

N-Channel Enhancement Mode MOSFET

Features

- 50V/0.2A, $R_{DS(ON)}=3.5\Omega(\text{max})@V_{GS}=5V, I_D=0.2A$.
 $R_{DS(ON)}=10\Omega(\text{max})@V_{GS}=2.75V, I_D=0.2A$.
- Super High dense cell design for extremely low $R_{DS(ON)}$.
- Reliable and Rugged.
- Low Threshold Voltage (0.5V~1.5 V) Make it Ideal for Low Voltage Applications.
- ESD protected.
- SOT-23 for Surface Mount Package.

Marking: J1

Applications

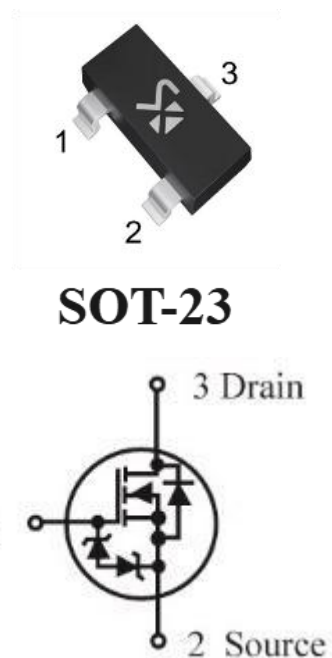
- Power Management in DC/DC Converters
- Portable and Battery-powered Products

Absolute Maximum Ratings($T_A=25^\circ\text{C}$, unless otherwise noted.)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	50	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	0.2	A

Electrical Characteristics($T_A=25^\circ\text{C}$, unless otherwise noted.)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	50			V
Drain-source leakage current	I_{DSS}	$V_{DS}=50V, V_{GS}=0V$			0.5	μA
		$V_{DS}=25V, V_{GS}=0V$			0.1	μA
Gate-source leakage current, Forward	I_{GSSF}	$V_{GS}=20V, V_{DS}=0V$			300	nA
Gate-source leakage current, Reverse	I_{GSSR}	$V_{GS}=-20V, V_{DS}=0V$			-300	nA



On Characteristics						
Gate Threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=1.0mA$	0.5		1.5	V
Drain-source on resistance	$R_{DS(on)}$	$V_{GS}= 5.0V, I_D= 0.2A$			3.5	Ω
		$V_{GS}= 2.75V, I_D= 0.2A$			10	Ω
Drain-Source Diode Characteristics						
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_D= 0.2A$			2.5	V
Dynamic Characteristics						
Input Capacitance	C_{ISS}	$V_{DS}=25V, V_{GS}=0V,$ $f=1MHz$		31		pF
Output Capacitance	C_{OSS}			4		pF
Reverse Transfer Capacitance	C_{RSS}			3		pF
Internal Gate Resistance	R_G	$f=1MHz$		61		Ω

