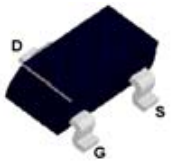
2N7002K

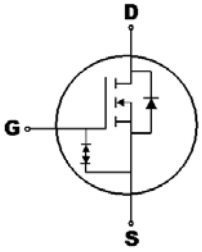
N-Channel Enhancement Mode MOSFET

Feature

- 60V/0.5A, $R_{DS(ON)}$ = 2000mΩ (MAX) @V_{GS} = 10V. Id = 0.5A
  $R_{DS(ON)}$ = 2500mΩ (MAX) @V_{GS} = 4.5V. Id = 0.2A
  $R_{DS(ON)}$ = 4500mΩ (MAX) @V_{GS} = 2.5V. Id = 0.1A
- Super High dense cell design for extremely low $R_{DS(ON)}$.
- Reliable and Rugged.
- ESD Protection : HBM≧ 1.5KV
- SOT-23 for Surface Mount Package.



SOT-23



Applications

- Power Management in Desktop Computer or DC/DC Converters .

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	0.5	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=10μA	60	-	-	V
Zero-Gate Voltage Drain Current	IDSS	VDS=60V, VGS=0V	-	-	1	μA
Gate Body Leakage Current, Forward	IGSSF	VGS=20V, VDS=0V	-	-	10	μA
Gate Body Leakage Current, Reverse	IGSSR	VGS=-20V, VDS=0V	-	-	-10	μA
On Characteristics						
Gate Threshold Voltage	VGS(th)	VGS= VDS, ID=250μA	0.85	1.2	2.5	V
Static Drain-source On-Resistance	RDS(ON)	VGS =10V, ID =0.5A	-	1200	2000	mΩ
		VGS =4.5V, ID =0.2A	-	1400	2500	mΩ
		VGS =2.5V, ID =0.1A	-	-	4500	mΩ
Drain-Source Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	VSD	VGS =0V, IS=0.2A			1.5	V

