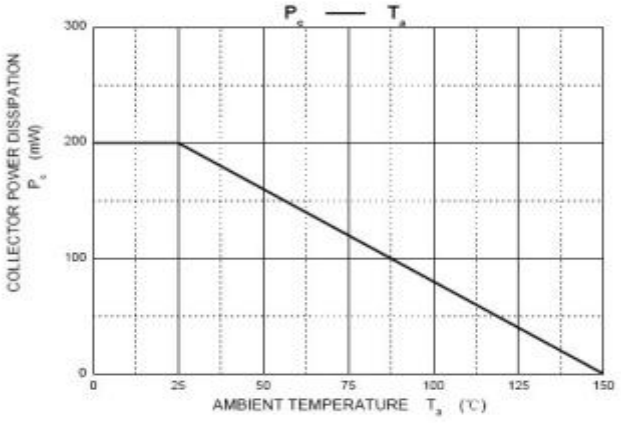






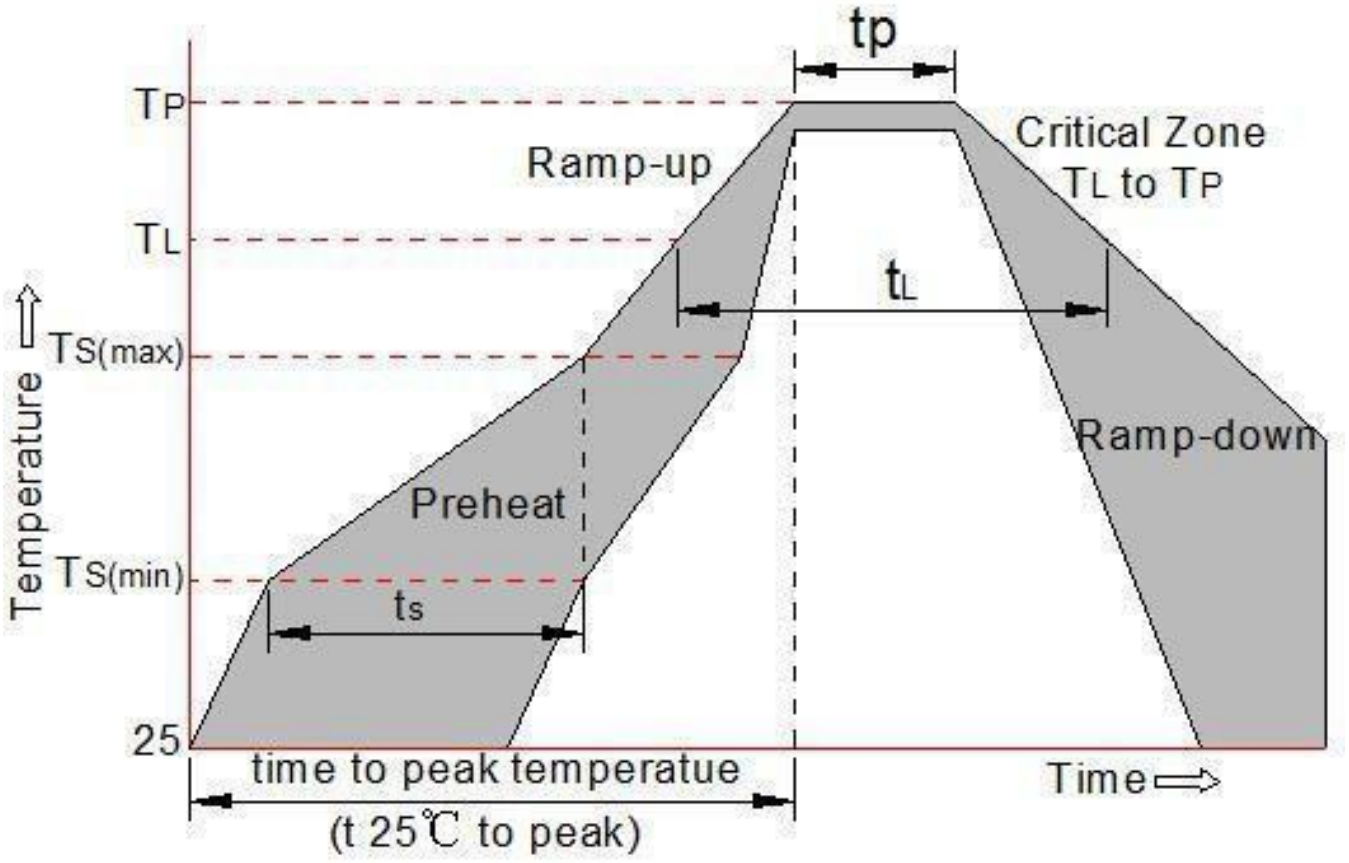






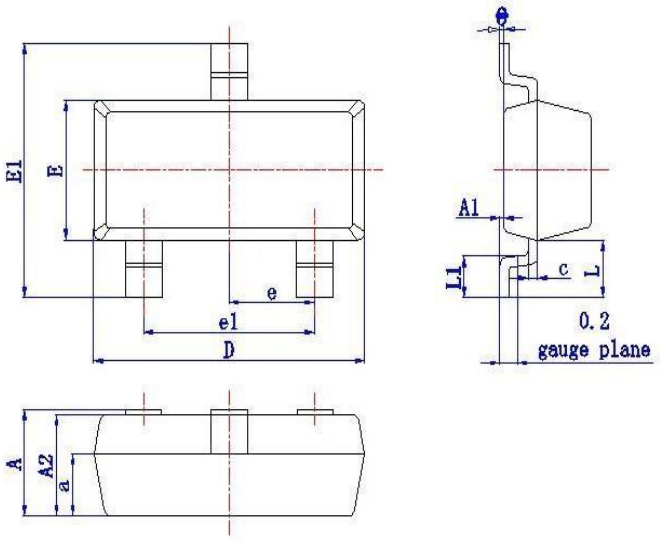
Soldering parameters

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



Package Outline Dimensions

millimeters



Symbol	Dimensional	
	Millimeters	
	min	max
A	0.9	1.15
A1	0	0.1
A2	0.9	1.05
a	(0.6)	
D	2.8	3.0
E	1.2	1.4
E1	2.25	2.55
e	(0.95)	
e1	1.8	2.0
b	0.3	0.5
c	0.08	0.15
L	(0.55)	
L1	0.3	0.5
θ	0°	8°

Revision History

Document Version	Date of release	Description of changes
Rev.A	2020.01.26	First issue

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