2SK1590

N-Channel Enhancement Mode MOSFET

Feature

·60V/0.2A, $R_{DS(ON)}$ = 3.5Ω(MAX) @V_{GS} = 5V. Id = 0.2A

$R_{DS(ON)}$ = 10Ω(MAX) @V_{GS} = 2.75V. Id = 0.2A

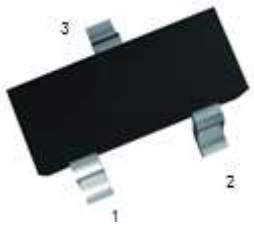
·Super High dense cell design for extremely low $R_{DS(ON)}$.

·Reliable and Rugged.

·Low Threshold Voltage (0.5V—1.5V) Make it Ideal for Low Voltage Applications.

·SOT-23 for Surface Mount Package.

SOT-23



1：Gate 2：Source 3：Drain

Applications

·Power Management in DC/DC Converters

Portable and Battery-powered Products.

Absolute Maximum Ratings

T_A=25℃ Unless Otherwise noted

Parameter	Symbol	Limit	Units
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	0.2	A

Electrical Characteristics

T_A=25℃ Unless Otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ.	Max	Units
Off Characteristics						
Drain to Source Breakdown Voltage	BVDSS	VGS=0V, ID=250μA	60	-	-	V
Zero-Gate Voltage Drain Current	IDSS	VDS=50V, VGS=0V	-	-	0.5	μA
		VDS=25V, VGS=0V	-	-	0.1	
Gate Body Leakage Current, Forward	IGSSF	VGS=20V, VDS=0V	-	-	100	nA
Gate Body Leakage Current, Reverse	IGSSR	VGS=-20V, VDS=0V	-	-	-100	nA
On Characteristics						
Gate Threshold Voltage	VGS(th)	VGS= VDS, ID=1.0 mA	0.5	-	1.5	V
Static Drain-source On-Resistance	RDS(ON)	VGS =5.0V, ID =0.2A	-	-	3.5	Ω
		VGS =2.75V, ID =0.2A	-	-	10	Ω
Drain-Source Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	VSD	VGS =0V, IS=0.2A			2.5	V

