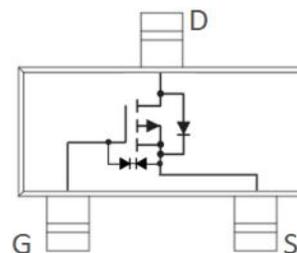


**◆ Features & Applications**

Super high density cell design for extremely low RDS(ON) .  
 Exceptional on-resistance and maximum DC current capability.  
 ESD Protection.


**◆ Absolute Maximum Ratings(Ta=25°C)**

Symbol	Parameter	Value	Unit
V <sub>DS</sub>	Drain-Source Voltage	-50	V
V <sub>GS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub>	Continuous Drain Current	-0.13	A
I <sub>DM</sub>	Pulsed Drain Current (tp=10s)	-0.5	A
P <sub>D</sub>	Power Dissipation	350	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient (t≤5s)	350	°C/W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction And Storage Temperature Range	-55~+150	°C

**◆ Electrical Characteristics (Ta=25°C unless otherwise specified)**

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
<b>Static</b>						
V <sub>(BR)DSS</sub>	Drain-source breakdown voltage	V <sub>GS</sub> =0, I <sub>D</sub> =250μA	-50			V
V <sub>GS(th)</sub>	Gate threshold voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	-0.8		-2.0	V
I <sub>GSS</sub>	Gate-body leakage current	V <sub>DS</sub> =0, V <sub>GS</sub> =±10V			±10	μA
I <sub>DSS</sub>	Zero gate voltage drain current	V <sub>DS</sub> =-50V, V <sub>GS</sub> =0V			-10	μA
		V <sub>DS</sub> =-40V, V <sub>GS</sub> =0V			-100	nA
R <sub>DS(on)</sub>	Drain-source on-resistance <sup>a</sup>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-0.13A		2	5	Ω
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-0.13A		2.5	6	Ω
g <sub>FS</sub>	Forward transconductance <sup>a</sup>	V <sub>DS</sub> =-25V, I <sub>D</sub> =-0.13A	50			mS
V <sub>SD</sub>	Diode forward voltage	I <sub>S</sub> =-0.13A, V <sub>GS</sub> =0V			-1.0	V
<b>Dynamic</b>						
C <sub>iss</sub>	Input capacitance	V <sub>DS</sub> =-25V, V <sub>GS</sub> =0V, f=1MHz		25		pF
C <sub>oss</sub>	Output capacitance			15		
C <sub>rss</sub>	Reverse transfer capacitance <sup>b</sup>			3.5		
<b>Switching<sup>b</sup></b>						
t <sub>d(on)</sub>	Turn-on delay time	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V I <sub>D</sub> =-200mA, R <sub>GEN</sub> =25Ω		16.7		nS
t <sub>r</sub>	Rise time			8.6		
t <sub>d(off)</sub>	Turn-off delay time			17.9		
t <sub>f</sub>	Fall time			5.3		

Notes :

a. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.

b. Guaranteed by design, not subject to producing.

