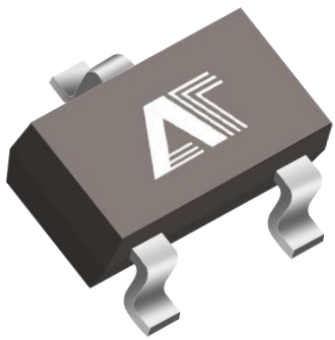




Field Effect Transistor

AO3400

Product Data Sheet

AOTE DCC
RELEASE

◆ Summary :

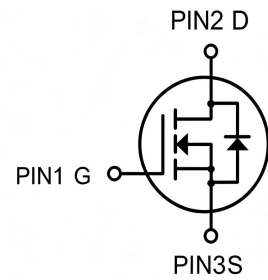
The AO3400 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a Battery protection or in other Switching application.

◆ Product features

- $V_{DS}=30V$ $I_D=5.8A$
- $R_{DS(ON)} < 30m\Omega @ V_{GS}=10V$

◆ Applications

- Battery protection
- Load switch
- Uninterruptible power supply



N-Channel MOSFET

◆ Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
AO3400	SOT-23	A09T	3000

◆ Absolute Maximum Ratings($T_A=25^{\circ}C$ unless otherwise noted)

Symbol	Parameter	Limit	Unit
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Drain Current-Continuous	5.8	A
I_{DM}	Drain Current-Pulsed(Note 1)	30	A
P_D	Maximum Power Dissipation	1.4	W
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	$^{\circ}C$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient(Note 2)	89	$^{\circ}C/W$

◆ SElectrical Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV _{oss}	V _{es} =0V I _b =250μA	30	33	-	V
Zero Gate Voltage Drain Current	I _{oss}	V _{os} =30V, V _{ss} =0V	-		1	μA
Gate-Body Leakage Current	I _{css}	V _{Gs} =±12V, V _{os} =0V		-	±100	nA
Gate Threshold Voltage	V _{Gs(th)}	V _{os} =V _{ss} , I _p =250μA	0.7	0.9	1.4	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{ss} =2.5V, I=4A		41	55	mΩ
		V _{gs} =4.5V, I _b =5A		32	42	mΩ
		V _{gs} =10V, I _p =5.8A		28	30	mΩ
Forward Transconductance	g _{FS}	V _{os} =5V, I _b =5A	10	-		S
Input Capacitance	C _{iss}	V _{os} =15V, V _{Gs} =0V, F=1.0MHz		825		PF
Output Capacitance	C _{oss}		-	100	-	PF
Reverse Transfer Capacitance	C _{rss}		-	78	-	PF
Turn-on Delay Time	t _{d(on)}	V _{DD} =15V, R _L =2.7Ω V _{ss} =10V, R _{GEN} =3Ω		3.3	-	nS
Turn-on Rise Time	t _r			4.8	-	nS
Turn-Off Delay Time	t _{d(of)}		-	26	-	nS
Turn-Off Fall Time	t _r		-	4		nS
Total Gate Charge	Q _g	V _{os} =15V, I _p =5.8A, V _{gs} =4.5V		10	-	nC
Gate-Source Charge	Q _{gs}			1.6		nC
Gate-Drain Charge	Q _{gd}		-	3.1	-	nC
Diode Forward Voltage(Note 3)	V _{sD}	V _{ss} =0V, I _s =5.8A	-	-	1.2	V
Diode Forward Current (Note 2)	I _s			-	5.8	A

Notes:

- 1.Repetitive Rating:Pulse width limited by maximum junction temperature
- 2.Surface Mounted on FR4 Board,t≤10 sec.
- 3.Pulse Test:Pulse Width ≤300us,Duty Cycles2%
- 4.Guaranteed by design,not subject to production

