

Features

- V_{DS}=-20V, I_D=-4A
- R_{DS(ON)}=41mΩ (TYP.) V_{GS}=4.5V
- R_{DS(ON)}=53mΩ (TYP.) V_{GS}=2.5V

Applications

- Portable device
- Switch switching

Ordering Information

Device	package	Device Marking	Package Qty.
AO3415A	SOT-23-3L	R5/XF	3000/PCS
AO3415	SOT-23	R5/AF	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}	±8	V
Continuous Drain Current (T _C =25°C)	I _D	-4	A
Pulsed Drain Current	I _{DM}	30	A
Maximum Power Dissipation (T _C =25°C)	P _D	1.5	W
Operating, Storage Temperature Range	T _J , T _{STG}	-55~150	°C

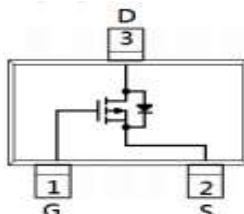
Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction-to-Case	R _{θJC}	-	52	-	°C/W
Thermal Resistance, Junction-to-Ambient	R _{θJA}	-	100	-	°C/W

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	0.3	0.57	0.9	V
Drain-Source On-stage Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =5.8A	-	34	41	mΩ
		V _{GS} =4.5V, I _D =5A	-	49	59	
Body Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _{SD} =1A	-	0.64	1.0	V

SOT23-3L



Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input capacitance	C_{iss}	$V_{DS}=15V$ $V_{GS}=0V$ $f=1MHz$	-	751	-	pF
Output capacitance	C_{oss}		-	115	-	
Reverse transfer capacitance	C_{rss}		-	80	-	
Gate Resistance	R_g	$f=1MHz$	-	13	-	Ω
Total Gate Charge	Q_g	$V_{DS}=15V$ $V_{GS}=4.5V$ $I_D=5.8A$	-	9.3	-	nC
Gate Source Charge	Q_{gs}		-	1	-	
Gate Drain Charge	Q_{gd}		-	2.2	-	
Turn-on delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_L=2.7\Omega$ $R_G=3\Omega$	-	13	-	ns
Rise time	t_r		-	9	-	
Turn-off delay Time	$t_{d(off)}$		-	19	-	
Fall time	t_f		-	29	-	
Reverse Recovery Time	t_{rr}	$V_{GS}=0V, I_{SD}=5A$ $dI/dt=100A/\mu s$	-	26	-	ns
Reverse Recovery Charge	Q_{rr}		-	51	-	nC

