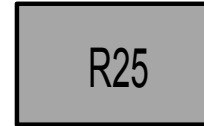
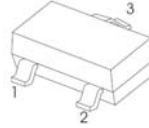




FEATURES

- Power dissipation

SOT-23



1.BASE
2.EMITTER
3.COLLECTOR

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	12	V
V_{EBO}	Emitter-Base Voltage	3	V
I_C	Collector Current	100	mA
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	$^{\circ}\text{C}/\text{W}$
T_j, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

CLASSIFICATION OF $h_{FE(1)}$

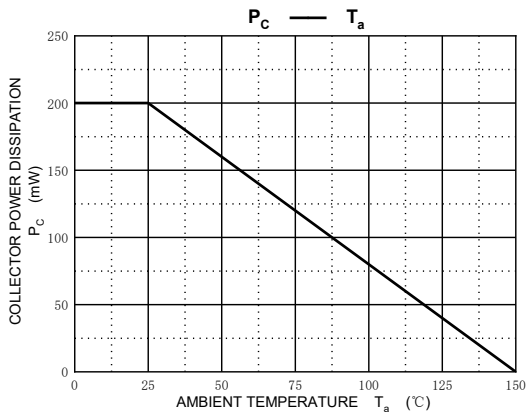
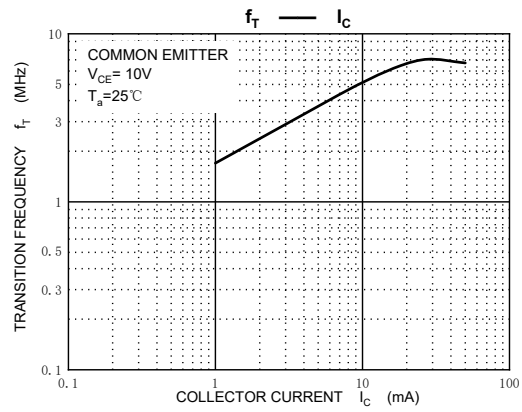
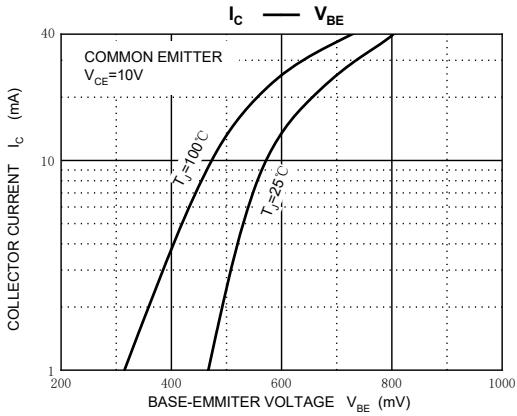
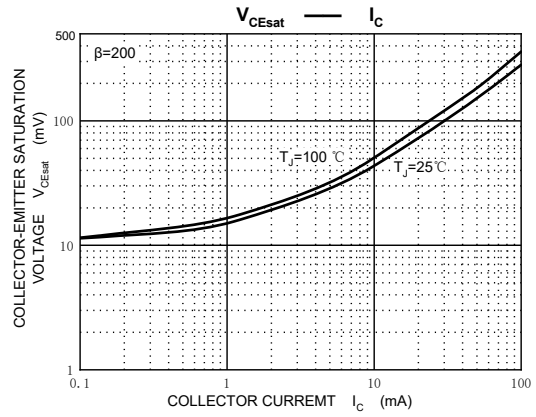
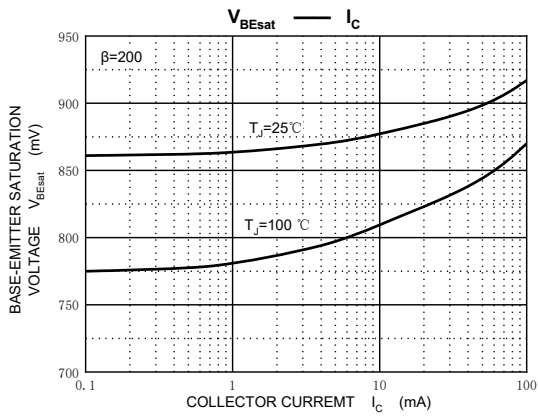
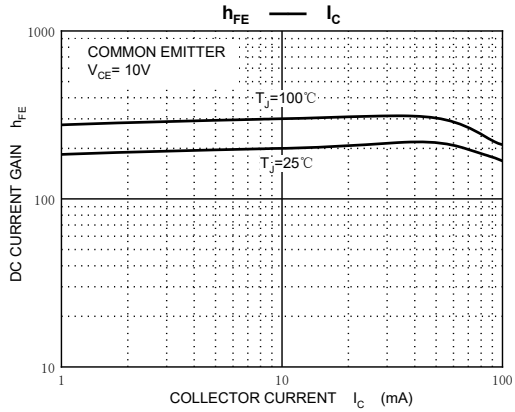
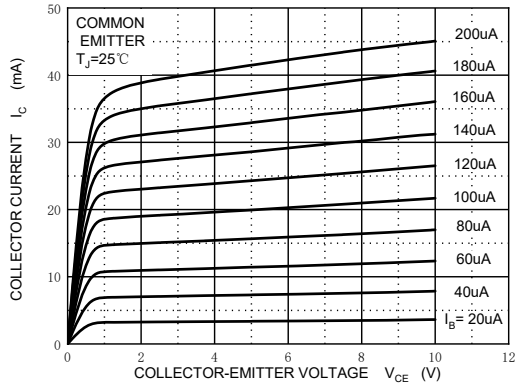
RANGE	50 - 100	80 - 160	125 - 250
MARKING	R23	R24	R25

