

Features

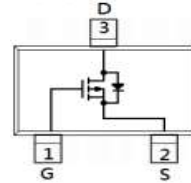
- $V_{DS}=20V, I_D=6A$
- $R_{DS(ON)}=20m\Omega$ (TYP.) $V_{GS}=4.5V$
- $R_{DS(ON)}=30m\Omega$ (TYP.) $V_{GS}=2.5V$

Applications

- Portable device
- Switch switching



SOT23-3



Ordering Information

Device	package	Device Marking	Package Qty.
AO3416	SOT23-3	AG	3000/PCS

Absolute Maximum Ratings (T_C=25°C, unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage (V _{GS} =0V)	V _{DS}	20	V
Gate-Source Voltage (V _{GS} =0V, static)	V _{GS}	±10	V
Continuous Drain Current (T _C =25°C)	I _D	6	A
Continuous Drain Current (T _C =100°C)		3.3	A
Pulsed Drain Current	I _{DM}	20	A
Maximum Power Dissipation (T _C =25°C)	P _D	0.9	W
Operating, Storage Temperature Range	T _J , T _{STG}	-55~150	°C

Electrical Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	20	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V	-	-	1	μA
Gate -Source Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	0.4	0.7	1.0	V
Drain-Source On-stage Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =5.8A	-	17	22	mΩ
		V _{GS} =4.5V, I _D =5A	-	25	33	
Body Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _{SD} =1A	-	-	1.2	V
Reverse Recovery Time	t _{rr}	V _{GS} =0V, I _{SD} =5A	-	-	-	ns
Reverse Recovery Charge	Q _{rr}	dI/dt=100A/μs	-	-	-	nC

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction-to-Case	R _{θJC}	-	-	-	°C/ W
Thermal Resistance, Junction-to-Ambient	R _{θJA}	-	139	-	°C/ W

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input capacitance	C_{iss}	$V_{DS}=15V$ $V_{GS}=0V$ $f=1MHz$	-	545	-	pF
Output capacitance	C_{oss}		-	103	-	
Reverse transfer capacitance	C_{rss}		-	90	-	
Gate Resistance	R_g	$f=1MHz$	-	-	-	Ω
Total Gate Charge	Q_g	$V_{DS}=15V$ $V_{GS}=4.5V$ $I_D=5.8A$	-	8	-	nC
Gate Source Charge	Q_{gs}		-	2.5	-	
Gate Drain Charge	Q_{gd}		-	3	-	
Turn-on delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_L=2.7\Omega$ $R_G=3\Omega$	-	0.5	-	ns
Rise time	t_r		-	1	-	
Turn-off delay Time	$t_{d(off)}$		-	12	-	
Fall time	t_f		-	4	-	

