

SOT-23 Plastic-Encapsulate Transistors

Descriptions

Silicon PNP transistor in a SOT-23 Plastic Package.

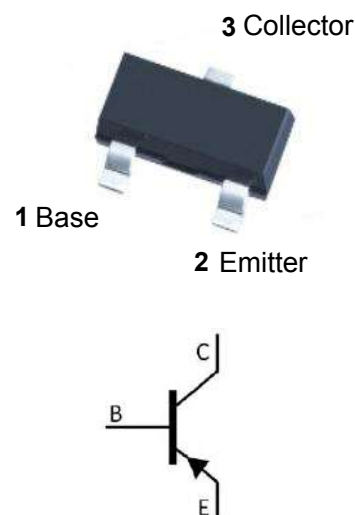
Features

Low $V_{CE(sat)}$, high current.

Applications

General purpose switching and muting
 LCD back-lighting
 Supply line switching circuits.

SOT-23



h_{FE} Classifications & Marking

h_{FE} Range	>200
Marking	ZDH

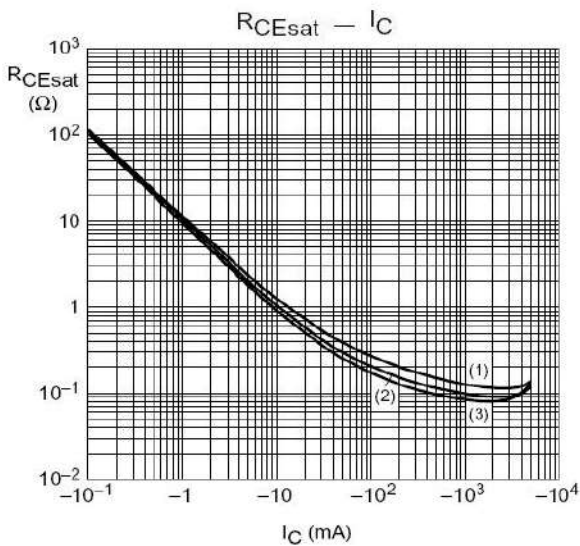
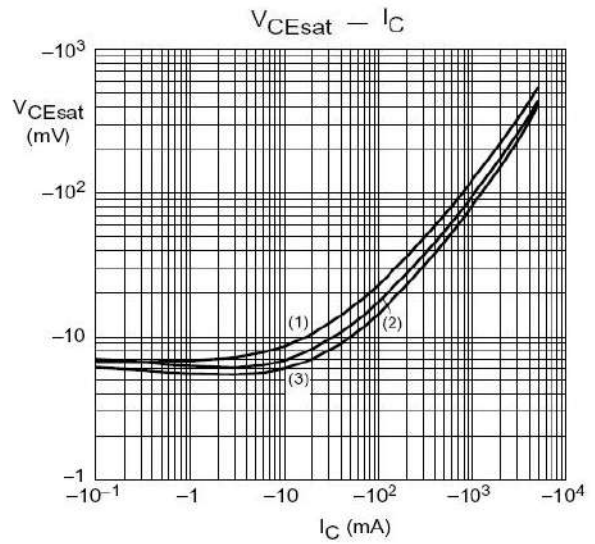
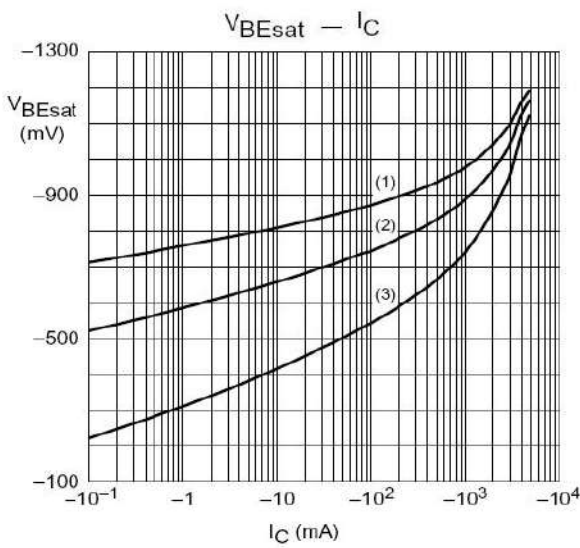
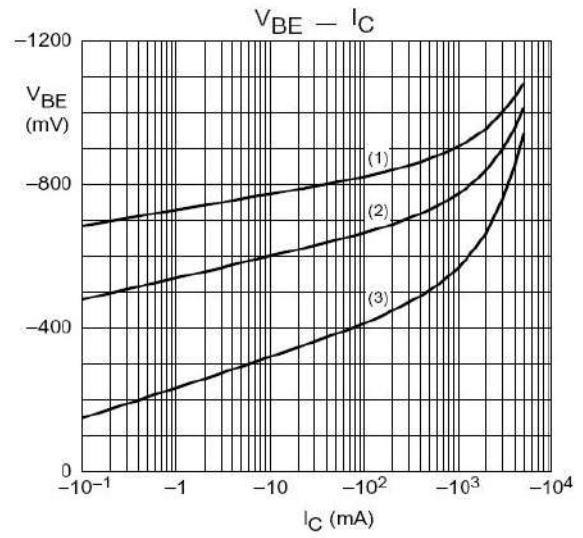
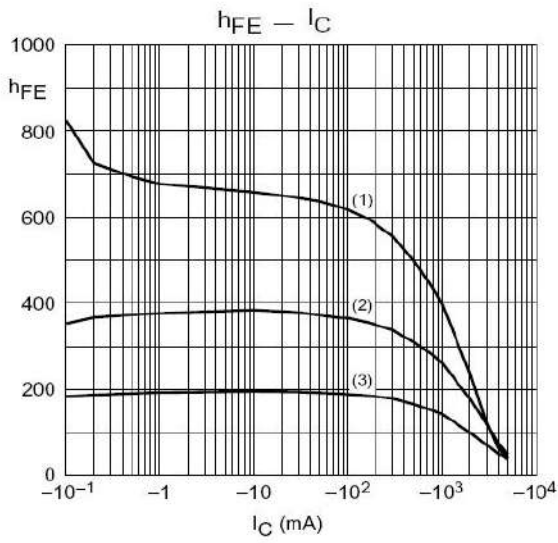
Absolute Maximum Ratings($T_a=25^{\circ}C$)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-50	V
Collector to Emitter Voltage	V_{CEO}	-50	V
Emitter to Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-2	A
Peak Collector Current	I_{CM}	-5	A
Base Current	I_B	-0.5	A
Total Power Dissipation	P_{tot}	300	mW
Total Power Dissipation	$P_{tot}^{(註 1, 2)}$	1.2	W
Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-65~150	$^{\circ}C$

