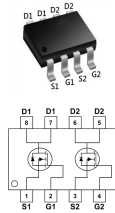


Description

The AO4828 is the high cell density trenched N-ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications.

The AO4828 meet the RoHS and Green Product

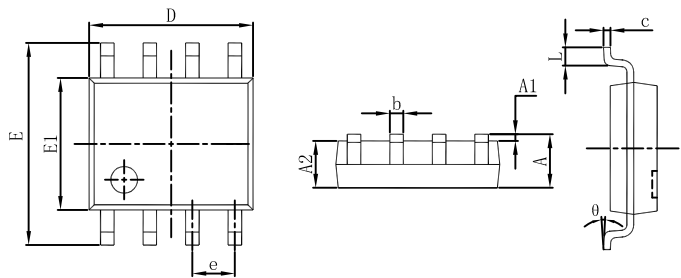
Green Device Available
Super Low Gate Charge
Excellent CdV/dt effect decline
Advanced high cell density Trench technology



Product Summary

BVDSS	RDSON	ID
60V	28mΩ	6.0A

SOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	60	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _A =25°C	Continuous Drain Current, V _{GS} @ 10V ¹	6.0	A
I _D @T _A =70°C	Continuous Drain Current, V _{GS} @ 10V ¹	4.5	A
I _{DM}	Pulsed Drain Current ²	22	A
EAS	Single Pulse Avalanche Energy ³	22	mJ
I _{AS}	Avalanche Current	23	A
P _D @T _A =25°C	Total Power Dissipation ⁴	1.5	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient ¹	---	85	°C/W
R _{θJC}	Thermal Resistance Junction-Case ¹	---	25	°C/W

AO4828

Electrical Characteristics (T_J=25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =60V, V _{GS} = 0V,	-	-	1.0	μA
I _{GSS}	Gate to Body Leakage Current	V _{DS} =0V, V _{GS} = ±20V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	1.0	1.6	2.5	V
R _{DS(on)}	Static Drain-Source on-Resistance note3	V _{GS} =10V, I _D =5A	-	28	40	mΩ
		V _{GS} =4.5V, I _D =3A	-	36	50	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1.0MHz	-	1148	-	pF
C _{oss}	Output Capacitance		-	58.5	-	pF
C _{rss}	Reverse Transfer Capacitance		-	49.4	-	pF
Q _g	Total Gate Charge	V _{DS} =30V, I _D =2.5A, V _{GS} =10V	-	20.3	-	nC
Q _{gs}	Gate-Source Charge		-	3.7	-	nC
Q _{gd}	Gate-Drain(“Miller”) Charge		-	5.3	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DS} =30V, I _D =5A, R _G =1.8Ω, V _{GS} =10V	-	7.6	-	ns
t _r	Turn-on Rise Time		-	20	-	ns
t _{d(off)}	Turn-off Delay Time		-	15	-	ns
t _f	Turn-off Fall Time		-	24	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	5	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	20	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} =0V, I _S =5A	-	-	1.2	V
t _{rr}	Body Diode Reverse Recovery Time	I _F =5A, dI/dt=100A/μs	-	29	-	ns
Q _{rr}	Body Diode Reverse Recovery Charge		-	43	-	nC

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. EAS condition : T_J=25°C, V_{DD}=30V, V_G=10V, L=0.5mH, R_G=25Ω, I_{AS}=8.7A

3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

RATING AND CHARACTERISTIC CURVES (AO4828)

