-20V P-Channel Mosfet

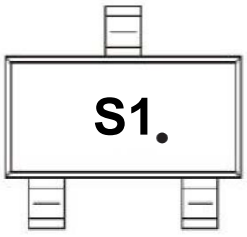
FEATURES

- $R_{DS(ON)}$ ≤ 64mΩ(49mΩ Typ.) @V_{GS}=-4.5V
- $R_{DS(ON)}$ ≤ 89mΩ(59mΩ Typ.) @V_{GS}=-2.5V

APPLICATIONS

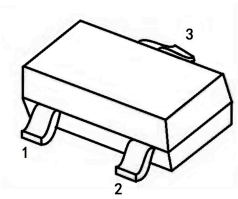
- SMPS and general purpose applications
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

MARKING



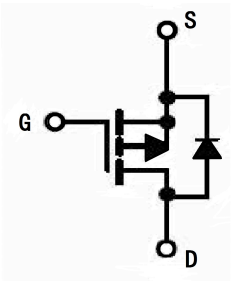
Other marks : "**S1**" or "**S1** "

SOT-23



1. GATE
2. SOURCE
3. DRAIN

P-CHANNEL MOSFET



MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Max.	Units
V_{DSS}	Drain-Source Voltage	-20	V
V_{GSS}	Gate-Source Voltage	±10	V
I_D	Continuous Drain Current	-3.4	A
P_D	Power Dissipation	1	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	125	℃/W
T_L	Lead Temperature for Soldering Purposes (1/8" from case for 10s)	260	℃
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to +150	℃

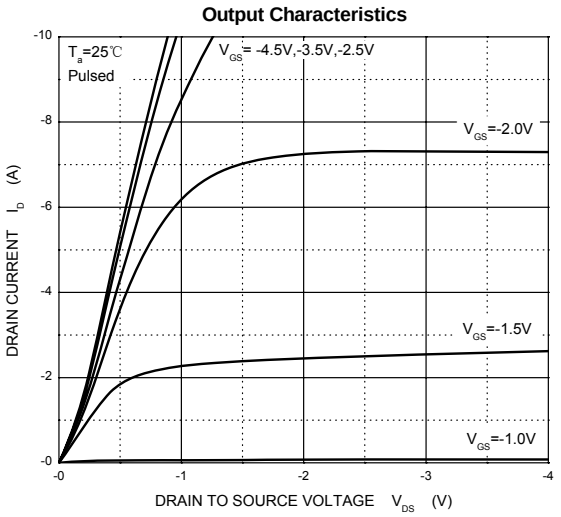
MOSFET ELECTRICAL CHARACTERISTICS Ta=25 °C unless otherwise specified

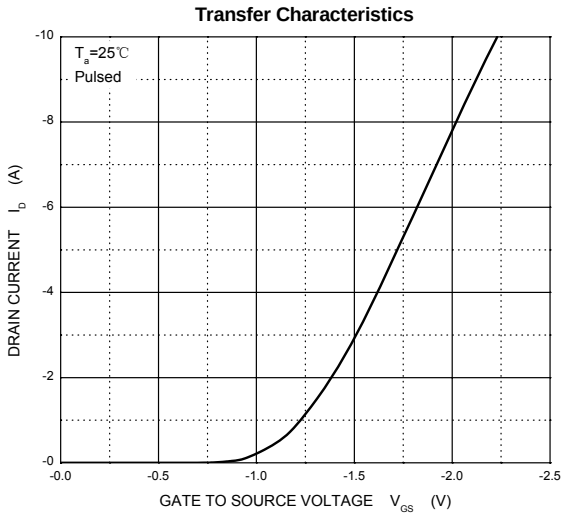
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D= -250μA	-20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -20V, V_{GS} = 0V,	-	-	-1	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS} =0V, V_{GS} = ±10V	-	-	±100	nA
On Characteristics note1						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D= -250μA	-0.4	-0.7	-1.0	V
$R_{DS(on)}$	Static Drain-Source on-Resistance	V_{GS} =-4.5V, I_D =-2.8A	-	49	64	mΩ
		V_{GS} =-2.5V, I_D =-2A	-	59	89	
g_{FS}	Forward Transconductance	V_{DS}=-5V,I_D=-2.8A	5	-	-	S
Dynamic Characteristics note2						
C_{iss}	Input Capacitance	V_{DS} =-10V, V_{GS} = 0V, f = 1.0MHz	-	405	-	pF
C_{oss}	Output Capacitance		-	75	-	pF
C_{rss}	Reverse Transfer Capacitance		-	55	-	pF
Q_g	Total Gate Charge	V_{DS} = -10V, I_D = -3.6A V_{GS} = -4.5V	-	3.3	-	nC
Q_{gs}	Gate-Source Charge		-	0.7	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	1.3	-	nC
Switching Characteristics note2						
$t_{d(on)}$	Turn-on Delay Time	V_{DD} = -10V, R_L=10Ω R_{GEN}=1Ω,V_{GS}=-4.5V	-	11	-	ns
t_r	Turn-on Rise Time		-	35	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	30	-	ns
t_f	Turn-off Fall Time		-	10	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_S = -1A	-	-	-1.0	V

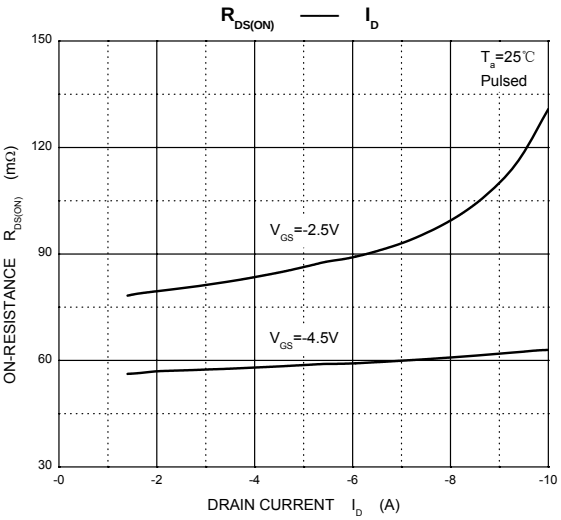
Notes:1. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

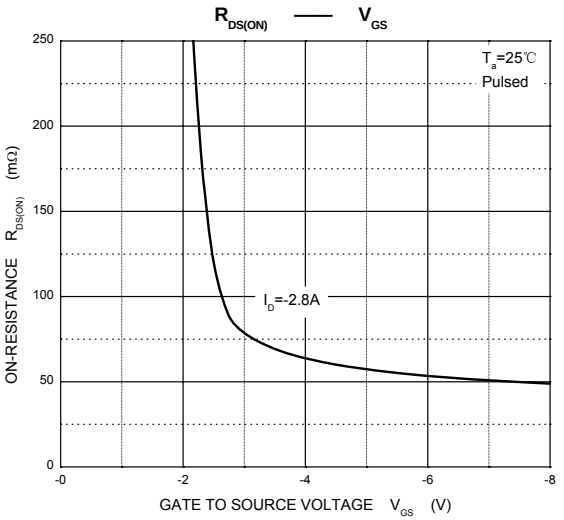
2. Guaranteed by design, not subject to production testing.

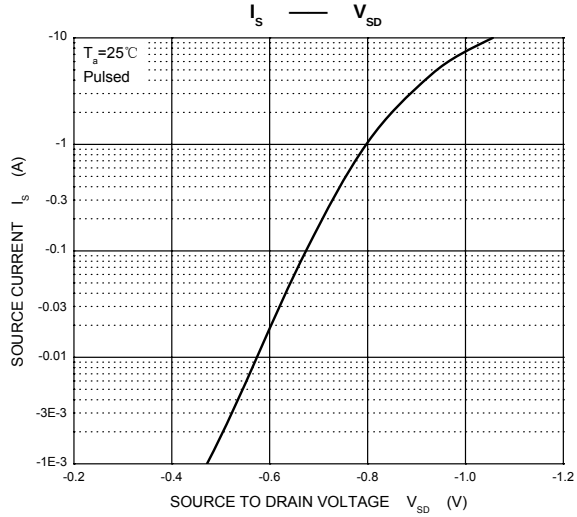
TYPICAL PERFORMANCE CHARACTERISTICS



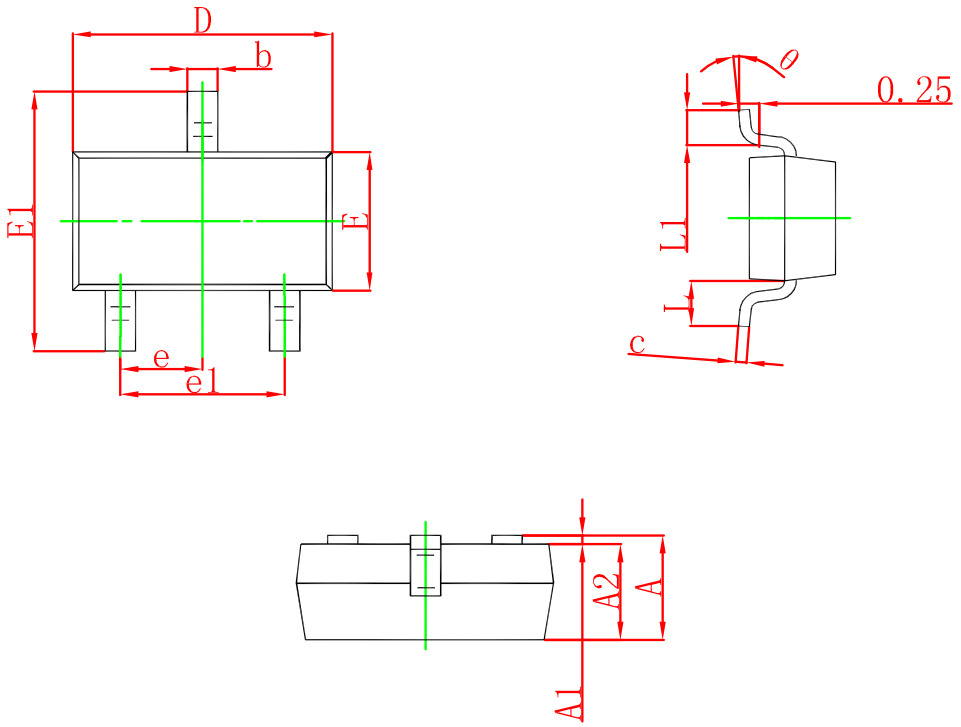








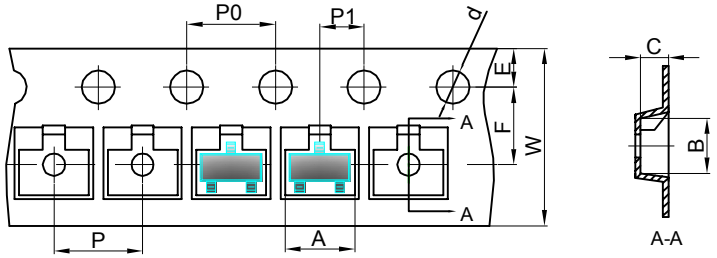
SOT-23 PACKAGE OUTLINE DRAWING



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°

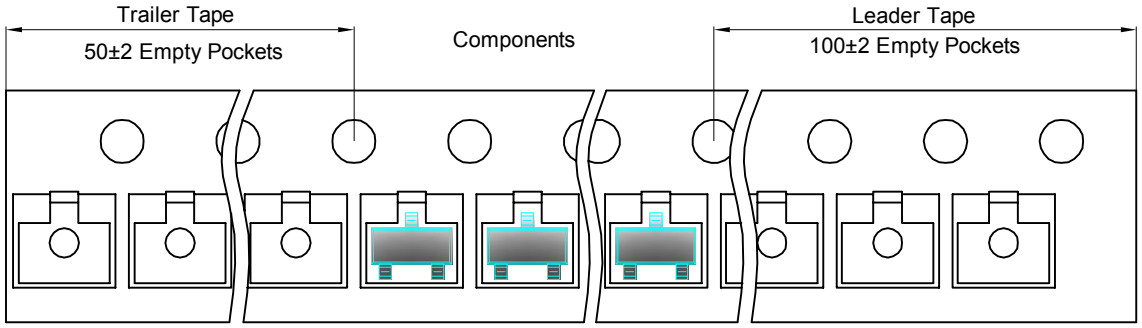
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape

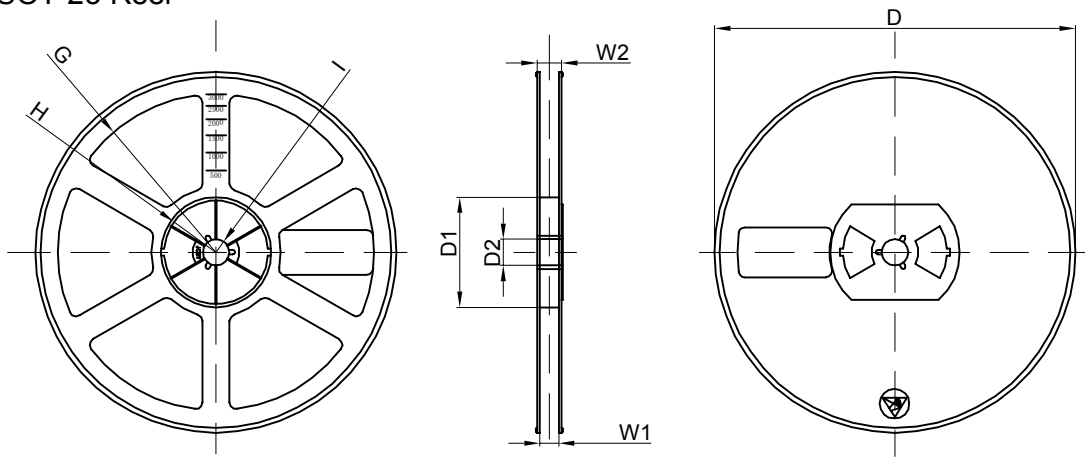


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

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	30,000 pcs	203×203×195	120,000 pcs	438×438×220	