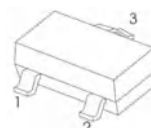


FEATURES

- PNP epitaxial silicon, planar design.
- Collector-emitter voltage $V_{CE} = -50V$.
- Collector current $I_C = -0.15A$.
- Transition frequency $f_T > 80MHz$ @ $I_C = -1mA_{dc}$, $V_{CE} = -10V_{dc}$, $f = 30MHz$.
- In compliance with ER RoHS 2002/95/EC directives.

SOT-23



1.BASE
2.EMITTER
3.COLLECTOR

BA

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

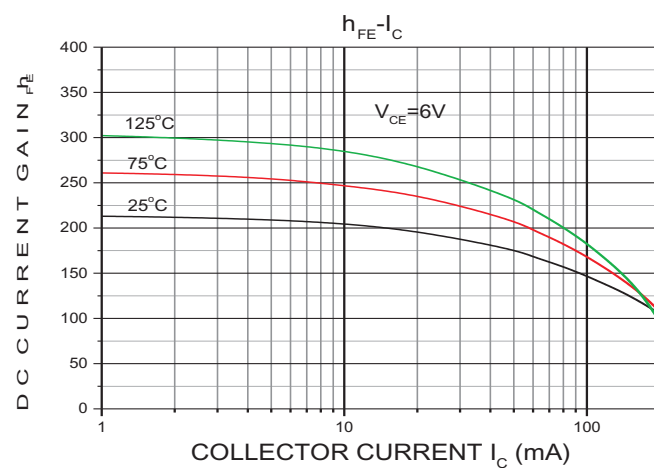
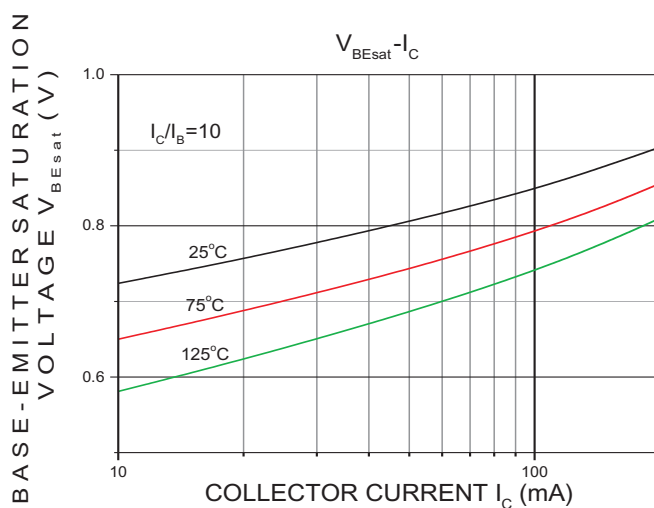
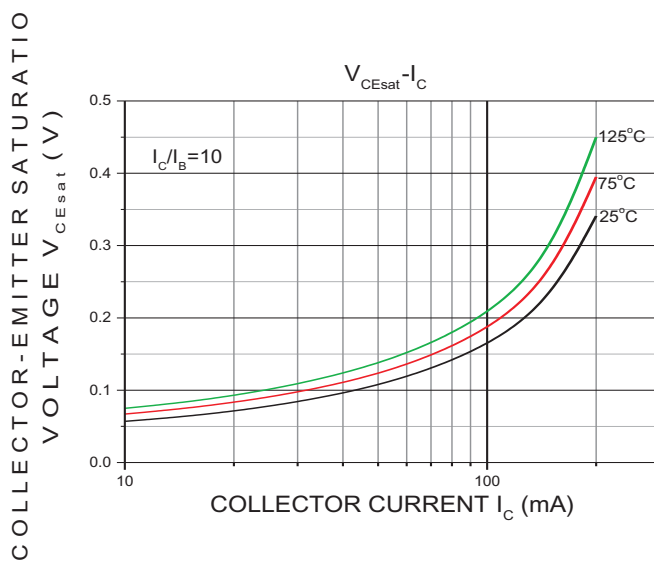
Symbol	Parameter	Vaule	Unit
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-0.15	A
P_D	Total Device Dissipation(FR-5 BOARD)	0.2	W
$R_{\theta JA}$	Thermal Resistance Form Junction to Ambient	625	$^\circ C/W$
T_J	Junction Temperature	150	$^\circ C$
T_{STG}	Storage Temperature	-55~+150	$^\circ C$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Collector-Base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100\mu A, I_E = 0$	-50			V
Collector-Emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -0.1mA, I_B = 0$	-50			V
Emitter-Base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100\mu A, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -50V, I_C = 0$			-0.1	μA
Collector cut-off current	I_{CEX}	$V_{CE} = -25V, I_B = 0$			-0.1	μA
Base cut-off current	I_{BEX}				-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5V, I_C = 0$			-0.1	μA
DC current gain*	H_{FE}	$I_C = -2mA, V_{CE} = -6V$	130		400	
Collector-Emitter saturation voltage	$V_{CE(SAT)}$	$I_C = -10mA, I_B = -1mA$			-0.2	V
		$I_C = -100mA, I_B = -10mA$			-0.3	V
Base-Emitter Saturation voltage*	$V_{BE(SAT)}$	$I_C = -10mA, I_B = -1mA$			-0.85	V
		$I_C = -100mA, I_B = -10mA$			-0.95	V
Input capacitance	C_{IB}	$V_{CB} = -5V, I_E = 0, f = 1MHz$			4.0	pF
Output capacitance	C_{OB}	$V_{EB} = -0.5V, I_C = 0, f = 1MHz$			8.0	pF
Transition frequency	f_T	$I_C = -1mA, V_{CE} = -10V, f = 30MHz$	150			MHz
Delay time	t_d	$V_{CC} = -3V, V_{BE} = 0.5V, I_C = -10mA, I_B = -1mA$			35	nS
Rise time	t_r				35	nS
Storage time	t_s	$V_{CC} = -3V, V_{BE} = 0.5V, I_{B1} = I_{B2} = -1mA$			200	nS
Fall time	t_f				50	nS

