

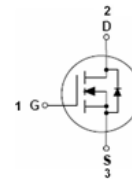
N-Channel Enhancement Mode MOSFET

Features

- Electrostatic sensitive devices
- $R_{DS(ON)} < 26.5m\Omega @ V_{GS} = 10V$
- $R_{DS(ON)} < 32m\Omega @ V_{GS} = 4.5V$
- $R_{DS(ON)} < 48m\Omega @ V_{GS} = 2.5V$

Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
AO3400	SOT-23	3000 pcs / Tape & Reel	A01T

Maximum Ratings (@ $T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	30	V
Gate-to-Source Voltage	V_{GSS}	± 12	V
Continuous Drain Current ($T_A = 25^\circ C$)	I_D	5.7	A
Continuous Drain Current ($T_A = 70^\circ C$)		4.7	A
Pulsed Drain Current	I_{DM}	25	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	1.4	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	89	$^\circ C/W$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ C$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ C$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 30V, V_{GS} = 0V$	-	-	1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS} = \pm 12V, V_{DS} = 0V$	-	-	± 100	nA
On Characteristics						
$R_{DS(ON)}$	Static Drain-Source On-resistance	$V_{GS} = 10V, I_D = 5.7A$	-	22	26.5	m Ω
		$V_{GS} = 4.5V, I_D = 5A$	-	25.4	32	
		$V_{GS} = 2.5V, I_D = 3A$	-	34	48	
$V_{GS(TH)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.7	1.0	1.4	V
g_{FS}	Forward Transconductance	$V_{DS} = 5V, I_D = 5.7A$	-	26	-	S
Dynamic Characteristics						
C_{ISS}	Input Capacitance	$V_{GS} = 0V$ $V_{DS} = 15V$ $f = 1.0MHz$	-	900	-	pF
C_{OSS}	Output Capacitance					
C_{RSS}	Reverse Transfer Capacitance					
Q_G	Total Gate-Charge	$V_{GS} = 4.5V$ $V_{DS} = 15V$ $I_D = 5.7A$	-	10	-	nC
Q_{GS}	Gate to Source Charge					
Q_{GD}	Gate to Drain (Miller) Charge					
$t_{d(ON)}$	Turn-on Delay Time	$V_{GS} = 10V$ $V_{DD} = 15V$ $R_L = 2.6\Omega$ $R_G = 3\Omega$	-	3.2	-	ns
t_r	Turn-on Rise Time					
$t_{d(OFF)}$	Turn-Off Delay Time					
t_f	Turn-Off Fall Time					
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage	$I_S = 1A, V_{GS} = 0V$	-	0.72	1.0	V
I_S	Maximum Body-Diode Continuous Current		-	-	2	A
t_{rr}	Body Diode Reverse Recovery Time	$I_F = 5.7A$ $di/dt = 100A / \mu s$	-	16.8	20	nS
Q_{rr}	Body Diode Reverse Recovery Charge	$I_F = 5.7A$ $di/dt = 100A / \mu s$	-	8	-	nC