◆ **Typical Electrical and Thermal Characteristics**

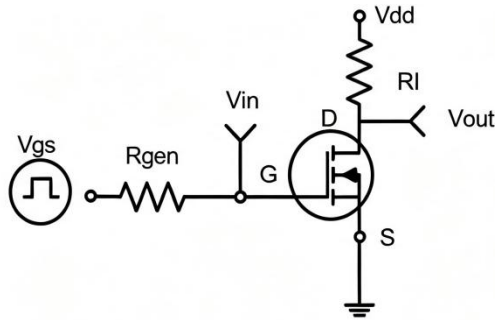


Figure 1: Switching Test Circuit

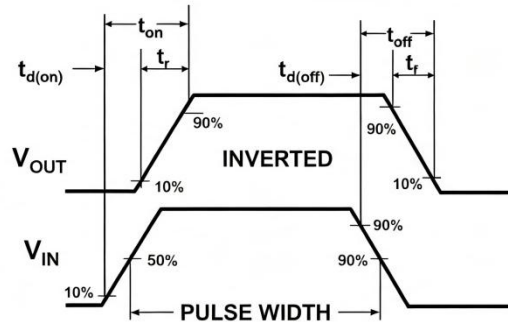


Figure 2: Switching Waveforms

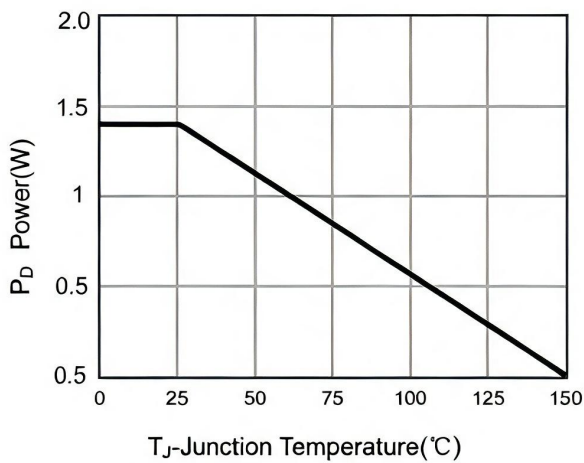


Figure 3 Power Dissipation

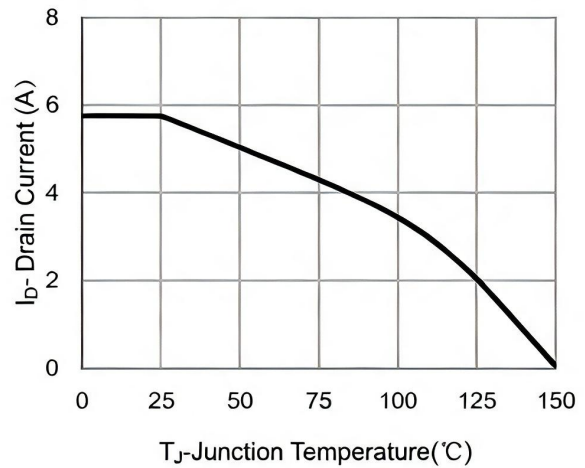


Figure 4 Drain Current

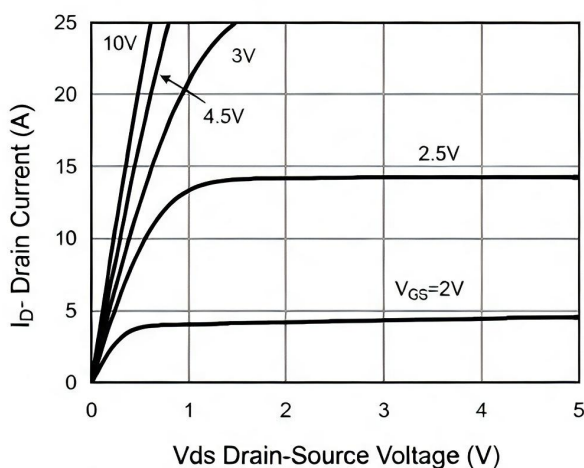


Figure 5 Output Characteristics

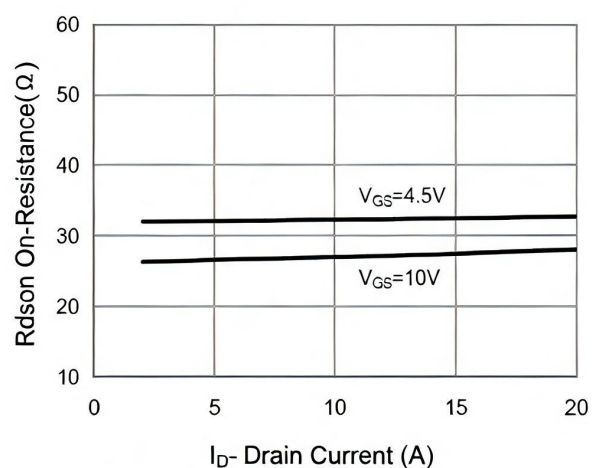


Figure 6 Drain-Source On-Resistance

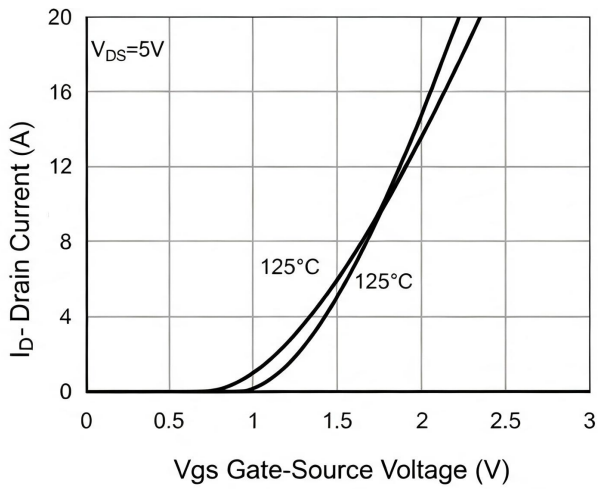


Figure 7 Transfer Characteristics

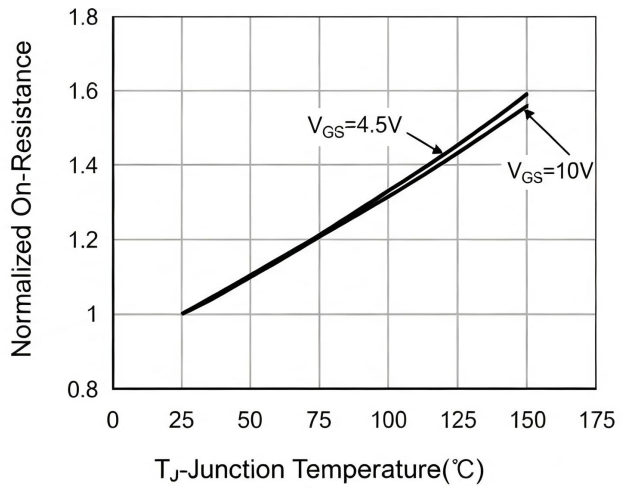