Typical Characteristics

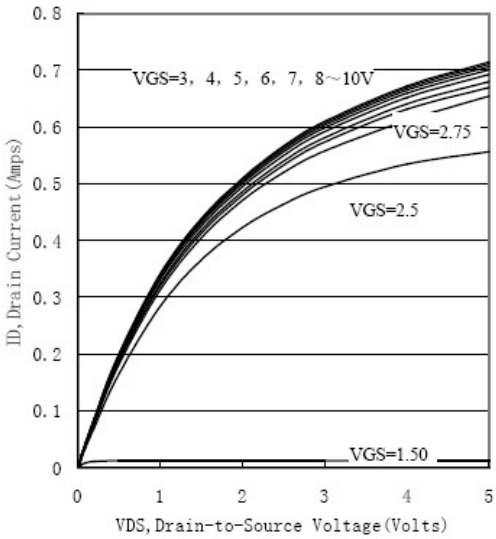


Figure 1. Output Characteristics

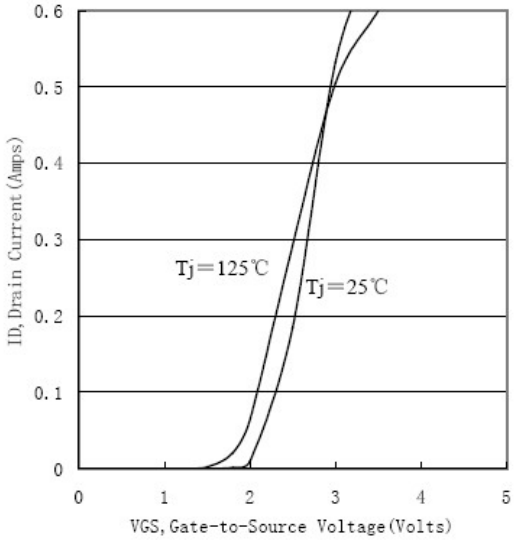


Figure 2. Transfer Characteristics

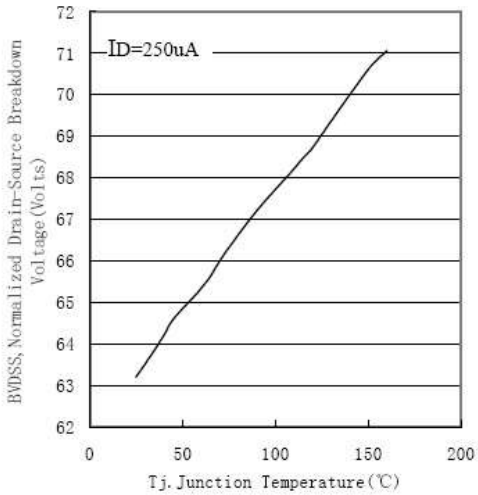


Figure 3. Breakdown Voltage Variation with Temperature

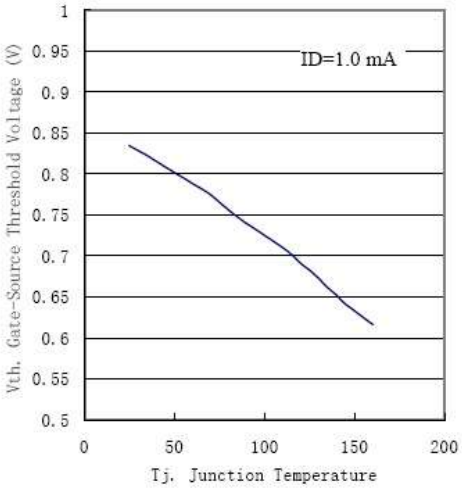


Figure 4. Gate Threshold Variation with Temperature

Typical Characteristics

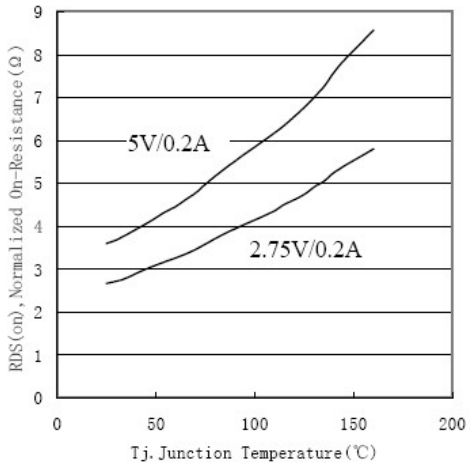


Figure 5. On-Resistance Variation with Temperature

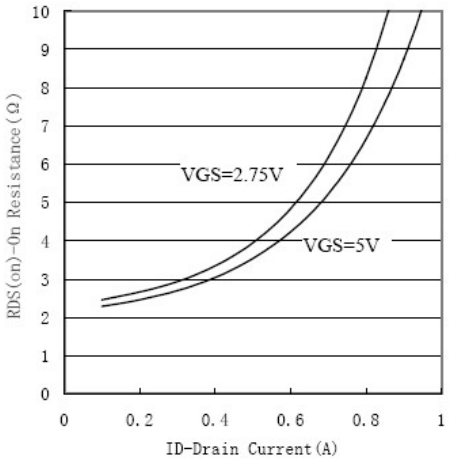


Figure 6. On-Resistance vs. Drain Current

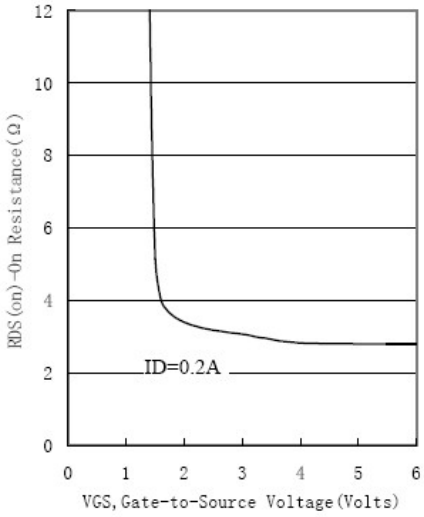


Figure 7. On-Resistance vs. Gate-to-Source Voltage

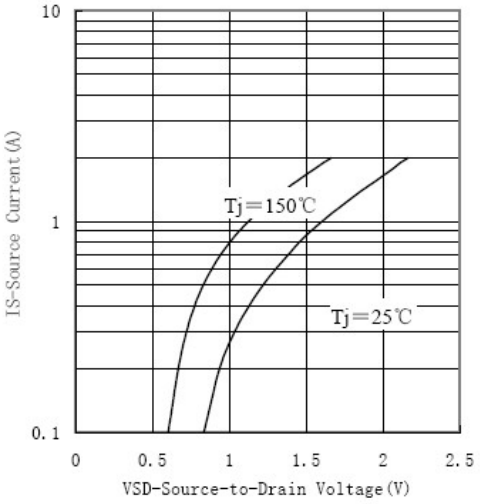
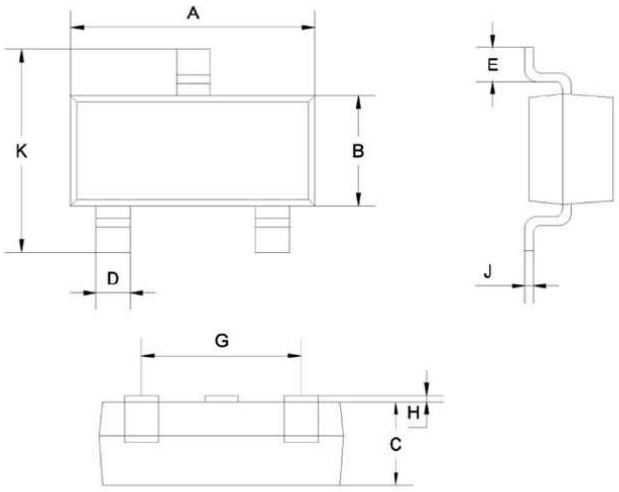


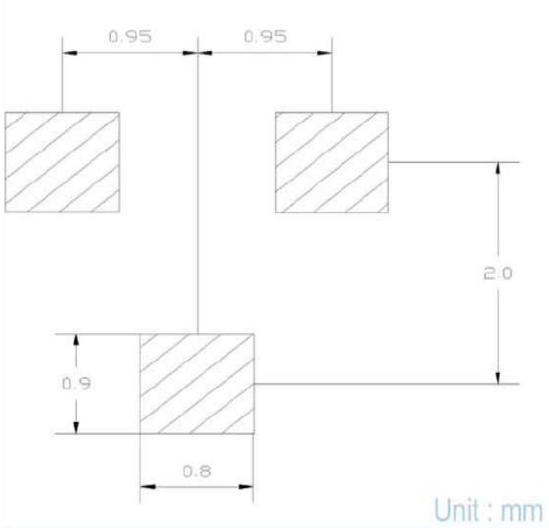
Figure 8. Source-Drain Diode Forward Voltage

SOT-23 Package Outline Dimensions (UNIT: mm)



SOT-23		
Dim	Min	Max
A	2.85	2.95
B	1.25	1.35
C	1.0Typical	
D	0.37	0.43
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1Typical	
K	2.35	2.45
All Dimensions in mm		

Soldering Footprint



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