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

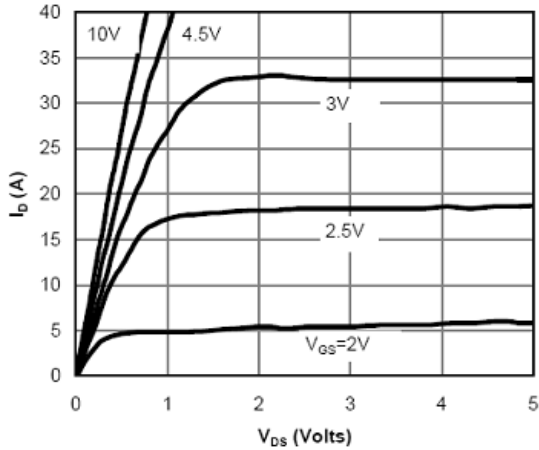


Fig 1 On-Region Characteristics

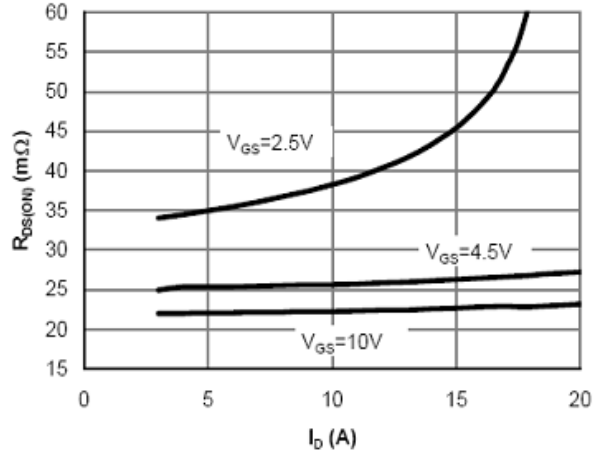


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

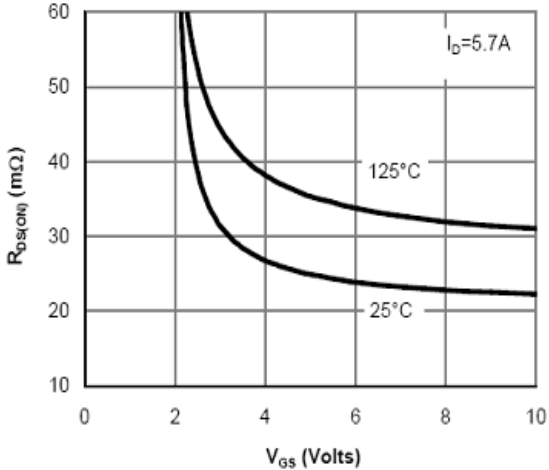


Fig 3 On-Resistance vs. Gate-Source Voltage

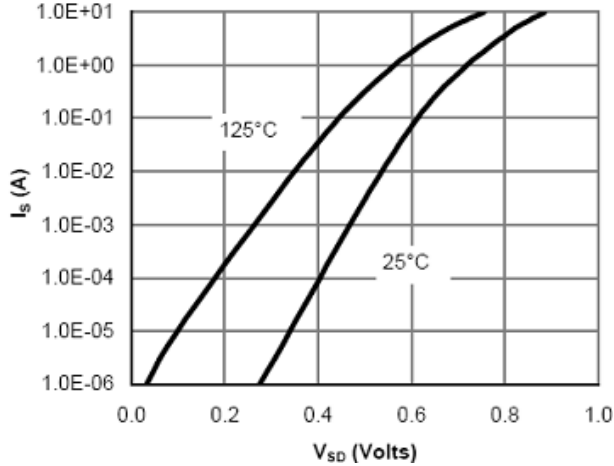


Fig 4 Body-Diode Characteristics

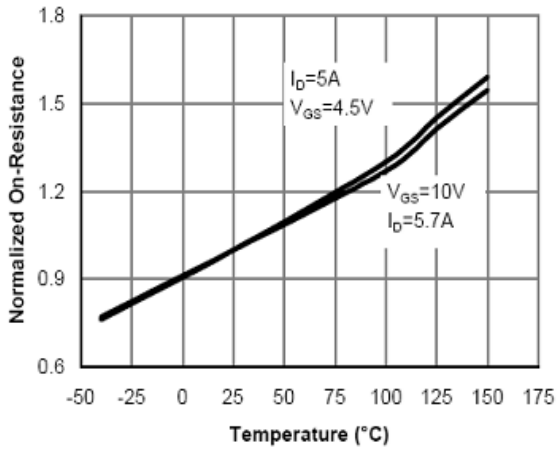


Fig 5 On-Resistance vs. Junction Temperature

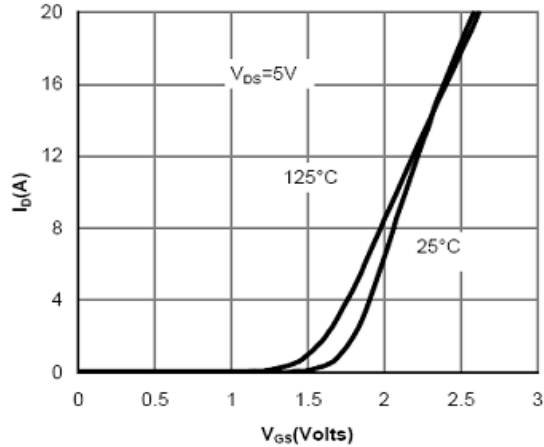


Fig 6 Transfer Characteristics

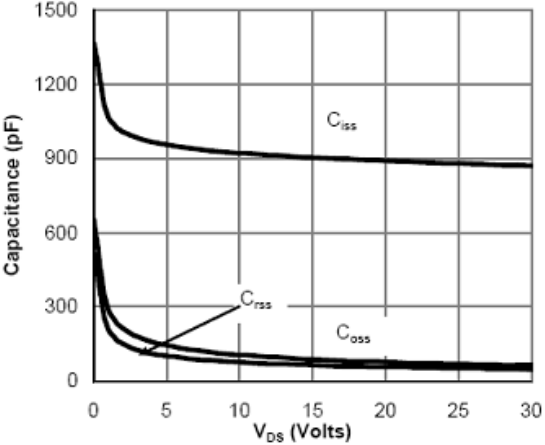


Fig 7 Capacitance Characteristics

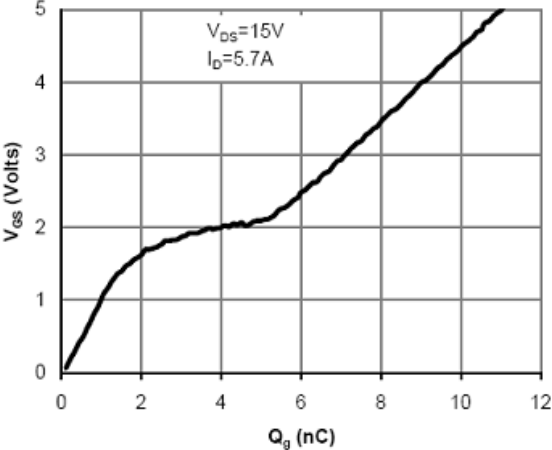
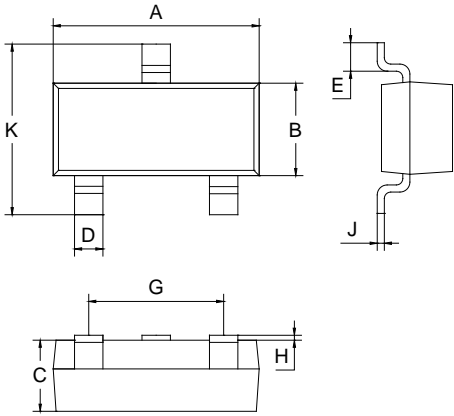


Fig 8 Gate-charge Characteristics

Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23

