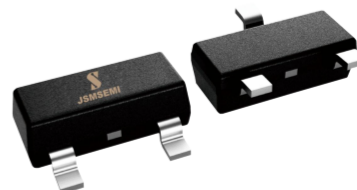
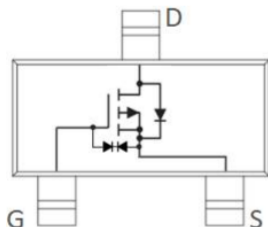


◆ Features & Applications

Super high density cell design for extremely low $R_{DS(ON)}$.
 Exceptional on-resistance and maximum DC current capability.
 ESD Protection.



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

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	-50	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	-0.13	A
I_{DM}	Pulsed Drain Current ($t_p=10\text{s}$)	-0.5	A
P_D	Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient ($t \leq 5\text{s}$)	350	$^{\circ}\text{C/W}$
T_J, T_{stg}	Operation Junction And Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

◆ Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-source breakdown voltage	$V_{GS}=0, I_D=250\mu A$	-50			V
$V_{GS(th)}$	Gate threshold voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.8		-2.0	V
I_{GSS}	Gate-body leakage current	$V_{DS}=0, V_{GS}=\pm 10V$			± 10	μA
I_{DSS}	Zero gate voltage drain current	$V_{DS}=-50V, V_{GS}=0V$			-10	μA
		$V_{DS}=-40V, V_{GS}=0V$			-100	nA
$R_{DS(on)}$	Drain-source on-resistance ^a	$V_{GS}=-10V, I_D=-0.13A$		2	5	Ω
		$V_{GS}=-4.5V, I_D=-0.13A$		2.5	6	Ω
g_{FS}	Forward transconductance ^a	$V_{DS}=-25V, I_D=-0.13A$	50			mS
V_{SD}	Diode forward voltage	$I_S=-0.13A, V_{GS}=0V$			-1.0	V
Dynamic						
C_{iss}	Input capacitance	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$		25		pF
C_{oss}	Output capacitance			15		
C_{rss}	Reverse transfer capacitance ^b			3.5		
Switching ^b						
$t_{d(on)}$	Turn-on delay time	$V_{GS}=-10V, V_{DS}=-15V$ $I_D=-200mA, R_{GEN}=25\Omega$		16.7		nS
t_r	Rise time			8.6		
$t_{d(off)}$	Turn-off delay time			17.9		
t_f	Fall time			5.3		

Notes :

a. Pulse Test : Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

b. Guaranteed by design, not subject to producing.