Electrical Characteristics Diagrames

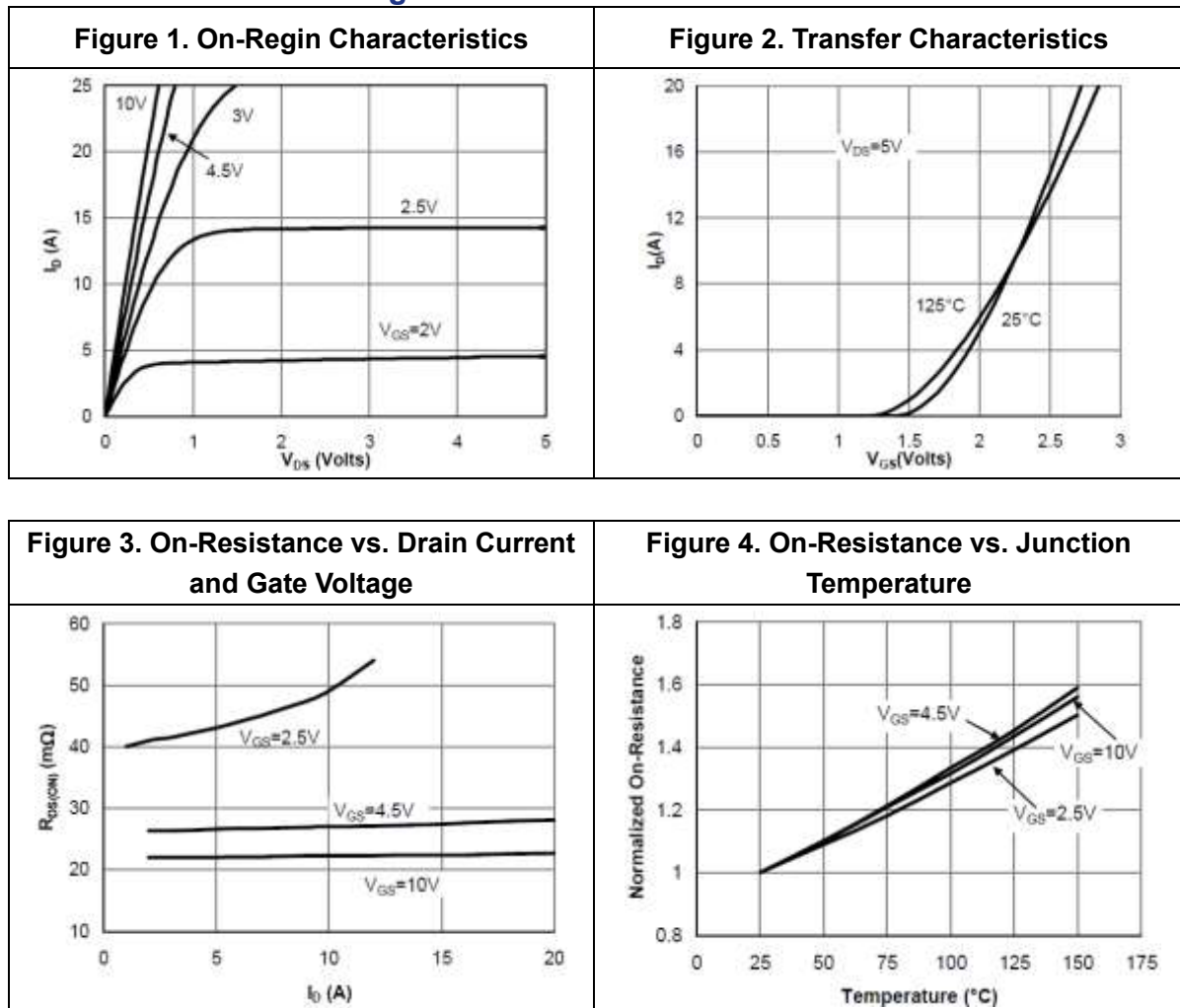


Figure 5. On-Resistance vs. Gate-Source Voltage

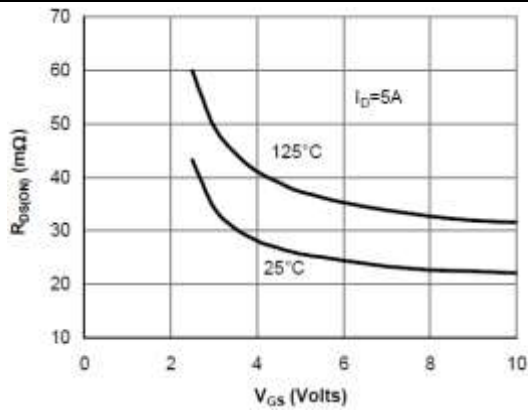
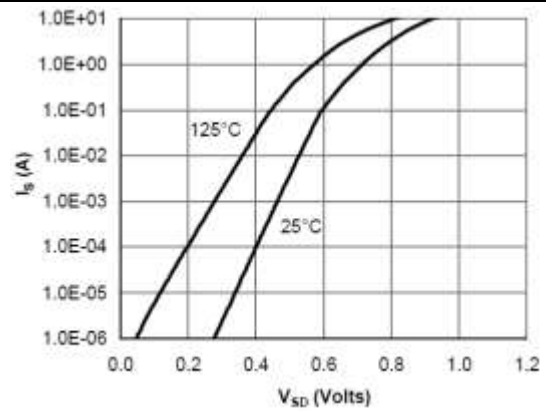
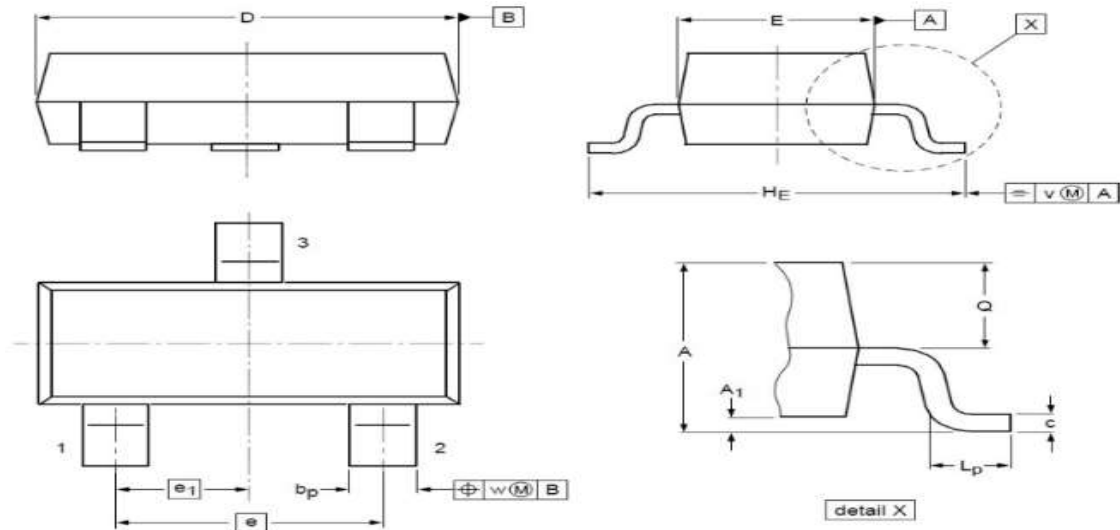


Figure 6. Body-Diode Characteristics



Physical Dimensions

SOT23-3



符号	尺寸(mm)			符号	尺寸(mm)		
	最小值	典型值	最大值		最小值	典型值	最大值
A	0.90	1.03	1.10	A1	0.01	0.05	0.10
bp	0.38	0.42	0.48	c	0.09	0.13	0.15
D	2.80	2.92	3.00	E	1.20	1.33	1.40
e	-	1.90	-	e1	-	0.95	-
HE	2.10	2.40	2.50	Lp	0.15	0.23	0.45
Q	0.45	0.49	0.55	v	-	0.20	-
w	-	0.10	-				