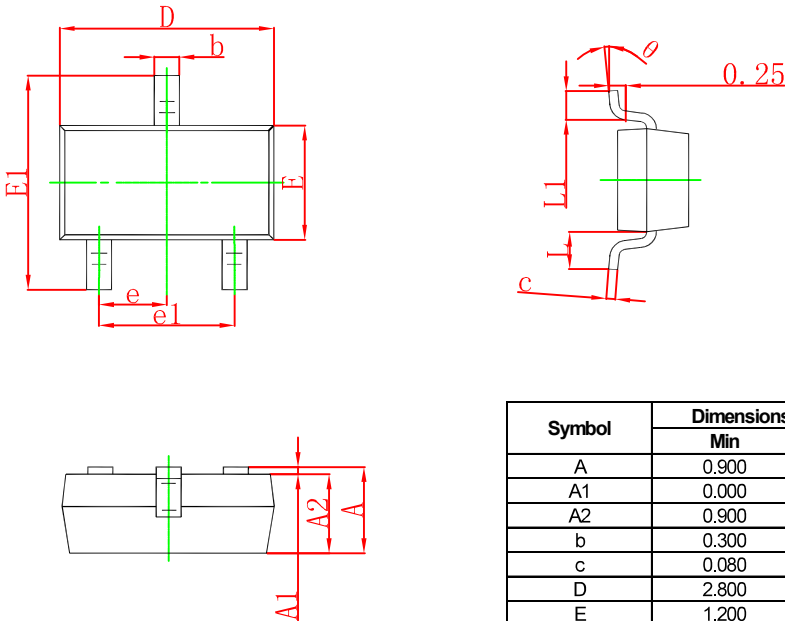
Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-50V$ $I_E=0$			-100	nA
		$V_{CB}=-50V$ $I_E=0$ $T_j=150^\circ C$			-50	μA
emitter Cut-Off Current	I_{EBO}	$V_{EB}=-5.0V$ $I_C=0$			-100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-2.0V$ $I_C=-100mA$	200			
	$h_{FE(2)}$	$V_{CE}=-2.0V$ $I_C=-500mA$	200			
	$h_{FE(3)*}$	$V_{CE}=-2.0V$ $I_C=-1.0A$	200			
	$h_{FE(4)*}$	$V_{CE}=-2.0V$ $I_C=-2.0A$	130			
	$h_{FE(5)*}$	$V_{CE}=-2.0V$ $I_C=-3.0A$	80			
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)*}$	$I_C=-500mA$ $I_B=-50mA$			-80	mV
	$V_{CE(sat)(2)*}$	$I_C=-2.0A$ $I_B=-100mA$			-320	mV
Equivalent On-Resistance	$R_{CE(sat)*}$	$I_C=-2.0A$ $I_B=-200mA$		90	135	m Ω
Base-Emitter Saturation Voltage	$V_{BE(sat)*}$	$I_C=-2.0A$ $I_B=-100mA$			-1.1	V
		$I_C=-3.0A$ $I_B=-300mA$			-1.2	V
Base-Emitter Voltage	$V_{BE(ON)*}$	$V_{CE}=-2.0V$ $I_C=-1.0A$			-1.2	V
Transition Frequency	f_T	$V_{CE}=-5.0V$ $I_C=-100mA$ $f=100MHz$	100			MHz
Collector Capacitance	C_C	$V_{CB}=-10V$ $I_E=0$ $f=1.0MHz$			35	pF