◆ Typical Characteristics

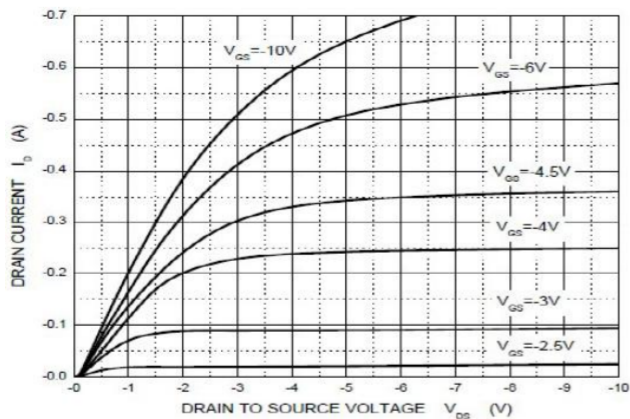


Figure1. Output Characteristics

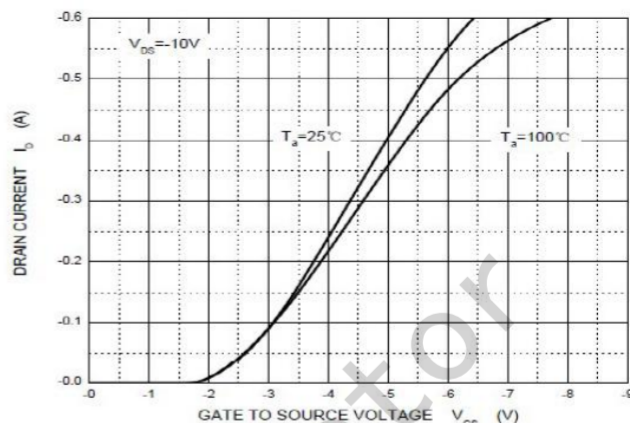


Figure2. Transfer Characteristics

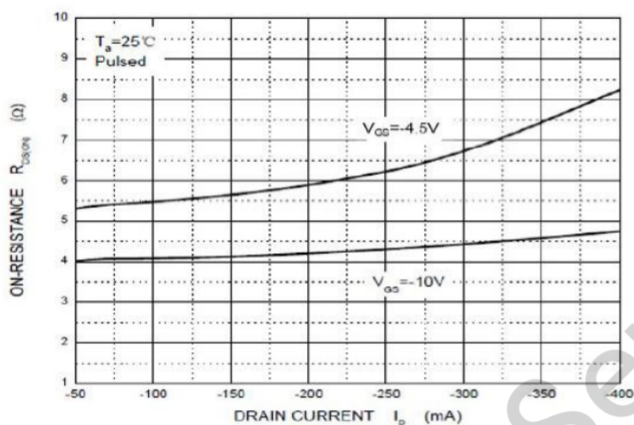


Figure3. Drain-Source on Resistance

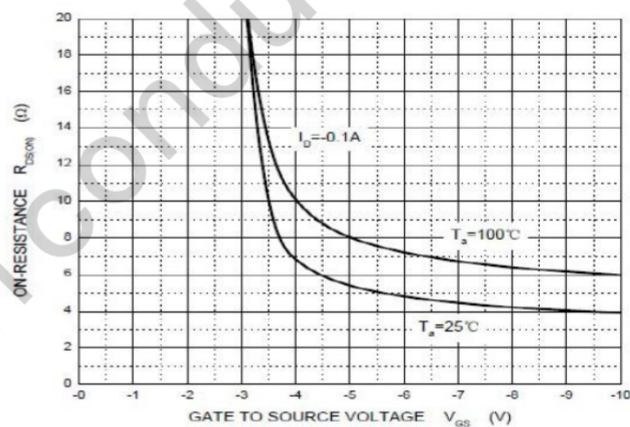


Figure4. Drain-Source on Resistance

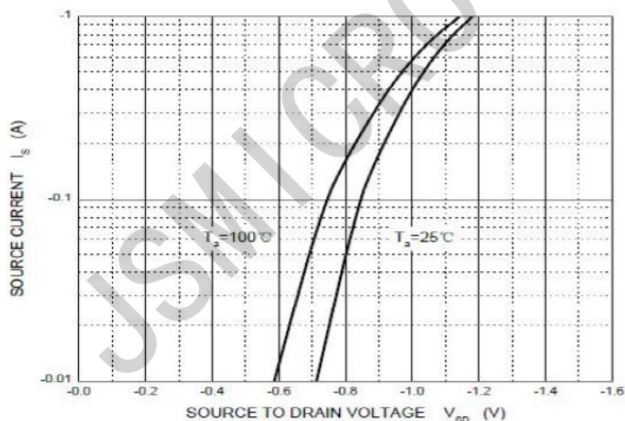


Figure5. Diode Forward Voltage vs. current

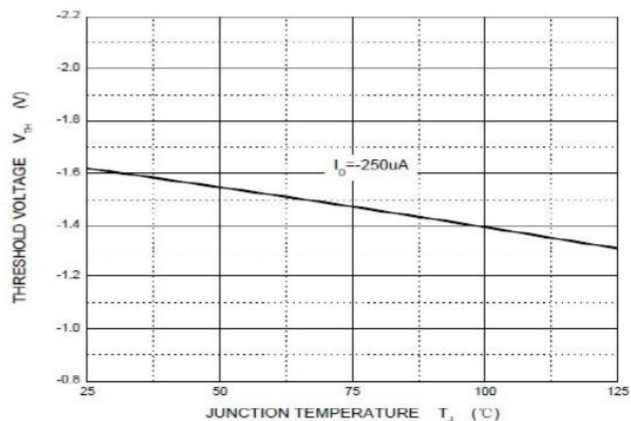
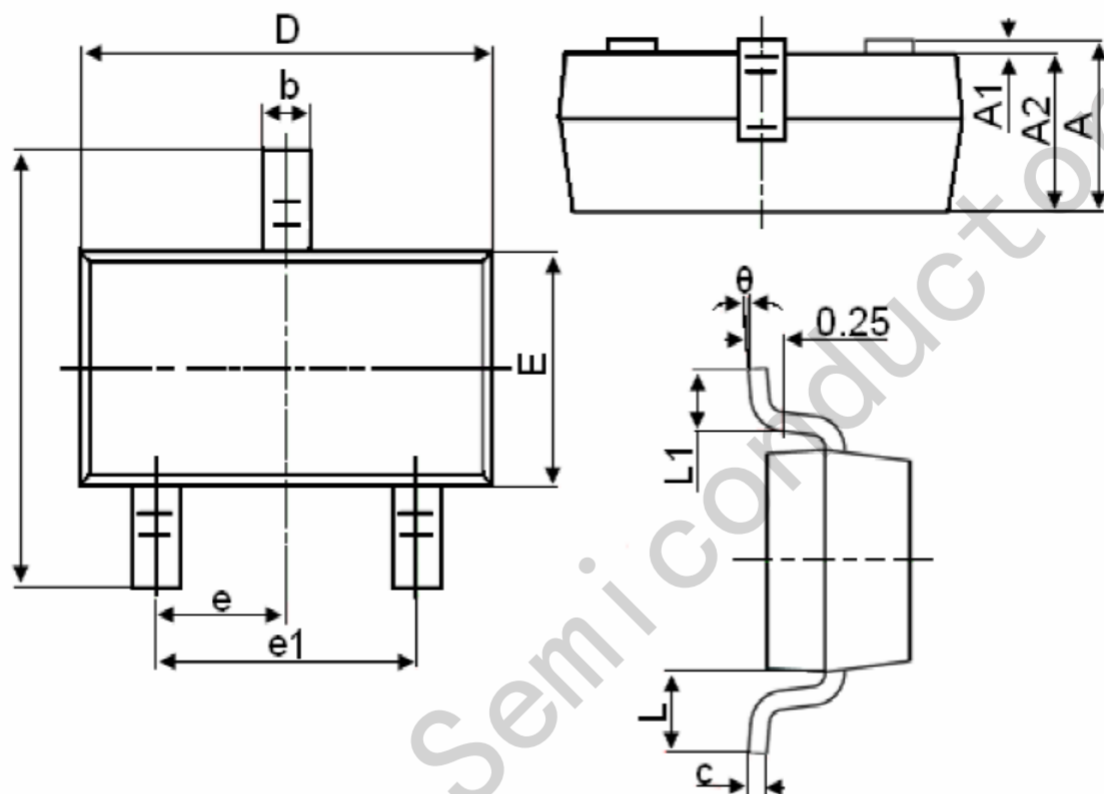


Figure6. Gate Threshold vs. Junction Temperature

Package Information

SOT-23



Symbol	Dimensions in Millimeters(mm)		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	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°