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

Product Summary

BVDSS	RDSON	ID
60V	25mΩ	8.0A

Description

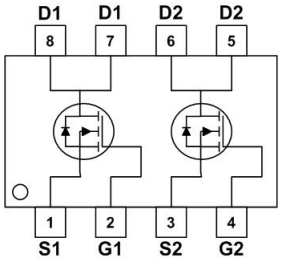
The ZX 8V06S is the high cell density trenched N-ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications.

The ZX 8V06S meet the RoHS and Green Product

SOP8 Pin Configuration



pin assignment



Schematic diagram

Package Marking and Ordering Information

Product	Package	Marking	Packing	Min Unit Quantity
ZX 8V06S	SOP8	*	3000PCS/Reel	3000PCS

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]	8.0	A
I_D@T_A=70°C	Continuous Drain Current, V_{GS} @ 10V[1]	5.5	A
I_{DM}	Pulsed Drain Current[2]	25	A
EAS	Single Pulse Avalanche Energy[3]	28	mJ
I_{AS}	Avalanche Current	10	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
$R_{\theta JA}$	Thermal Resistance Junction-ambient [1]	---	80	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-Case[1]	---	25	°C/W

Electrical Characteristics (T_J = 25°C, unless otherwise noted)

Parameter		Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics							
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	60	-	-	V
Gate-Body Leakage Current		I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V	-	-	±100	nA
Zero Gate Voltage Drain Current	T_J=25°C	I_{DSS}	V_{DS} = 60V, V_{GS} = 0V	-	-	1	μA
	T_J=100°C			-	-	100	
Gate-Threshold Voltage		$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1.2	1.7	2.5	V
Drain-Source on-Resistance[4]		$R_{DS(on)}$	V_{GS} = 10V, I_D = 10A	-	25	32	mΩ
			V_{GS} = 4.5V, I_D = 5A	-	31	40	
Forward Transconductance[4]		g_{fs}	V_{DS} = 5V, I_D = 10A	-	15.5	-	S
Dynamic Characteristics[5]							
Input Capacitance		C_{iss}	V_{DS} = 30V, V_{GS} =0V, f =1MHz	-	1355	-	pF
Output Capacitance		C_{oss}		-	60	-	
Reverse Transfer Capacitance		C_{rss}		-	49	-	
Gate Resistance		R_G	f =1MHz	-	1.2	-	Ω
Switching Characteristics[5]							
Total Gate Charge		Q_g	V_{GS} = 10V, V_{DD} = 30V, I_D= 10A	-	22	-	nC
Gate-Source Charge		Q_{gs}		-	4.2	-	
Gate-Drain Charge		Q_{gd}		-	6.9	-	
Turn-on Delay Time		$t_{d(on)}$	V_{GS} =10V, V_{DD} = 30V, R_G = 3Ω, I_D= 10A	-	6.4	-	ns
Rise Time		t_r		-	15.3	-	
Turn-off Delay Time		$t_{d(off)}$		-	25	-	
Fall Time		t_f		-	7.6	-	
Body Diode Reverse Recovery Time		t_{rr}	I_F=10A, dI_F/dt=100A/μs	-	26	-	ns
Body Diode Reverse Recovery Charge		Q_{rr}		-	45	-	nC
Drain-Source Body Diode Characteristics							
Diode Forward Voltage[4]		V_{SD}	I_S = 10A, V_{GS} = 0V	-	-	1.2	V
Continuous Source Current	T_C=25°C	I_S	-	-	-	8	A

Notes:

1. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C
2. The EAS data shows Max. rating . The test condition is V_{DD}=25V, V_{GS}=10V, L=0.4mH, I_{AS}=14A
3. The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
4. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.