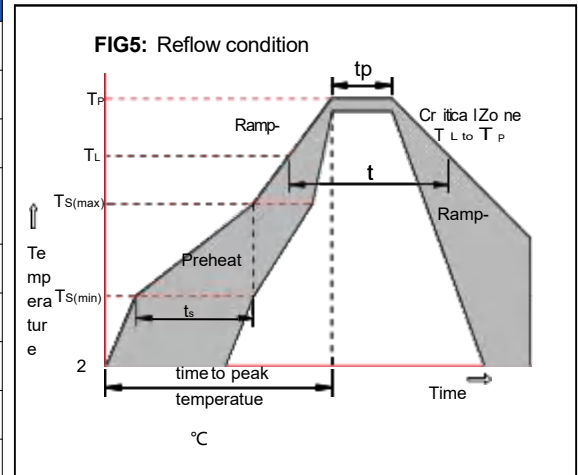
*Pulse Test: Pulse Width < 300 μ S, Duty Cycle < 2.0%.

RATING AND CHARACTERISTIC CURVES



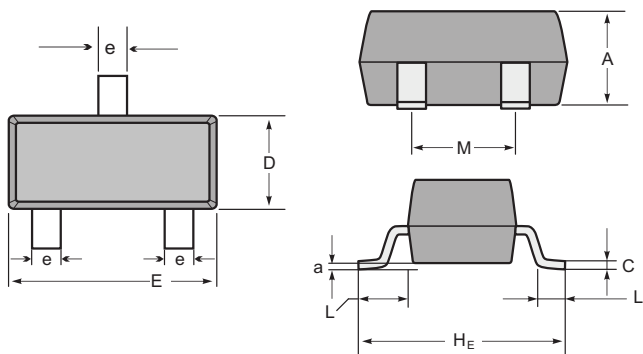
Soldering parameters

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



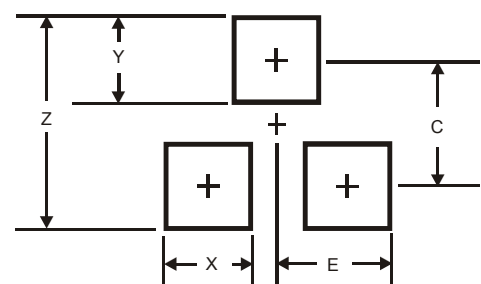
Package Dimensions & Suggested Pad Layout

SOT23



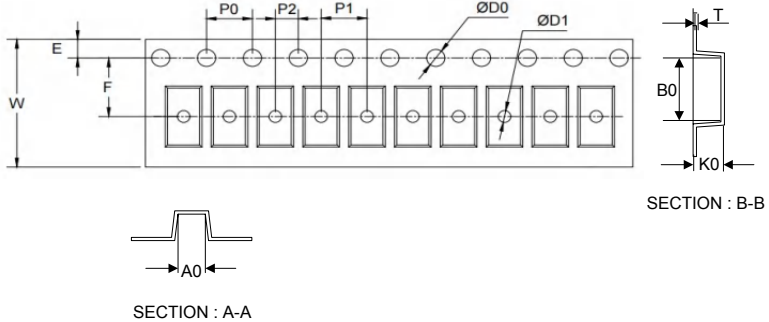
SOT-23 mechanical data

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)	0.15
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.0
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	6
	min	35	3	47	110	87	12	67			0.0



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
7" Reel	Quantity: 3000PCS	
	