Figure 8 Drain-Source On-Resistance

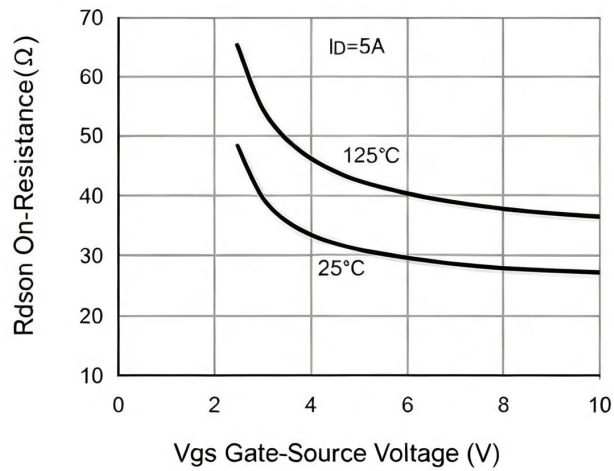


Figure 9 Rdson vs VGS

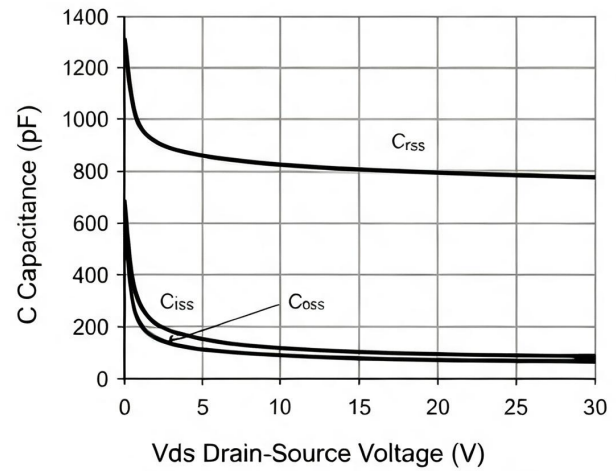


Figure 10 Capacitance vs Vds

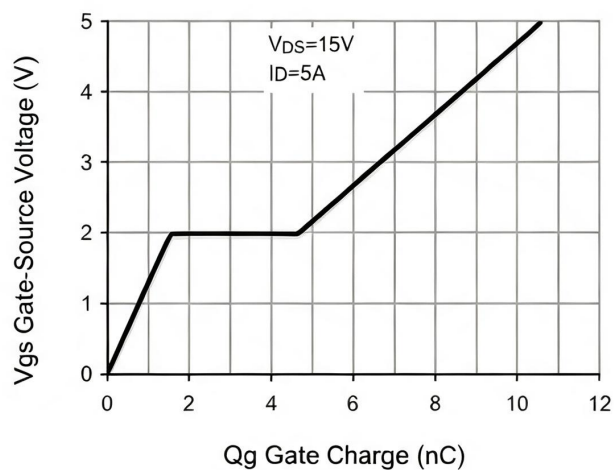


Figure 11 Gate Charge

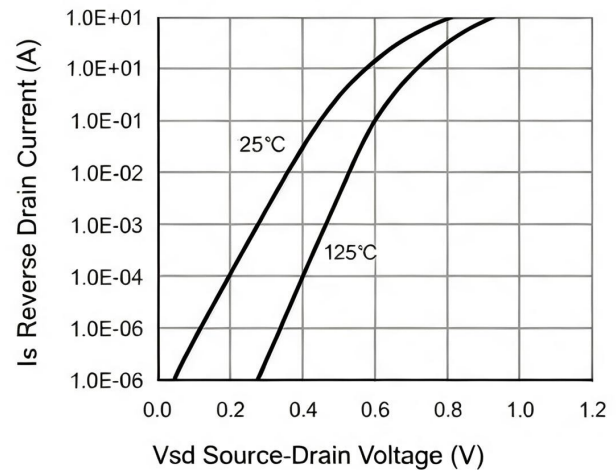
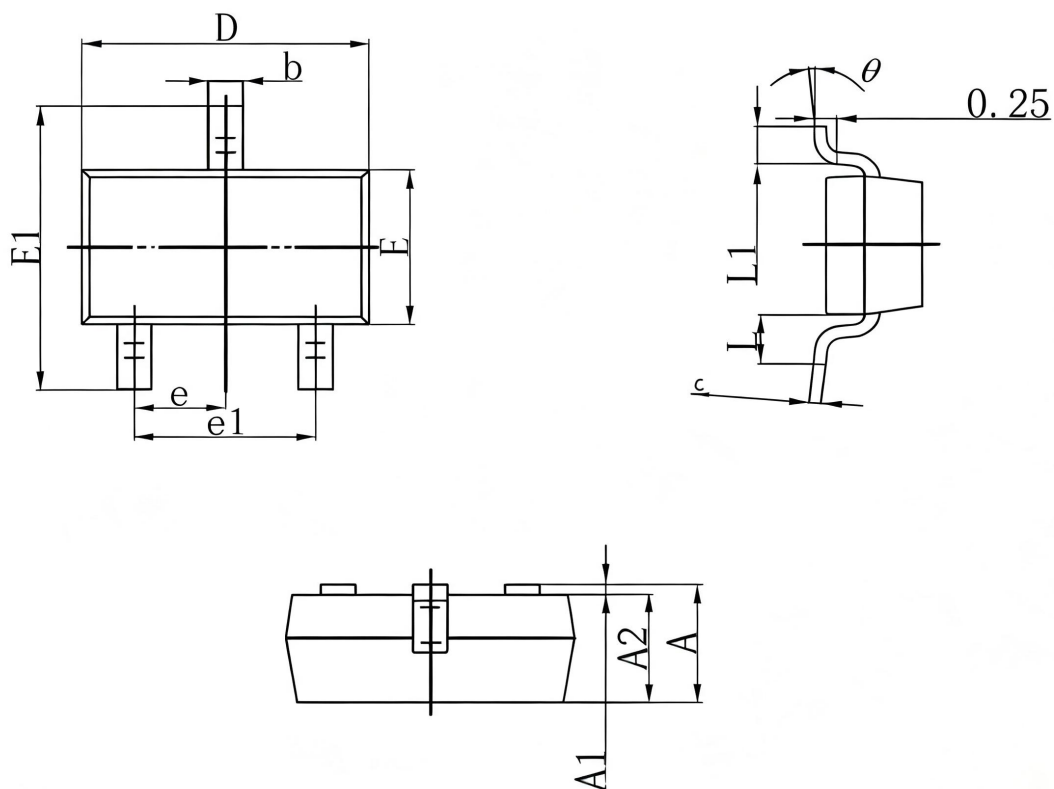


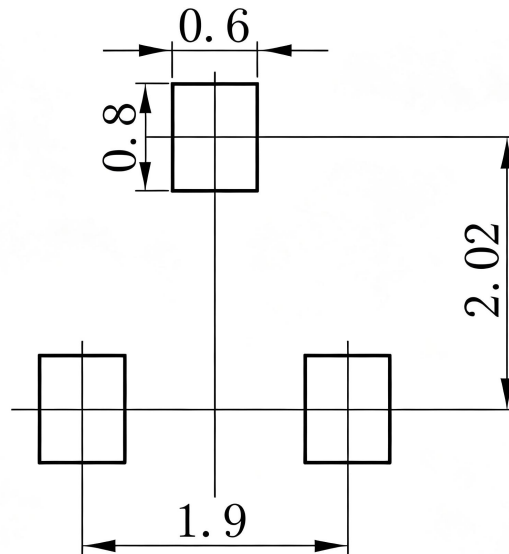
Figure 12 Source-Drain Diode Forward

◆ Packagesizeandinformation



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

◆ **SOT-23 Suggested Pad Layout**



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

◆ Attention

- AOTE implements dynamic technical updates. Specifications are subject to change. Refer to the official website for the latest version.
- Users must strictly adhere to specified conditions. Failures caused by misuse (overload, high temperature, incompatible circuits) are excluded from warranty.
- Contact technical support for customized validation in critical applications (medical devices, industrial control).
- This document is valid until December 31, 2026. Updates will be notified on the official website.
- For further clarification on technical specifications or application solutions, please contact us through official channels: