



20V N-Channel Mosfet

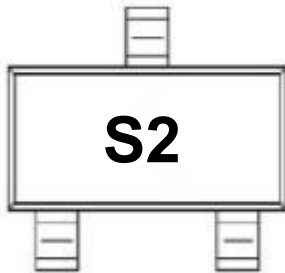
FEATURES

- $R_{DS(ON)} \leq 80m\Omega$ (53m Ω Typ.)
@ $V_{GS}=4.5V$
- $R_{DS(ON)} \leq 115m\Omega$ (72m Ω Typ.)
@ $V_{GS}=2.5V$

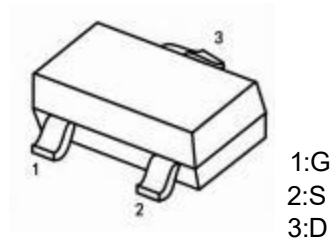
APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter

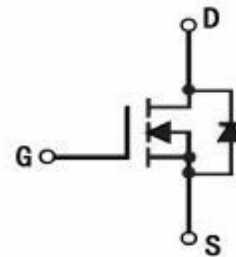
MARKING



SOT-23



N-CHANNEL MOSFET

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

Parameter	Symbol	Value	Unit
Drain- Source Voltage	V_{DS}	20	V
Gate- Source Voltage	V_{GS}	± 10	
Continuous Drain Current	I_D	2	A
Pulsed Drain Current	I_{DM}	8	
Maximum Power Dissipation	P_D	0.4	W
Thermal Resistance from Junction to Ambient($t \leq 5s$)	$R_{\theta JA}$	312	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~+150	

MOSFET ELECTRICAL CHARACTERISTICS $T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

