

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
-30V	45mΩ@-10V	-4.1A
	57mΩ@-4.5V	

### Feature

- Trench Technology Power MOSFET
- Low  $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance

### Application

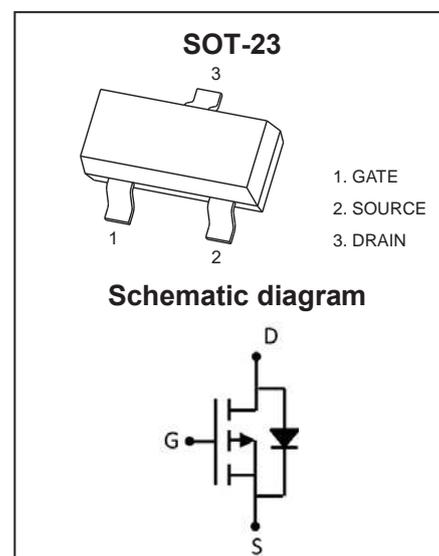
- Load Switch
- PWM Applications

### MARKING:



### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	$V_{DS}$	-30	V
Gate - Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current <sup>1,5</sup>	$I_D$	-4.1	A
	$T_A = 25^\circ\text{C}$		
Pulsed Drain Current <sup>2</sup>	$I_{DM}$	-16	A
Power Dissipation <sup>4,5</sup>	$P_D$	1.4	W
	$T_A = 25^\circ\text{C}$		
Thermal Resistance from Junction to Ambient <sup>5</sup>	$R_{\theta JA}$	89	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~ +150	$^\circ\text{C}$



**MOSFET ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°C unless otherwise noted)**

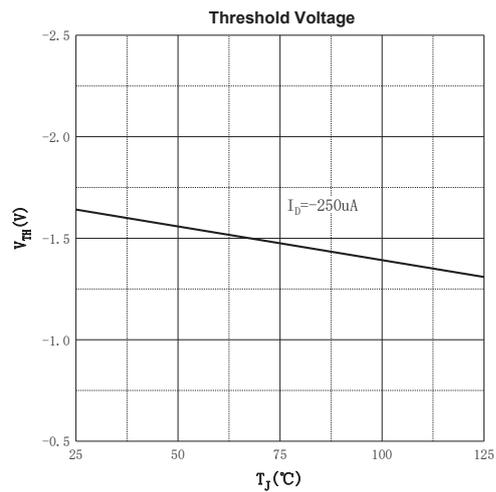
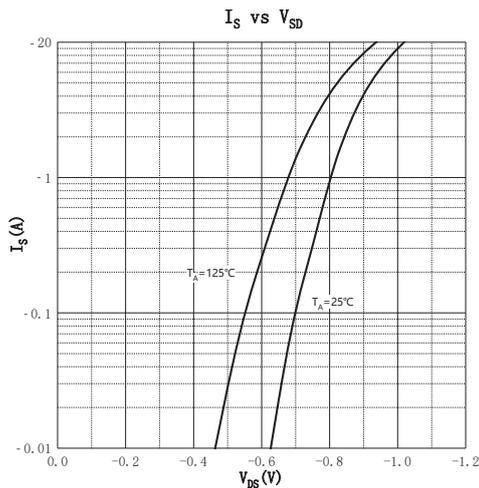
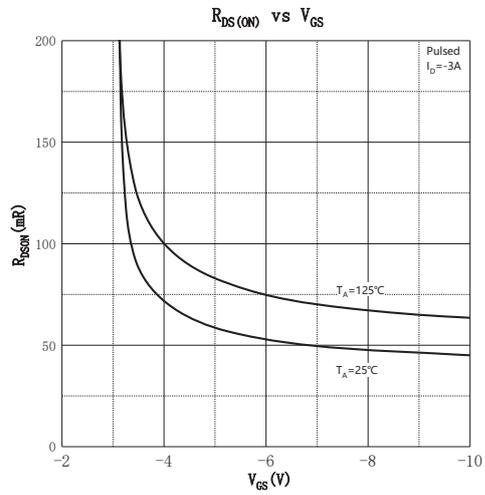
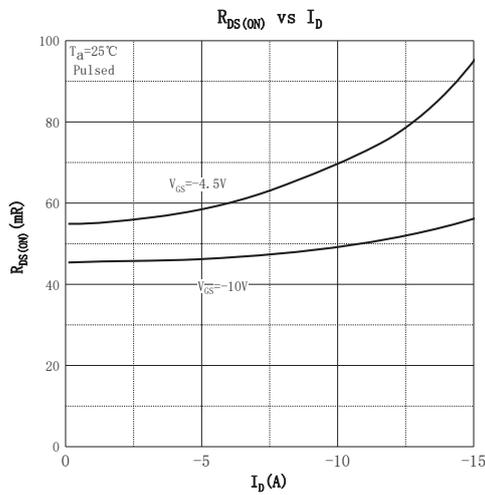
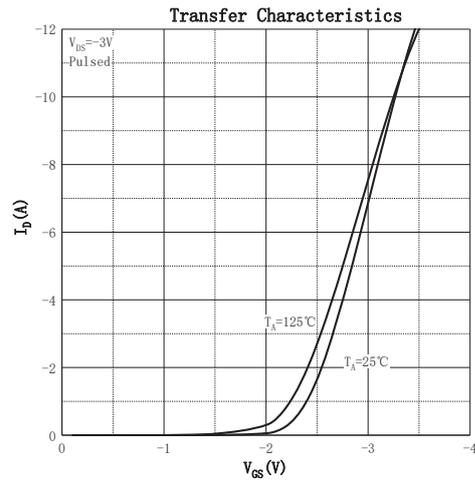
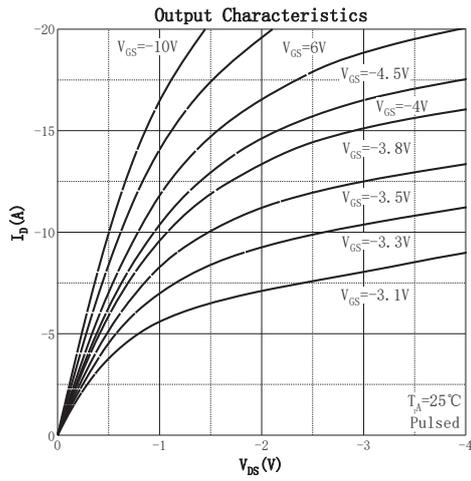
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain - Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -24V, V <sub>GS</sub> = 0V			-1	μA
Gate - Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±100	nA
<b>On Characteristics<sup>3</sup></b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-1	-1.6	-3	V
Drain-source On-resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -4.1A		45	60	mΩ
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -3A		57	80	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> = -5V, I <sub>D</sub> = -4A	5			S
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1MHz		572		pF
Output Capacitance	C <sub>oss</sub>			65		
Reverse Transfer Capacitance	C <sub>rss</sub>			57		
<b>Switching Characteristics</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = -10V, I <sub>D</sub> = -4.1A		10		nC
Gate-source Charge	Q <sub>gs</sub>			2		
Gate-drain Charge	Q <sub>gd</sub>			3.4		
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -15V, V <sub>GS</sub> = -10V, R <sub>L</sub> = 3.65Ω, R <sub>G</sub> = 3Ω		8		ns
Turn-on Rise Time	t <sub>r</sub>			6.2		
Turn-off Delay Time	t <sub>d(off)</sub>			25		
Turn-off Fall Time	t <sub>f</sub>			10		
<b>Source - Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	V <sub>DS</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = -2A			1.2	V