Typical Performance Characteristics

Figure1: Output Characteristics

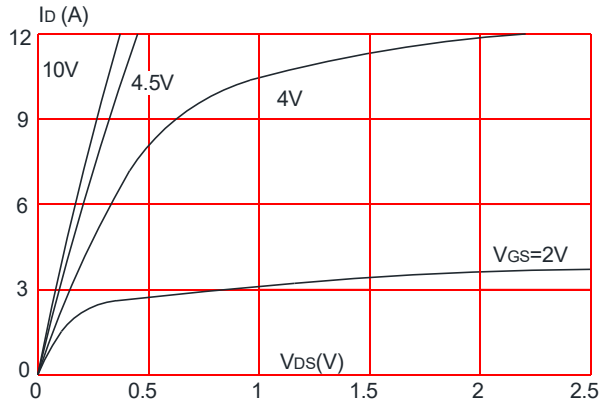


Figure 2: Typical Transfer Characteristics

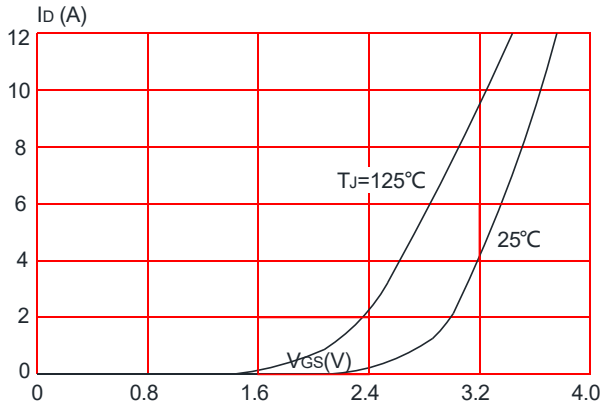


Figure 3: On-resistance vs. Drain Current

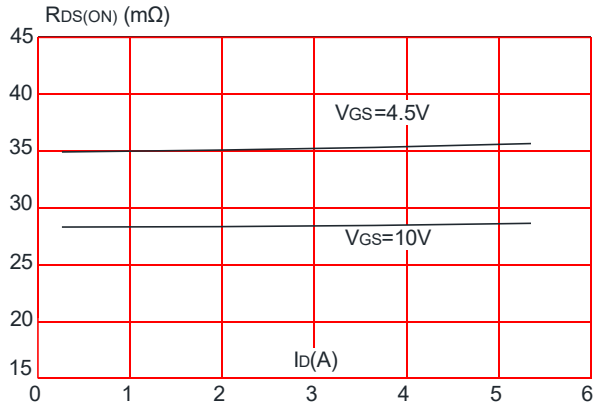


Figure 4: Body Diode Characteristics

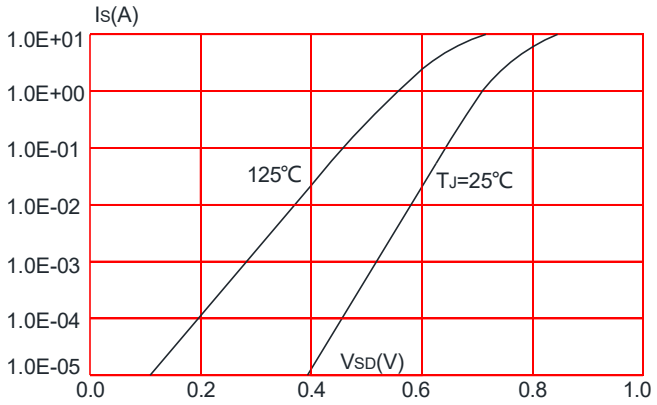


Figure 5: Gate Charge Characteristics

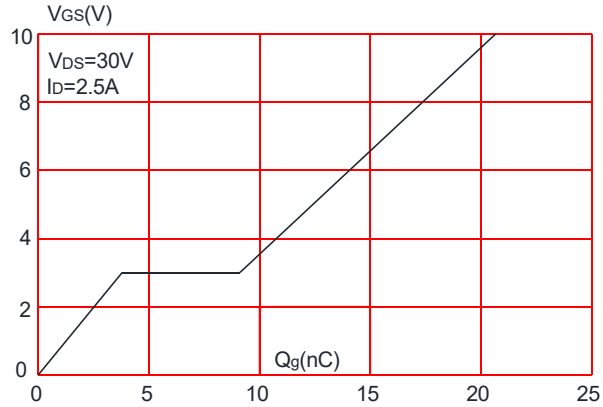


Figure 6: Capacitance Characteristics