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	20			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	12			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	3			V
Collector cut-off current	I_{CBO}	$V_{CB}=10V, I_E=0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=1V, I_C=0$			1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=10V, I_C=20mA$	50		250	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=50mA, I_B=5mA$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=50mA, I_B=5mA$			1.15	V
Transition frequency	f_T	$V_{CE}=10V, I_C=20mA$		7		GHz
Collector output capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$		0.8	1	pF
Noise Figure	N_F	$V_{CB}=10V, I_C=7mA, f=1GHz$		1.65	2	dB

RATING AND CHARACTERISTIC CURVES

Static Characteristic



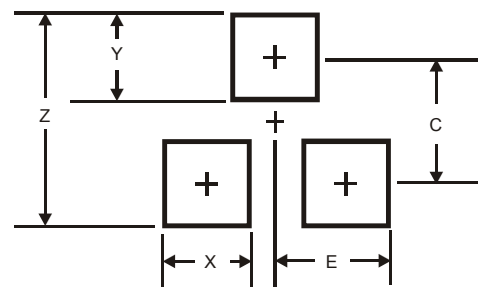
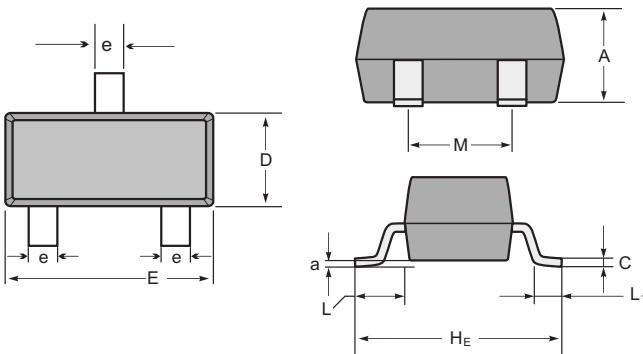
Soldering parameters

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



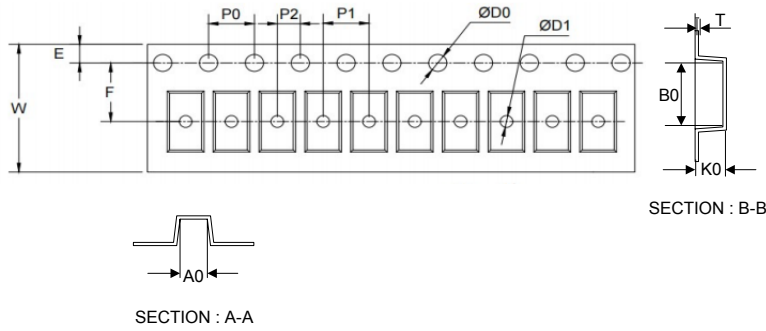
SOT-23 mechanical data

UNIT	A	C	D	E	He	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)
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P0	4.00±0.10
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P1	4.00±0.10
----	-----------

P2	2.00±0.10
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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
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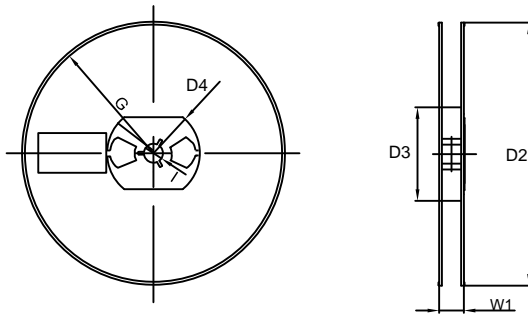
A0	3.80±0.20
----	-----------

B0	3.25±0.20
----	-----------

K0	1.45±0.10
----	-----------

T	0.25±0.05
---	-----------

7" Reel



D2	178.0±3.0
----	-----------

D3	55Min.
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D4	R24.0±3.0
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G	R82.0±3.0
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I	13.0±2.0
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W1	11.0±3.0
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Quantity: 3000PCS