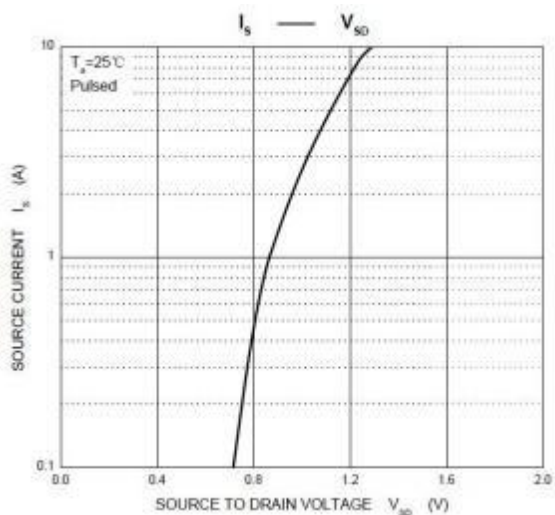
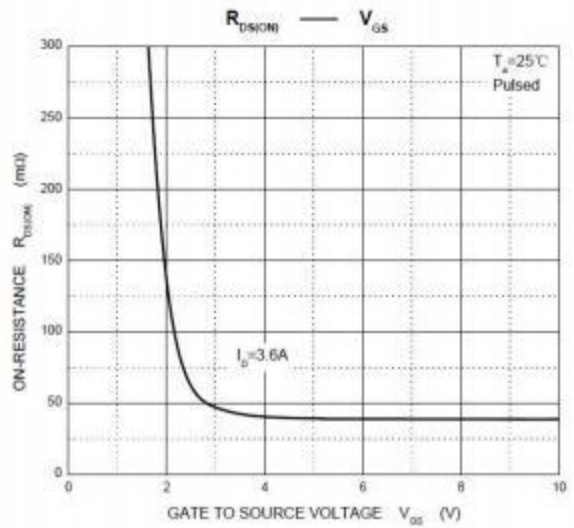
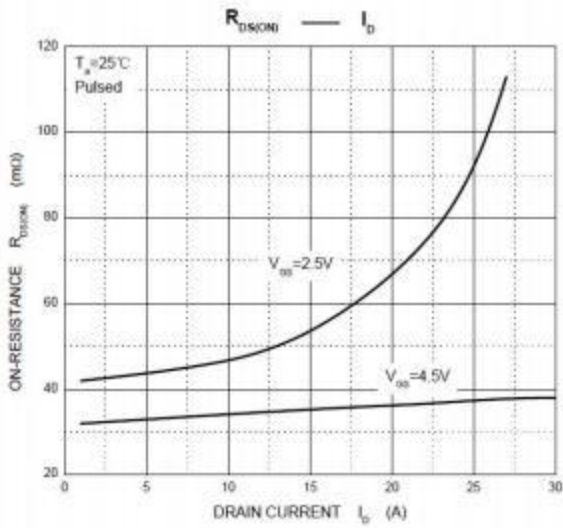
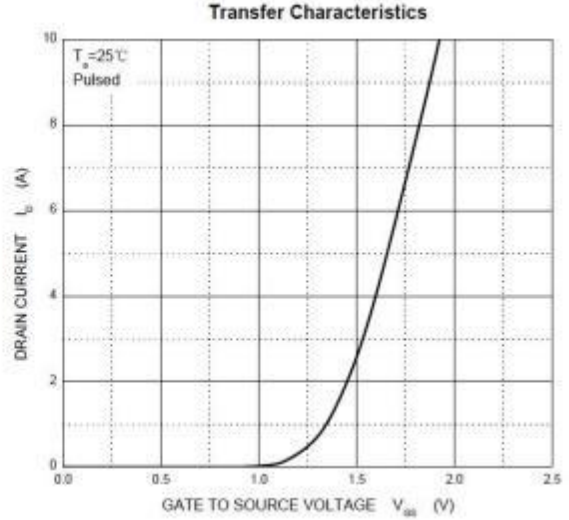
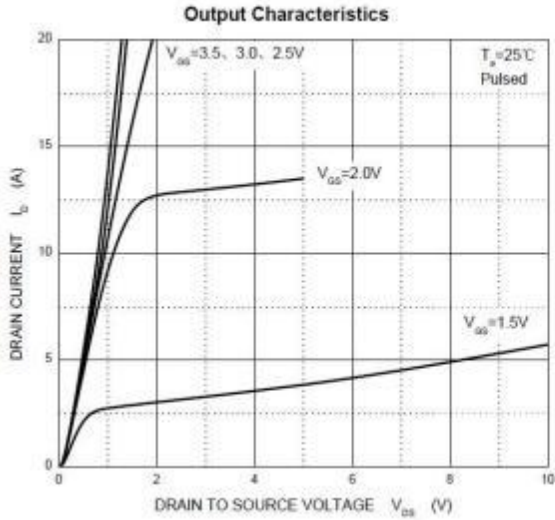
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
$V_{(BR)DSS}$	Drain-source breakdown voltage	$V_{GS} = 0V, I_D = 250\mu A$	20	-	-	V
I_{DSS}	Zero gate voltage drain current	$V_{DS} = 20V, V_{GS} = 0V$	-	-	1	μA
I_{GSS}	Gate-body leakage current	$V_{GS} = \pm 10V, V_{DS} = 0V$	-	-	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate threshold voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	0.7	1.2	V
$R_{DS(on)}$	Drain-source on-resistance ^{note1}	$V_{GS} = 4.5V, I_D = 2A$	-	53	80	m Ω
		$V_{GS} = 2.5V, I_D = 2A$	-	72	115	
Dynamic characteristics ^{note2}						
C_{iss}	Input Capacitance	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$	-	300	-	pF
C_{oss}	Output Capacitance		-	120	-	
C_{rss}	Reverse Transfer Capacitance		-	80	-	
Q_g	Total gate charge	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 3.6A$	-	4	10	nC
Q_{gs}	Gate-source charge		-	0.65	-	
Q_{gd}	Gate-drain charge		-	1.5	-	
Switching Characteristics ^{note2}						
$t_{d(on)}$	Turn-on delay time	$V_{DD} = 10V,$ $R_L = 5.5\Omega, I_D = 3.6A,$ $V_{GEN} = 4.5V, R_g = 6\Omega$	-	7	15	nS
t_r	Rise time		-	55	80	
$t_{d(off)}$	Turn-off delay time		-	16	60	
t_f	Fall time		-	10	25	
Source-Drain Diode characteristics						
V_{SD}	Diode Forward voltage	$V_{GS} = 0V, I_S = 1A$	-	0.7	1.2	V

Notes :