Typical Characteristics

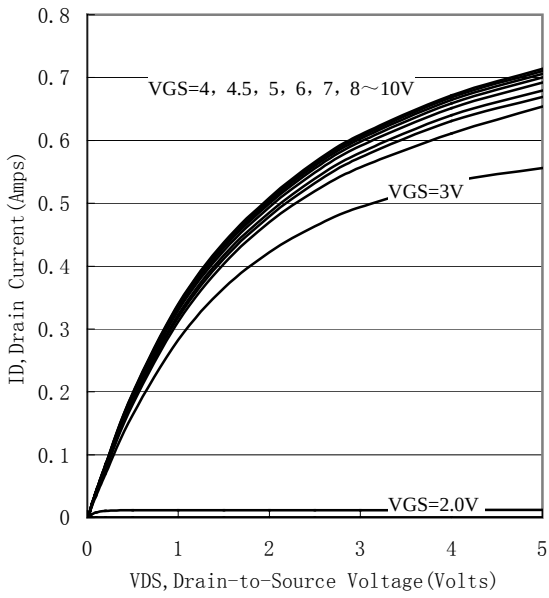


Figure 1. Output Characteristics

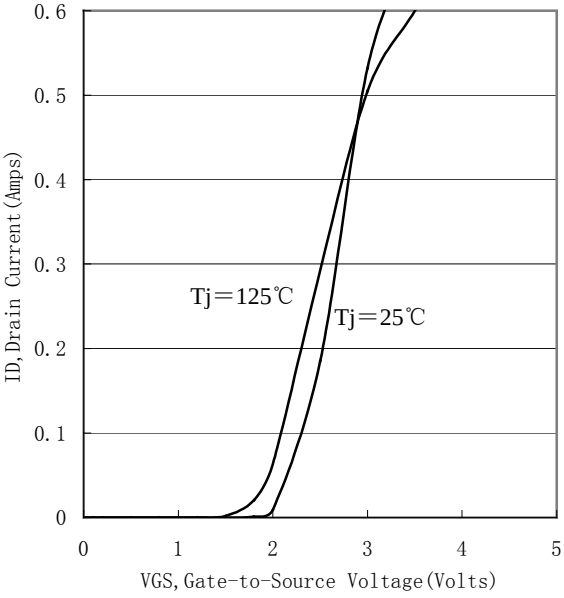


Figure 2. Transfer Characteristics

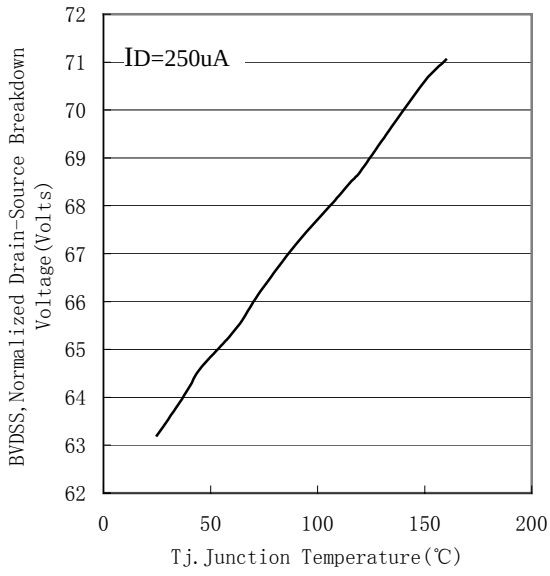


Figure 3. Breakdown Voltage Variation with Temperature

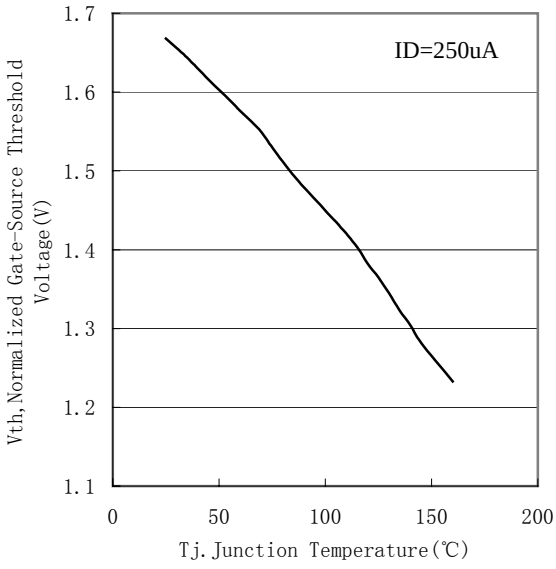


Figure 4. Gate Threshold Variation with Temperature

Typical Characteristics

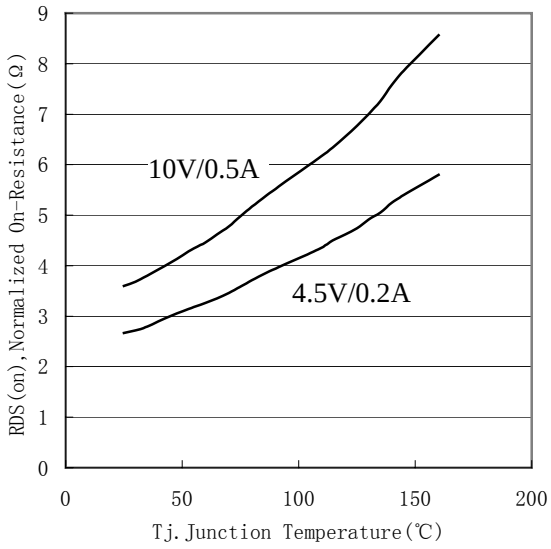


Figure 5. On-Resistance Variation with Temperature

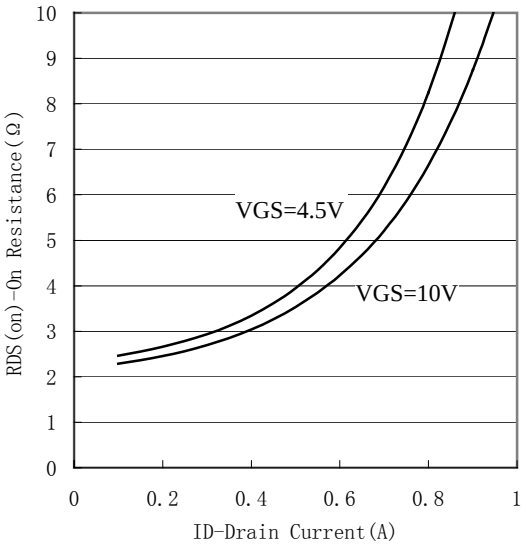


Figure 6. On-Resistance vs. Drain Current

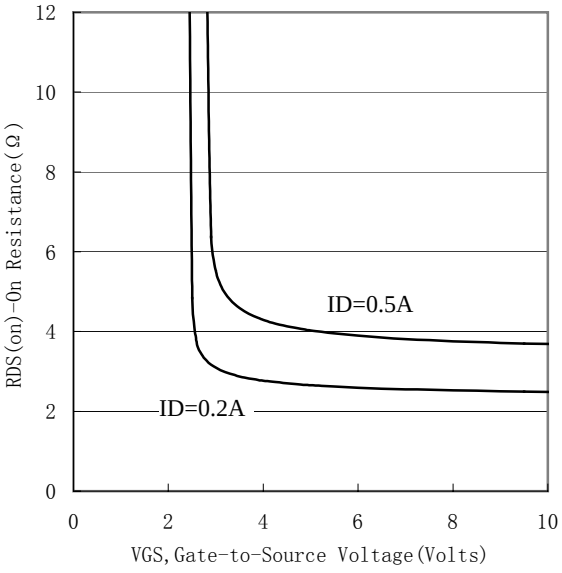


Figure 7. On-Resistance vs. Gate-to-Source Voltage

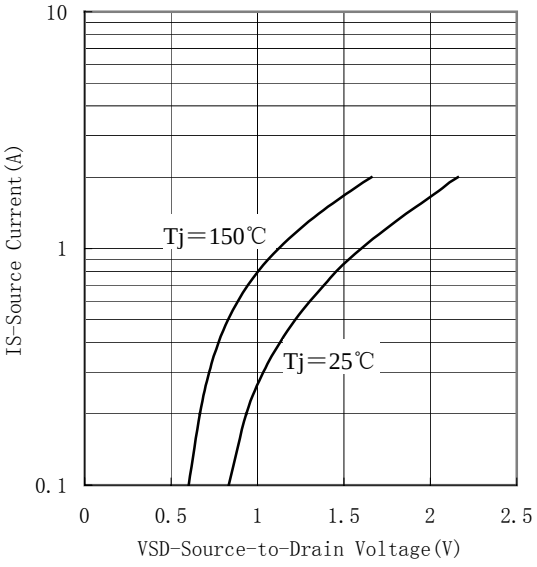


Figure 8. Source-Drain Diode Forward Voltage