Typical Characteristics

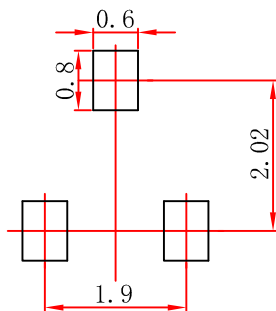


SOT-23 Package Outline Dimensions



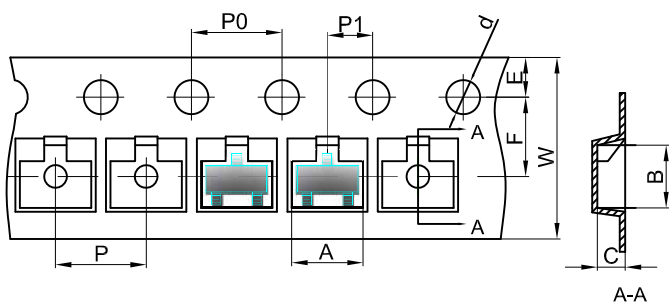
Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.05 mm.
 3. The pad layout is for reference purposes only.

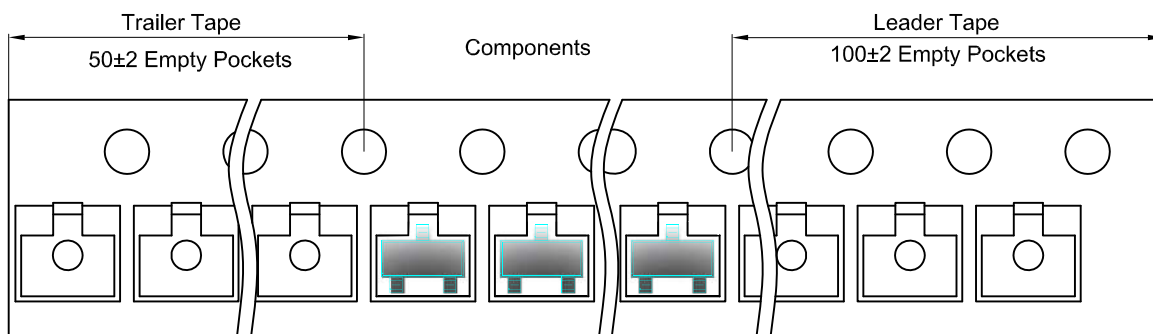
SOT-23 Embossed Carrier Tape



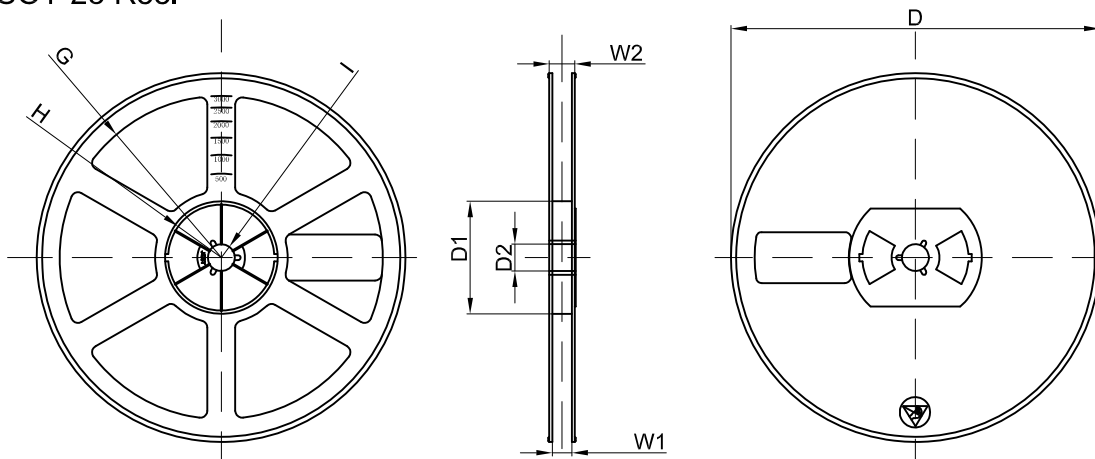
Packaging Description:
 SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	