Figure1: Output Characteristics

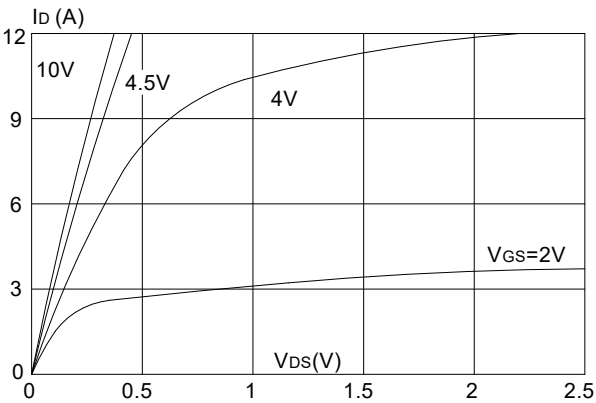


Figure 2: Typical Transfer Characteristics

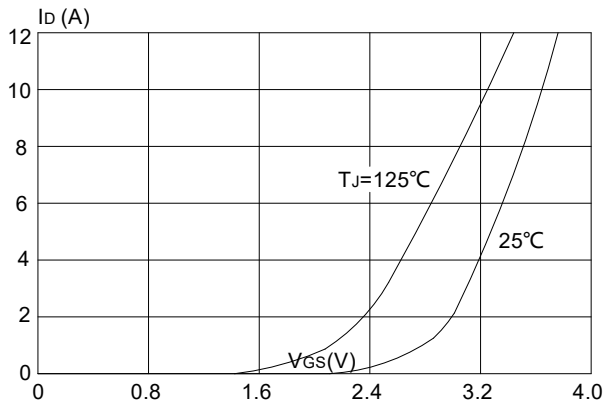


Figure 3: On-resistance vs. Drain Current

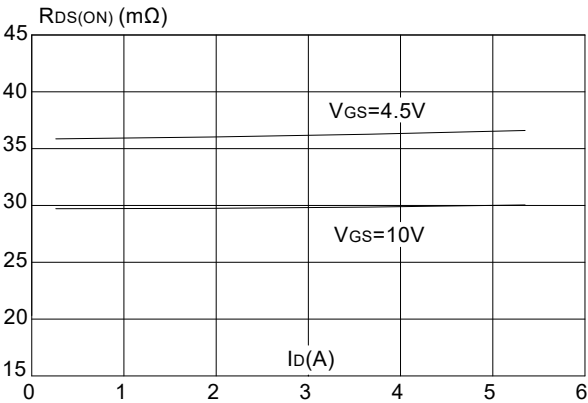


Figure 4: Body Diode Characteristics

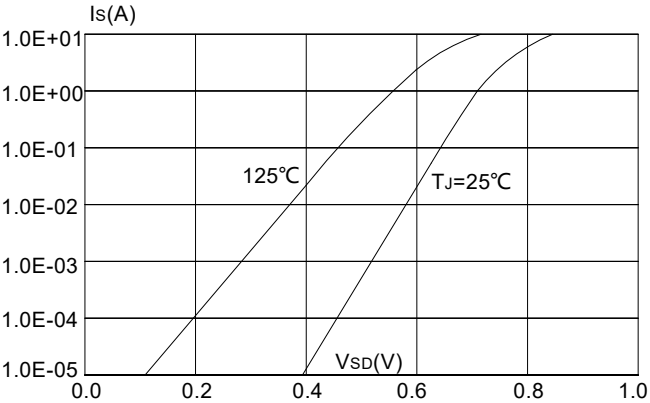


Figure 5: Gate Charge Characteristics

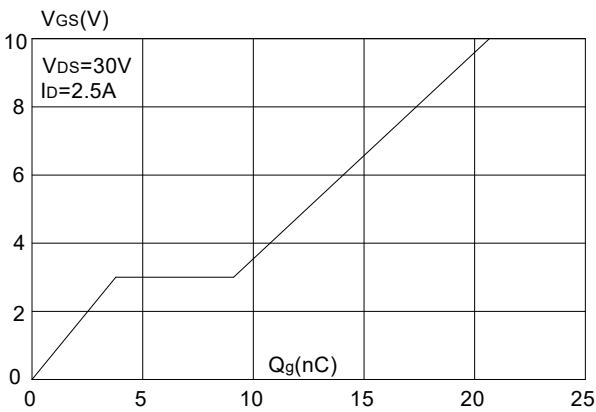
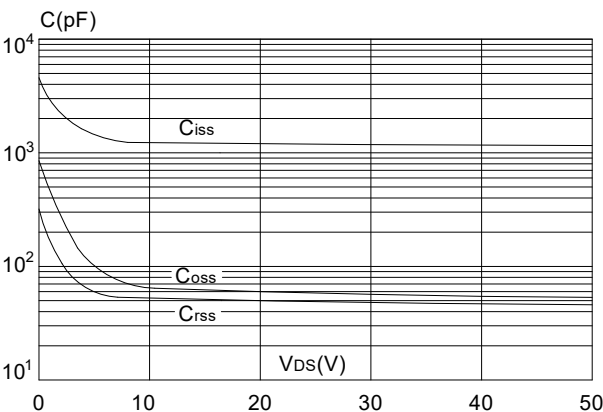