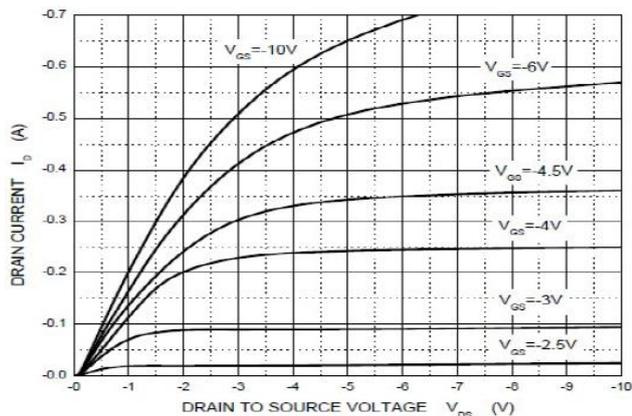
**◆ Typical Characteristics**


Figure1. Output Characteristics

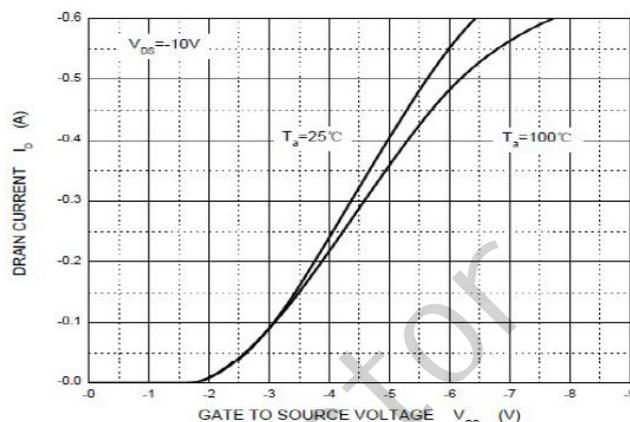


Figure2. Transfer Characteristics

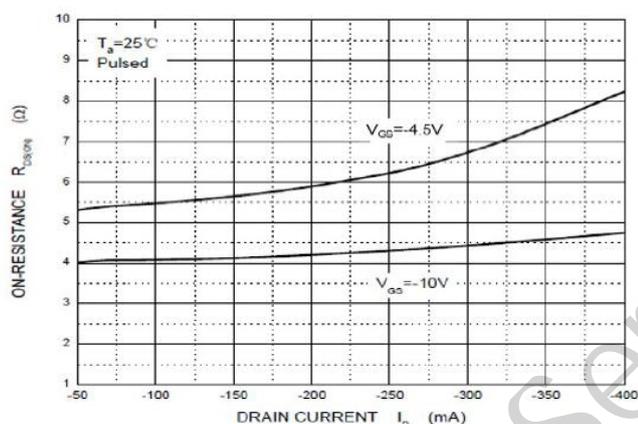


Figure3. Drain-Source on Resistance

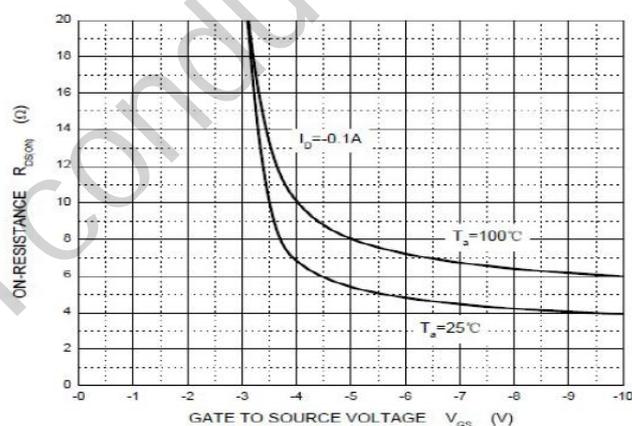


Figure4. Drain-Source on Resistance

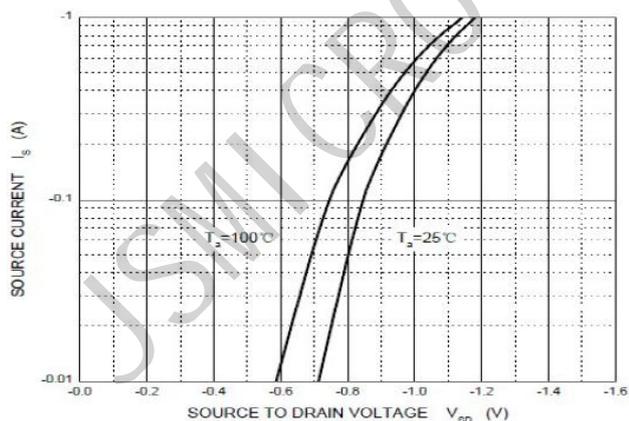


Figure5. Diode Forward Voltage vs. current

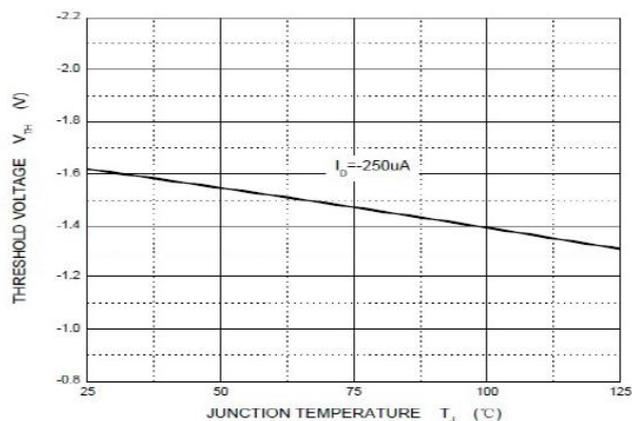
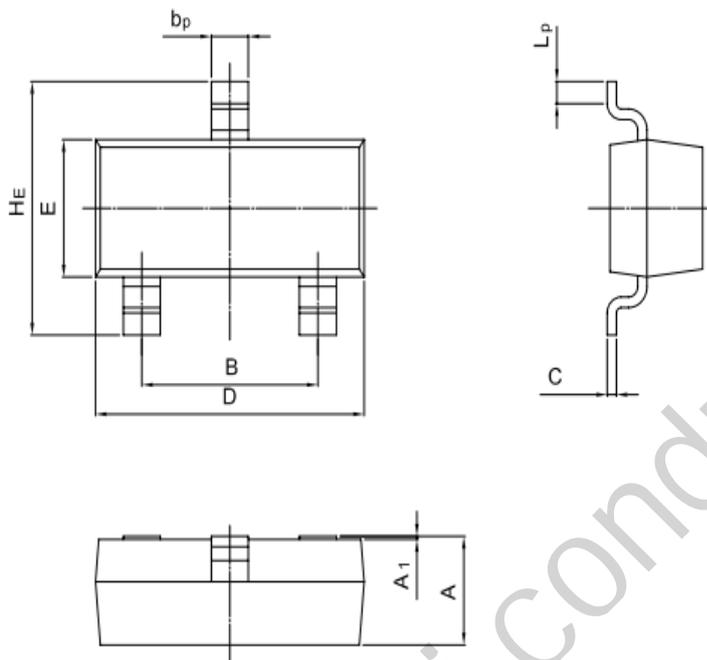


Figure6. Gate Threshold vs. Junction Temperature

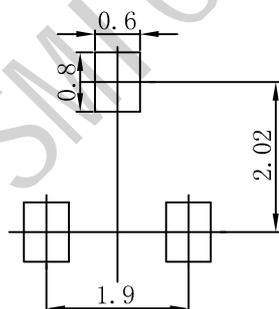
## Package Information

### SOT-23



UNIT	A	B	$b_p$	C	D	E	$H_E$	$A_1$	$L_p$
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20

### SOT-23 Suggested Pad Layout



#### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.