Notes :

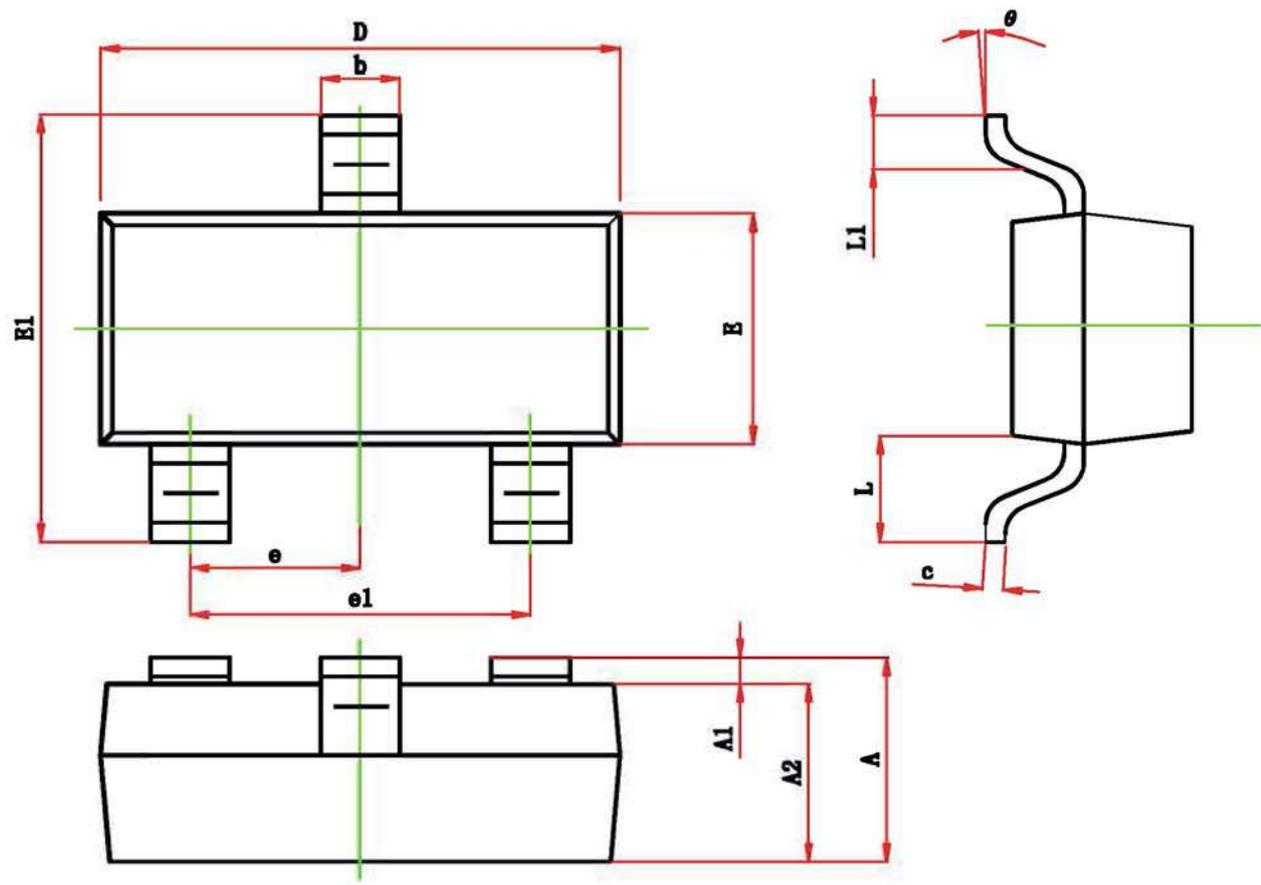
- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 4.The power dissipation P<sub>D</sub> is limited by T<sub>J(MAX)</sub> = 150°C.
- 5.Device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with T<sub>A</sub> =25°C.