Electrical Characteristics Diagrames

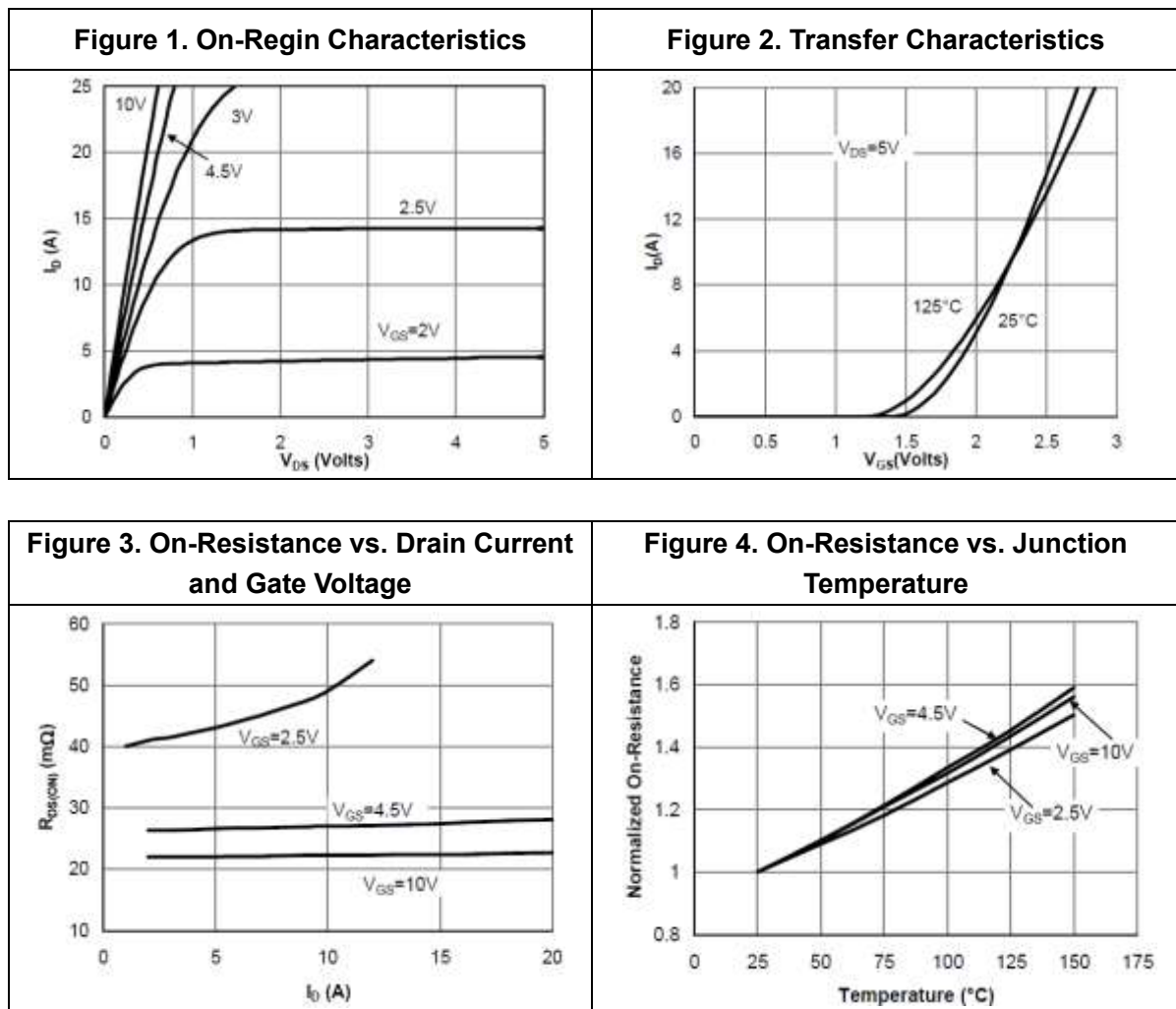


Figure 5. On-Resistance vs. Gate-Source Voltage

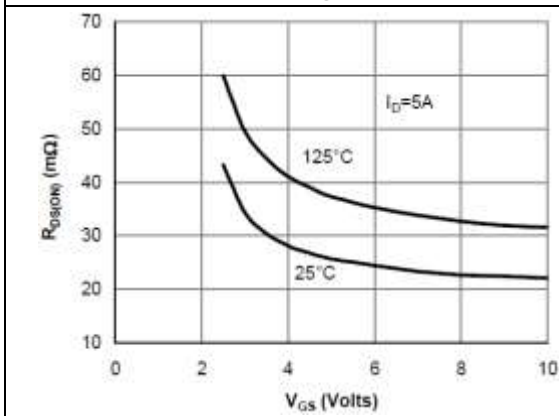
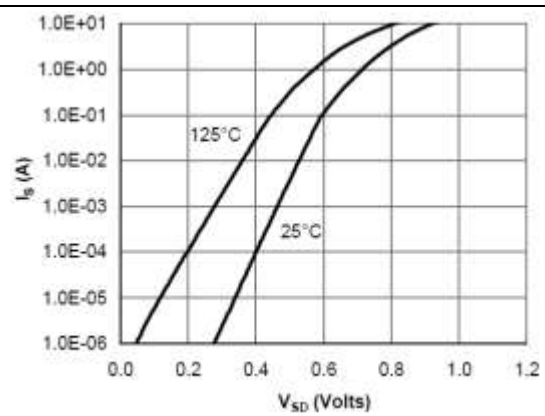
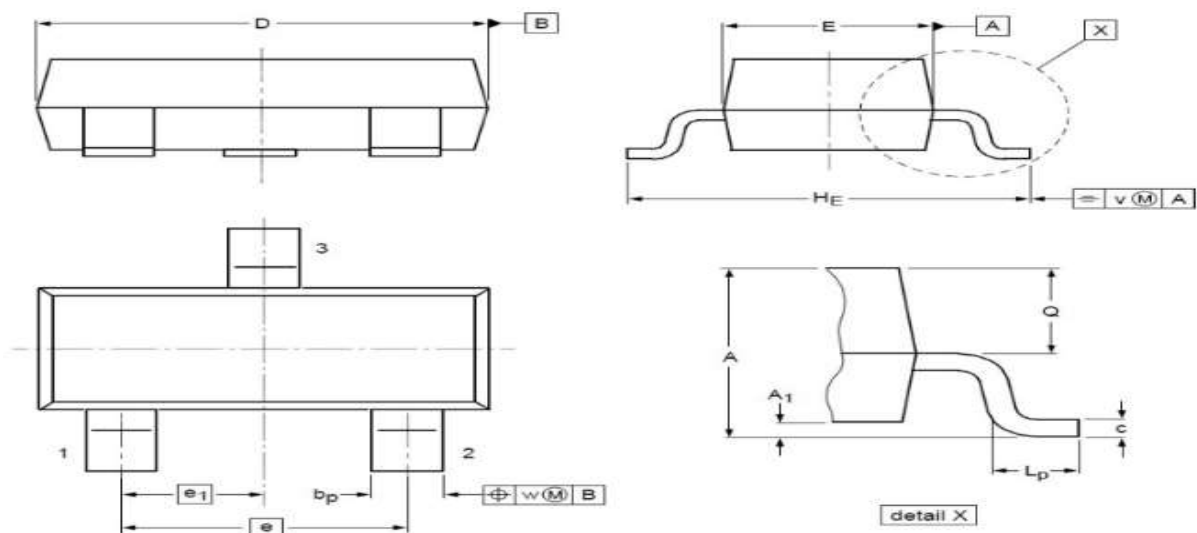


Figure 6. Body-Diode Characteristics



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	-				