1. Pulse Test : Pulse Width < 300 μs , Duty Cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production testing.

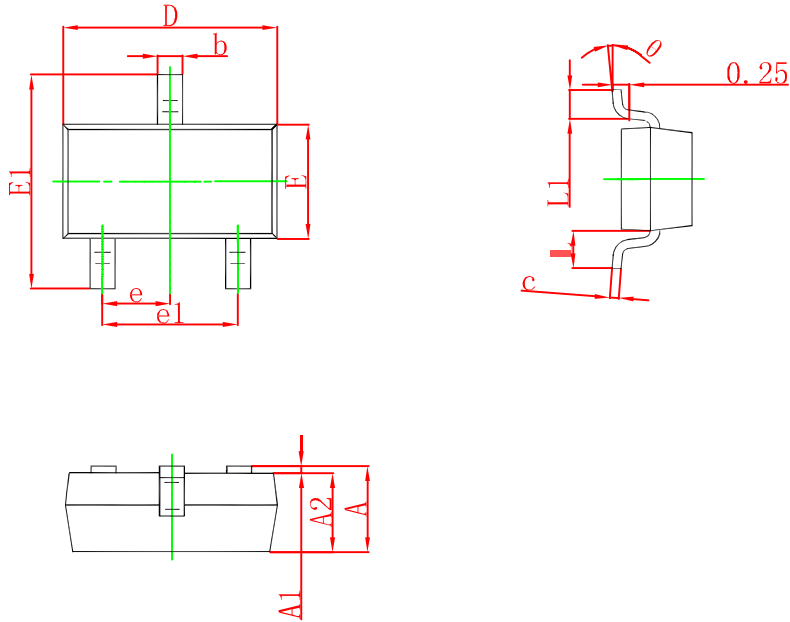


TYPICAL PERFORMANCE CHARACTERISTICS





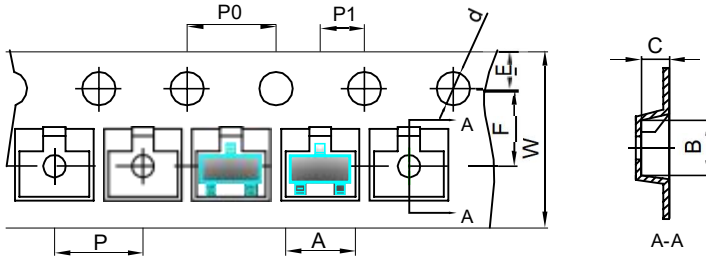
SOT-23 PACKAGE OUTLINE DRAWING



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°

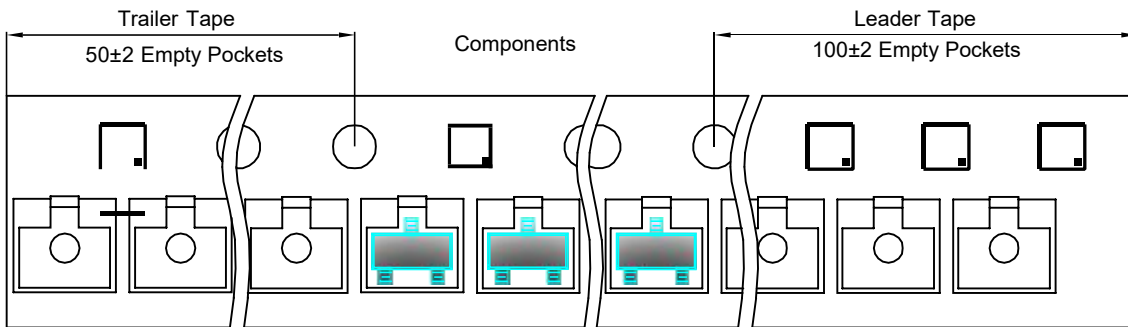
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape

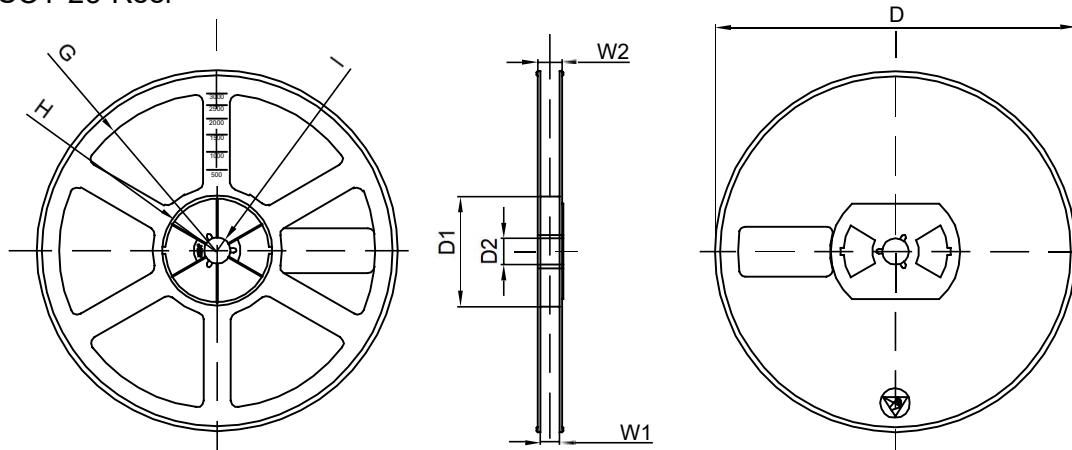


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

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	