Typical Characteristics

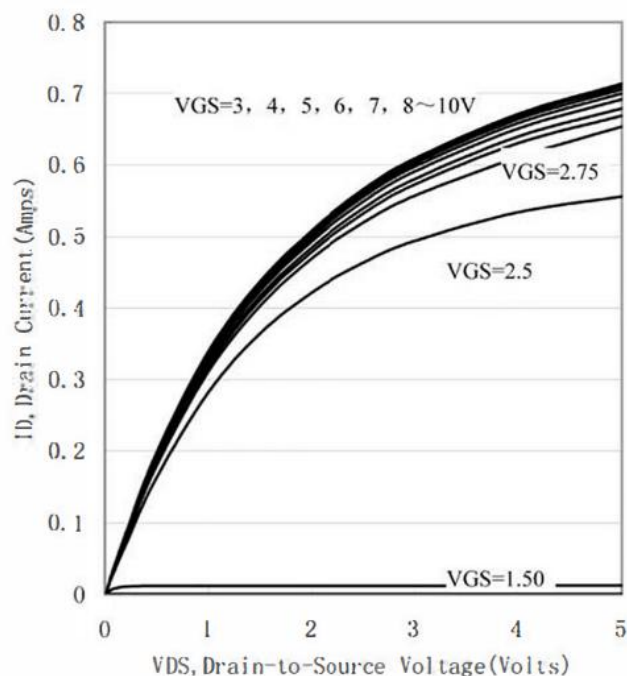


Figure 1. Output Characteristics

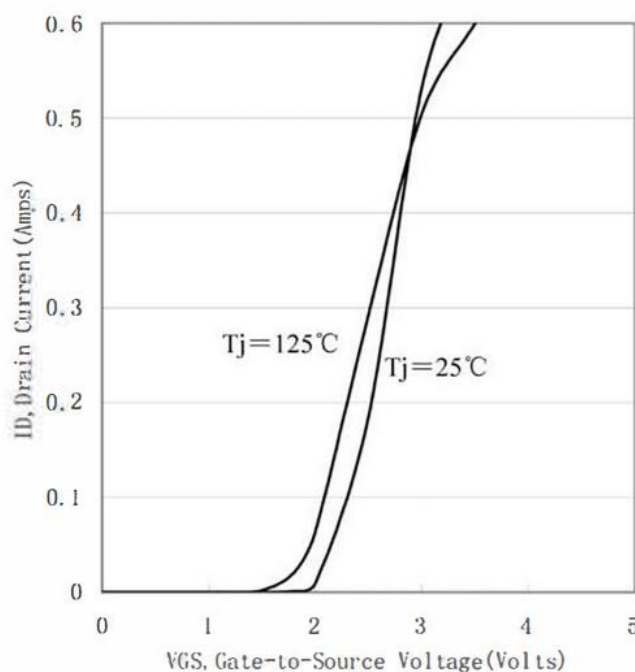


Figure 2. Transfer Characteristics

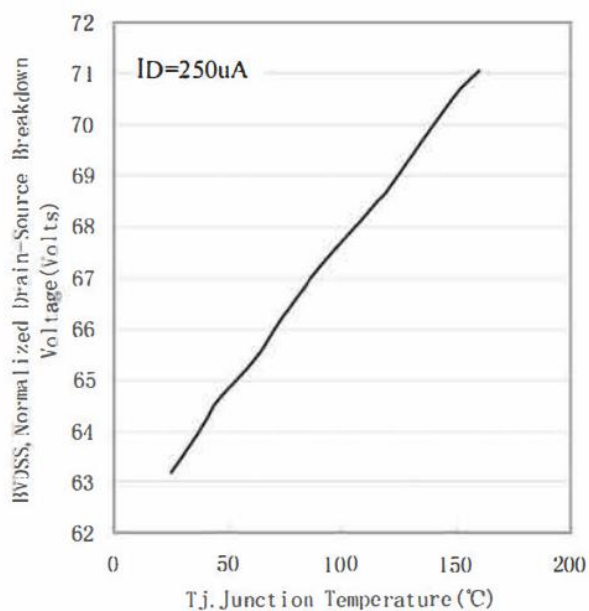


Figure 3. Breakdown Voltage Variation with Temperature

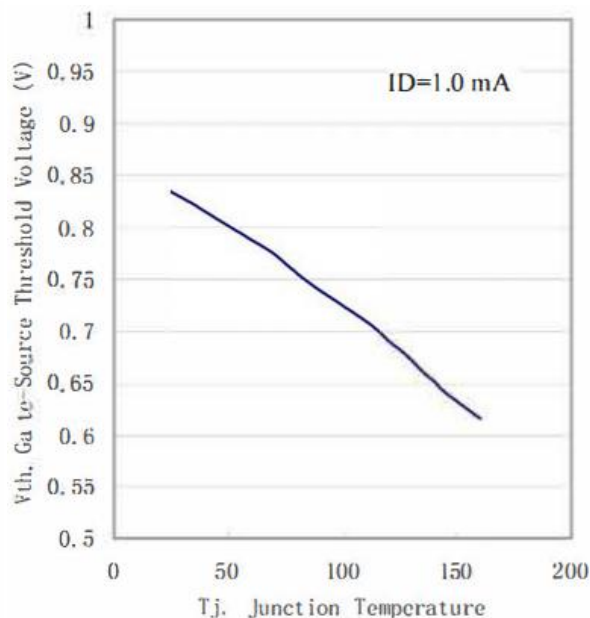


