AO3402

N-Channel Enhancement Mode MOSFET

Feature

30V/4.2A $R_{DS(ON)}$ = 50mΩ(MAX) @V_{GS} = 10V.

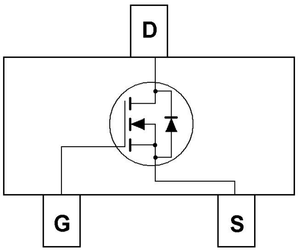
$R_{DS(ON)}$ =60mΩ(MAX) @V_{GS} = 4.5V.

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

Reliable and Rugged.

SC-59 for Surface Mount Package.

SC-59



Applications

- Power Management

Portable Equipment and Battery Powered Systems.

Absolute Maximum Ratings

T_A=25℃Unless Otherwise noted

Parameter	Symbol	Limit	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±12	V
Drain Current-Continuous	I_D	4.2	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	30	-	-	V
Zero-Gate Voltage Drain Current	IDSS	VDS=30V, VGS=0V	-	-	1	µA
Gate Body Leakage Current, Forward	IGSSF	VGS=12V, VDS=0V	-	-	100	nA
Gate Body Leakage Current, Reverse	IGSSR	VGS=-12V, VDS=0V	-	-	-100	nA
On Characteristics						
Gate Threshold Voltage	VGS(th)	VGS= VDS, ID=250µA	0.6	-	2.5	V
Static Drain-source On-Resistance	RDS(ON)	VGS =10V, ID =4A	-	48	50	mΩ
		VGS =4.5V, ID =3A	-	55	60	mΩ
		VGS =2.5V, ID =2A	-	60	65	mΩ
Drain-Source Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	VSD	VGS =0V, IS=1.25A			1.2	V

Dynamic						
Q_g	Total Gate Charge	V_{DS}=15V,V_{GS}=10V,I_D=2A		8.5	12	nC
Q_{gs}	Gate-Source Charge			1.1		
Q_{gd}	Gate-Drain Charge			1.8		
t_{on}	Turn-on Time	V_{DD}=15V,I_D=2A,V_{GS}=10V,R_G=6Ω			40	ns
$t_{d(ON)}$	Turn-on Delay time			11		
t_r	Turn-on Rise Time			17		
$T_{d(off)}$	Turn-off Delay Time			37		
t_f	Turn-off Fall Time			20		
t_{off}	Turn-off Time				60	

Typical Characteristics

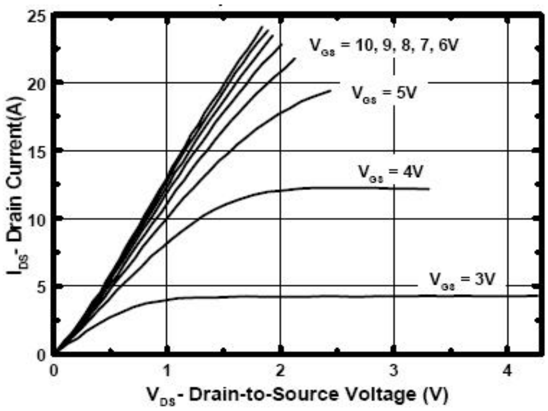


Figure 1．Output Characteristics

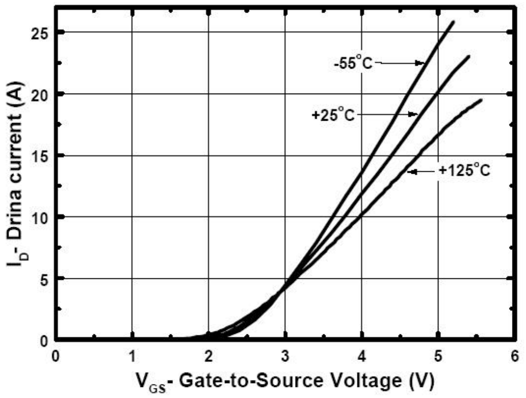


Figure 2．Transfer Characteristics

Typical Characteristics

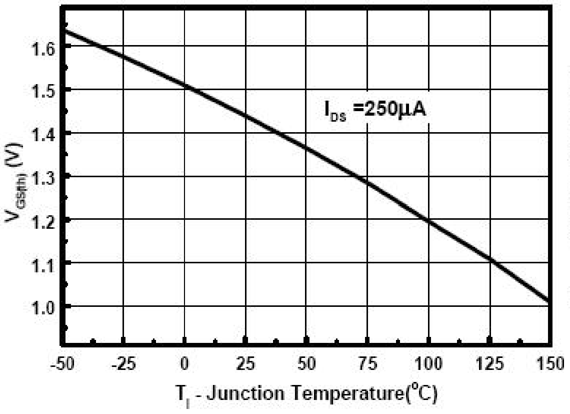


Figure 3．Gate Threshold Variation with Temperature

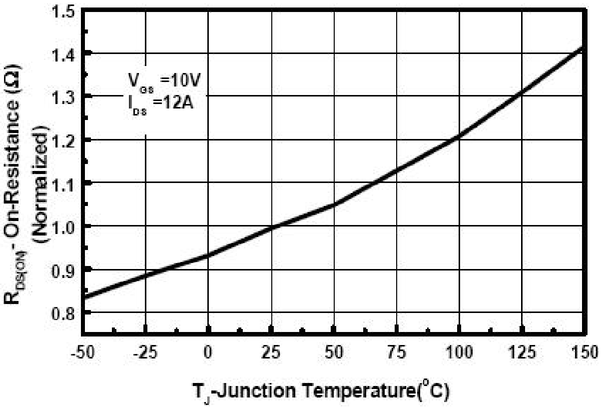


Figure 4．On-Resistance Variation with Temperature

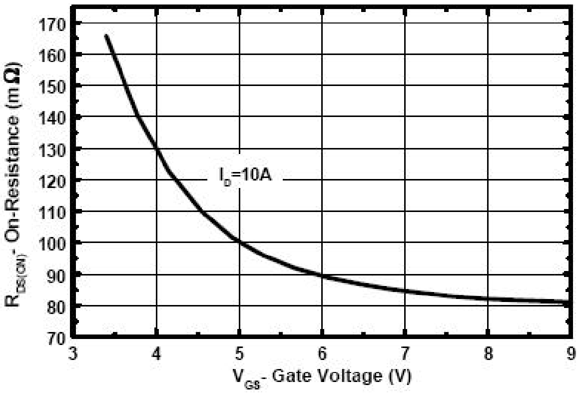


Figure 5．On-Resistance vs. Gate-to-Source Voltage

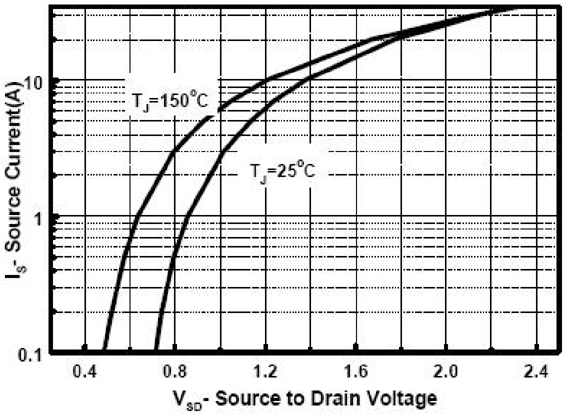


Figure 6．Source-Drain Diode Forward Voltage

Package Outline Dimensions (UNIT: mm)