

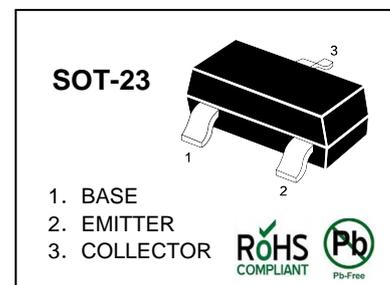
30 V Low $V_{CE(sat)}$ NPN Transistor

FEATURES

- Low collector-emitter saturation voltage
- High current capabilities
- Improved device reliability due to reduced heat generation.

APPLICATIONS

- General purpose switching and muting
- LCD backlighting
- Supply line switching circuits
- Battery driven equipment (mobile phones, video cameras and hand-held devices).



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

Parameter		Symbol	Value	Unit
Collector Base Voltage		V_{CBO}	40	V
Collector Emitter Voltage		V_{CEO}	30	V
Emitter Base Voltage		V_{EBO}	5	V
Collector Current (DC)		I_C	1	A
Peak Collector Current		I_{CM}	2	A
Peak Base Current		I_{BM}	1	A
Total Power Dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}^{1)}$	P_{tot}	200	mW
	$T_{amb} \leq 25\text{ }^\circ\text{C}^{2)}$		450	
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_s	-65 to +150	$^\circ\text{C}$
Thermal Resistance From Junction to Ambient	In free air ¹⁾	$R_{th\ j-a}$	417	K/W
	In free air ²⁾		278	
Operating Ambient Temperature		T_{amb}	-65 to +150	$^\circ\text{C}$

⁽¹⁾ Device mounted on a printed-circuit board; single sided copper; tinplated; standard footprint.

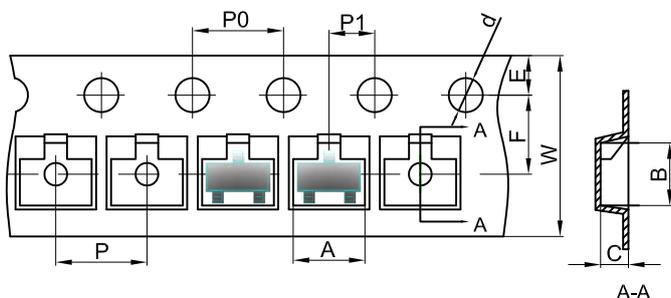
⁽²⁾ Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1cm².

Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at $V_{CE}=5\text{V}$, $I_C=1\text{mA}$	h_{FE}	300	-	-	
at $V_{CE}=5\text{V}$, $I_C=500\text{mA}$	h_{FE}	300	-	900	
at $V_{CE}=5\text{V}$, $I_C=1\text{A}$	h_{FE}	200	-	-	
Collector-Base Cutoff Current					
at $V_{CB}=40\text{V}$	I_{CBO}	-	-	100	nA
at $V_{CB}=40\text{V}$, $T_{amb}=150\text{ }^{\circ}\text{C}$		-	-	50	μA
Collector-Emitter Cutoff Current					
at $V_{CE}=30\text{V}$	I_{CEO}	-	-	100	nA
Emitter-Base Cutoff Current					
at $V_{EB}=5\text{V}$	I_{EBO}	-	-	100	nA
Collector-Emitter Saturation Voltage					
at $I_C=100\text{mA}$, $I_B=1\text{mA}$	$V_{CE(sat)}$	-	-	200	mV
at $I_C=500\text{mA}$, $I_B=50\text{mA}$		-	-	250	
at $I_C=1\text{A}$, $I_B=100\text{mA}$		-	-	500	
Equivalent on-Resistance					
at $I_C=500\text{mA}$, $I_B=50\text{mA}$;	$R_{CE(sat)}$	-	260	<500	$\text{m}\Omega$
Base-Emitter Saturation Voltage					
at $I_C=1\text{A}$, $I_B=100\text{mA}$	$V_{BE(sat)}$	-	-	1.2	V
Base-Emitter Turn-on Voltage					
at $V_{CE}=5\text{V}$, $I_C=1\text{A}$	$V_{BE(on)}$	-	-	1.1	V
Transition Frequency					
at $V_{CE}=10\text{V}$, $I_C=50\text{mA}$, $f=100\text{MHz}$	f_T	150	-	-	HMz
Collector Capacitance					
at $V_{CB}=10\text{V}$, $f=1\text{MHz}$	C_C	-	-	10	pF

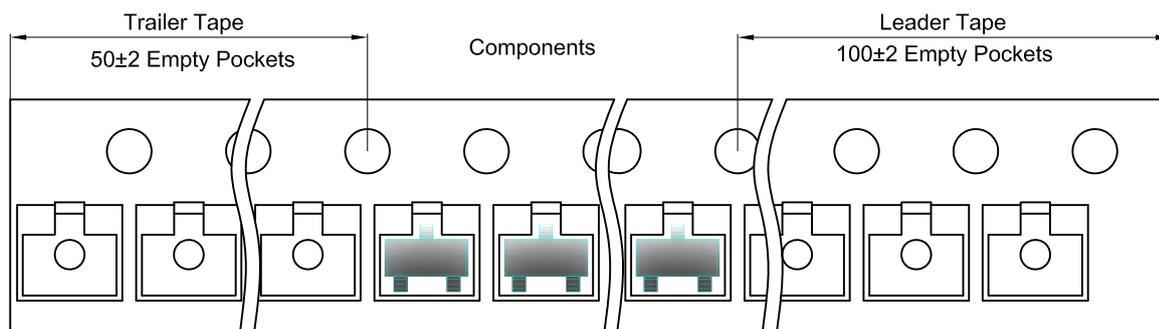
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

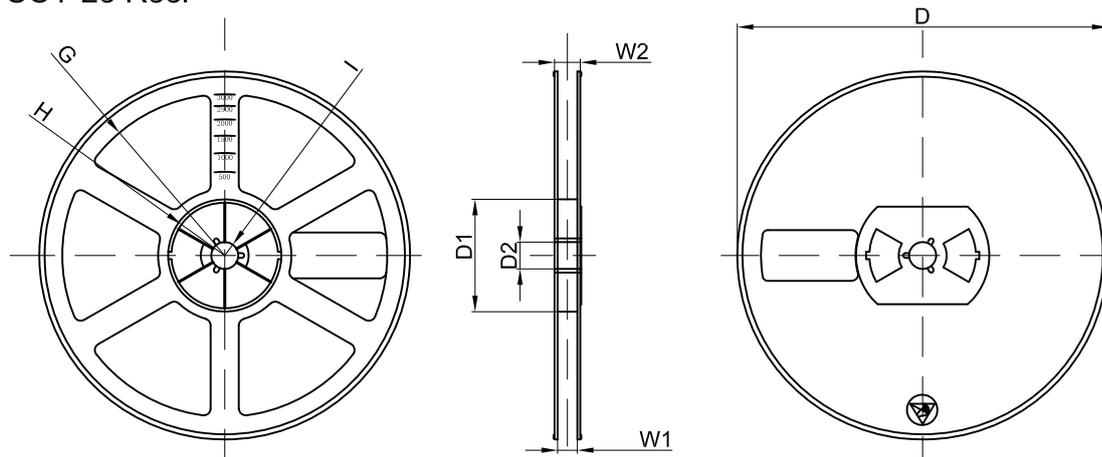


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

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	



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950 TYP	
e1	1.800	2.000
L	0.550 REF	
L1	0.300	0.500
θ	0°	8°

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