Figure 4. Gate Threshold Variation with Temperature

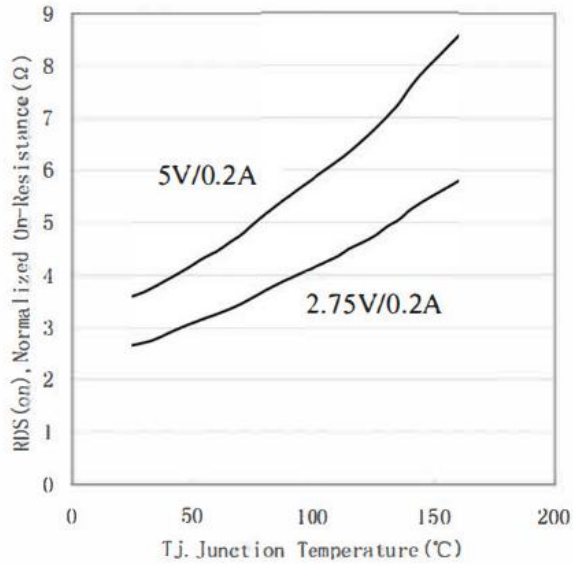


Figure 5. On-Resistance Variation with Temperature

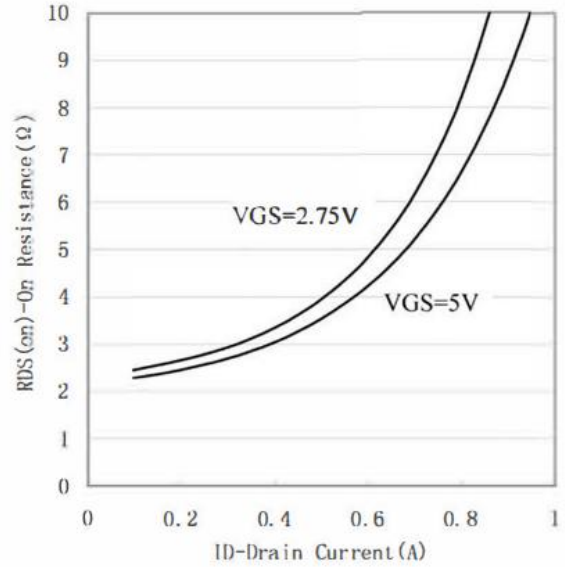


Figure 6. On-Resistance vs. Drain Current

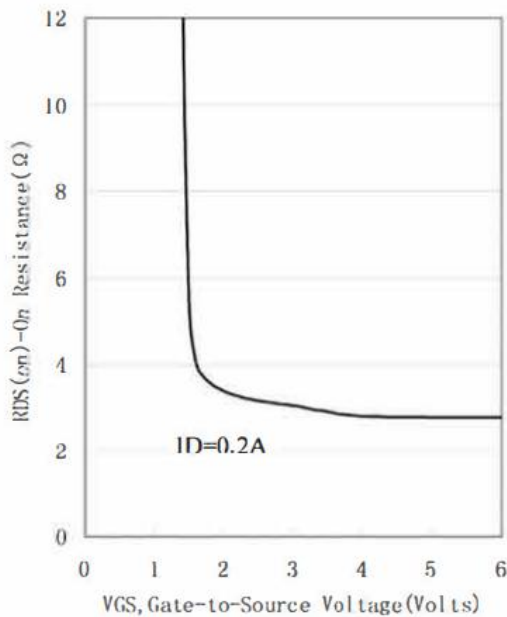


Figure 7. On-Resistance vs. Gate-to-Source Voltage

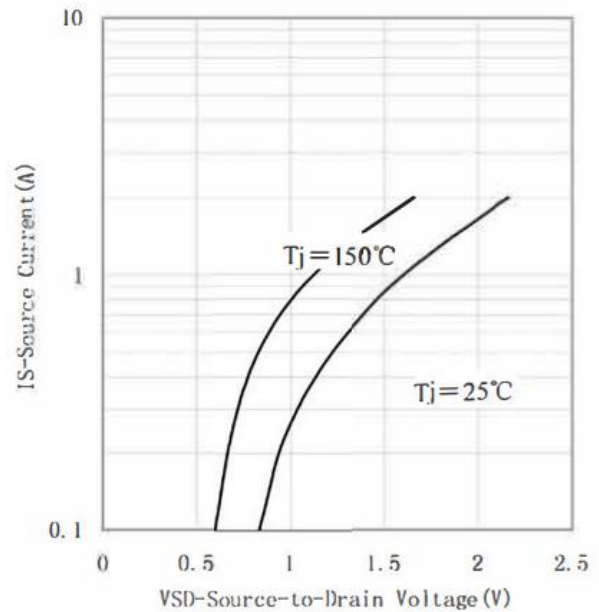