Figure 6: Capacitance Characteristics



RATING AND CHARACTERISTIC CURVES (AO4828)

Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

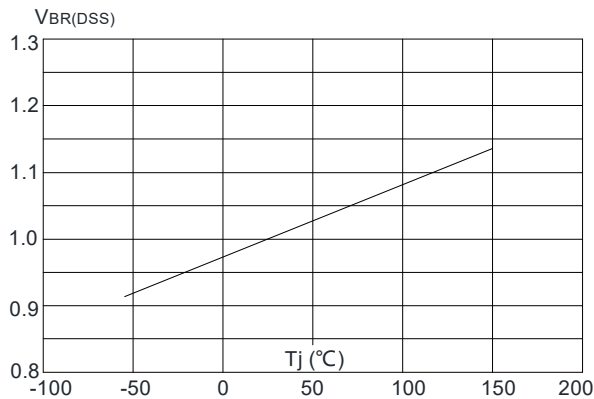


Figure 8: Normalized on Resistance vs. Junction Temperature

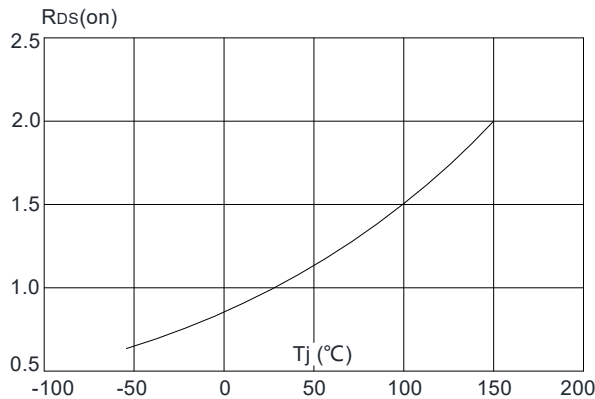


Figure 9: Maximum Safe Operating Area

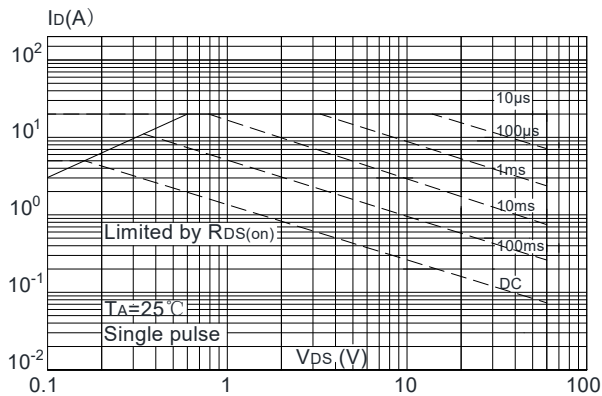


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

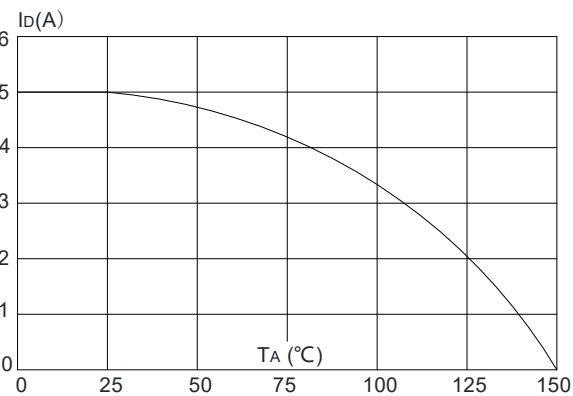


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