Typical Characteristics



**SOT-23 Package Information**

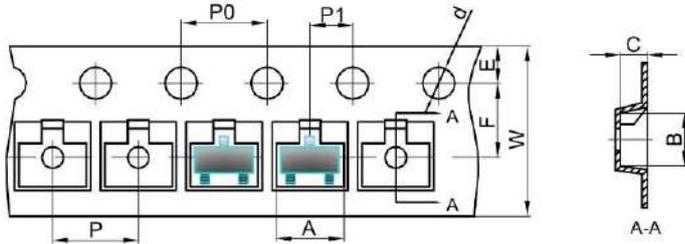


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 REF.		0.037 REF.	
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**

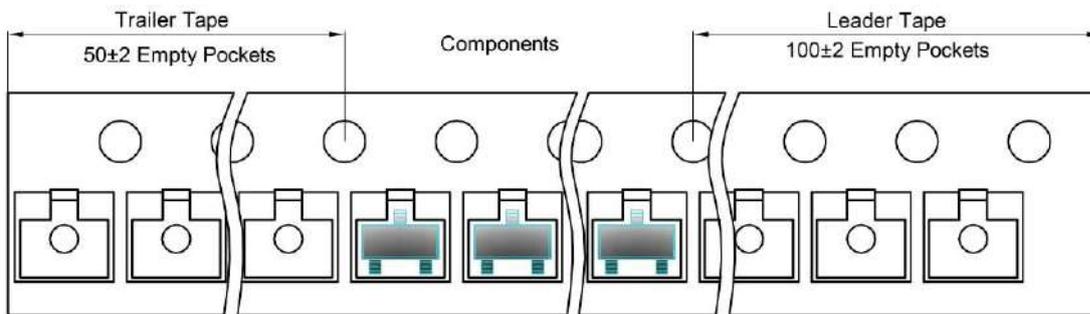
**SOT-23 Tape and reel**

SOT-23 Embossed Carrier Tape

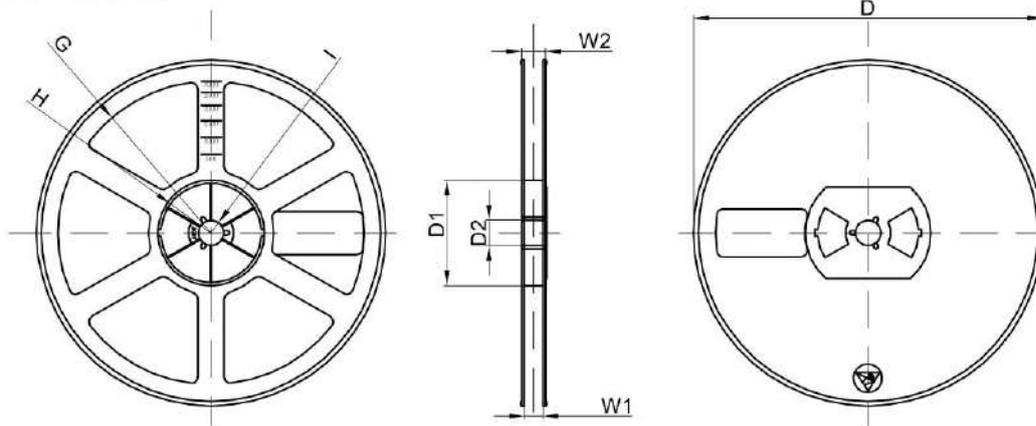


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

**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	



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  - b.support or sustain life,
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