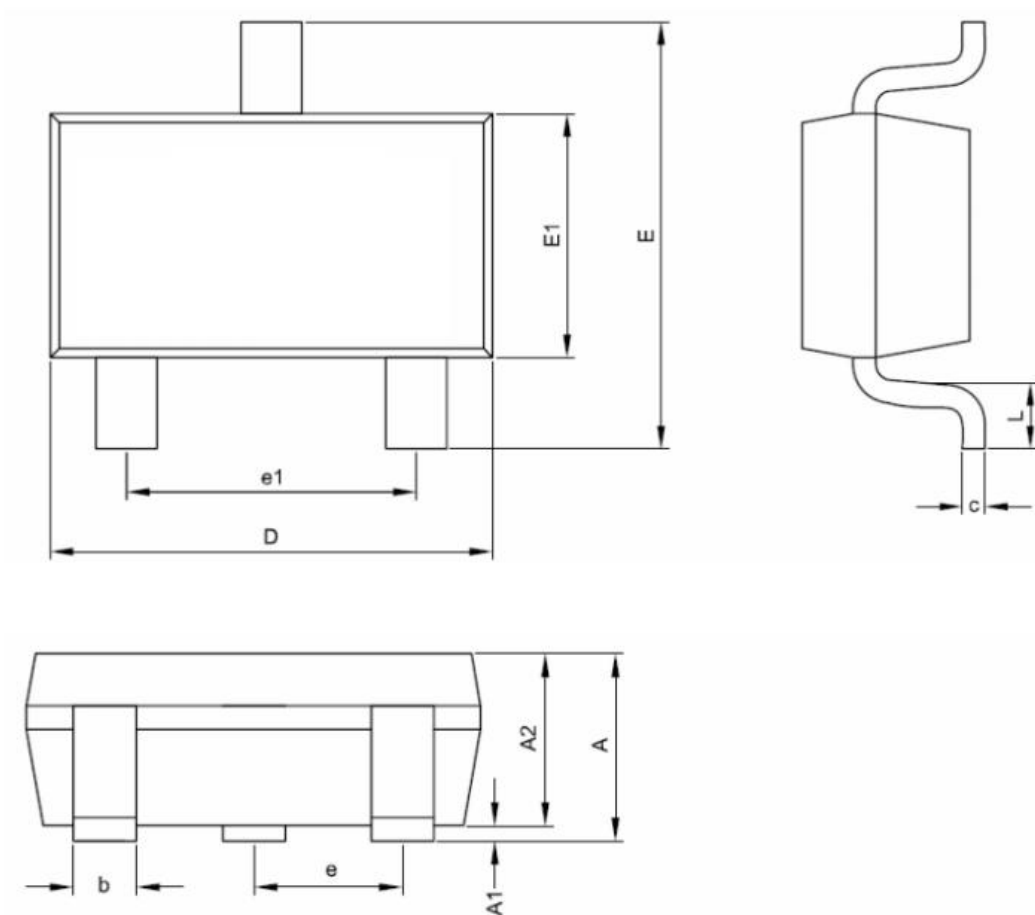


Figure 8. Source-Drain Diode Forward Voltage

Package Information

SOT-23

Dimensions in mm



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	—	1.12
A1	0.00	0.1
A2	0.90	1.02
D	2.90 BSC	
E	2.40 BSC	
E1	1.20	1.40
c	0.08	0.25
b	0.30	0.50
e	0.95 BSC	
e1	1.90 BSC	
L	0.20	0.60