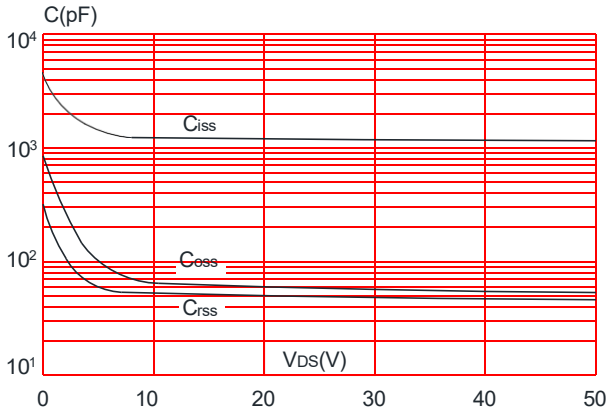


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

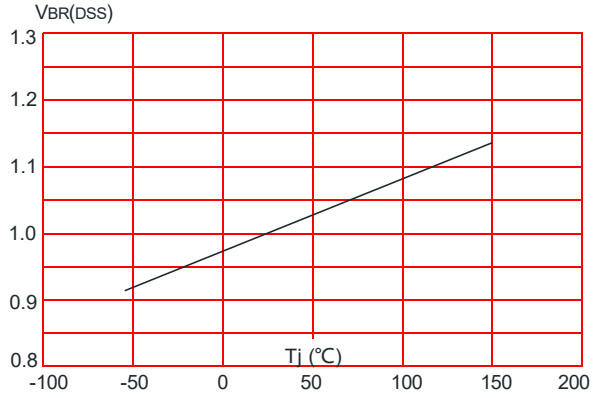


Figure 8: Normalized on Resistance vs. Junction Temperature

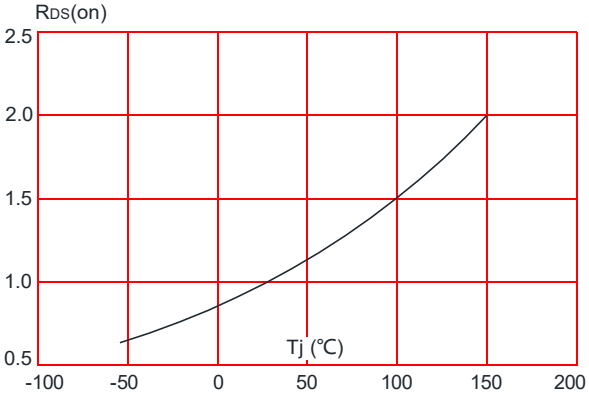


Figure 9: Maximum Safe Operating Area

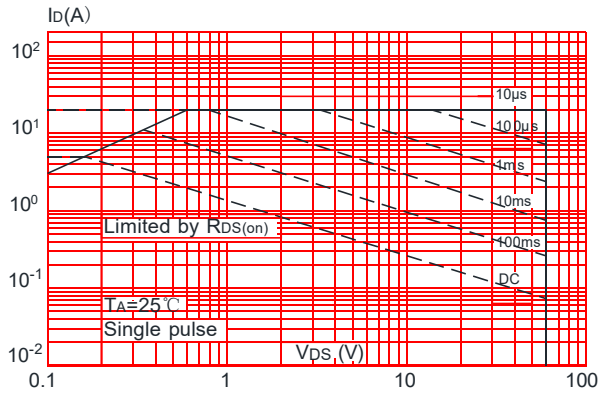


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

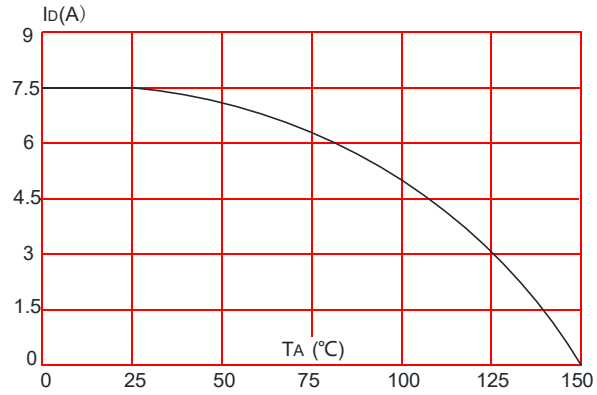
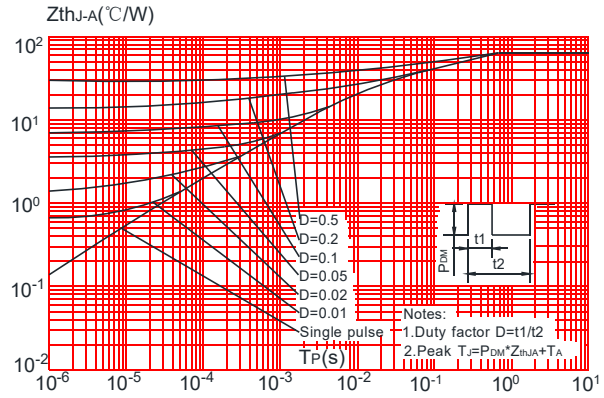
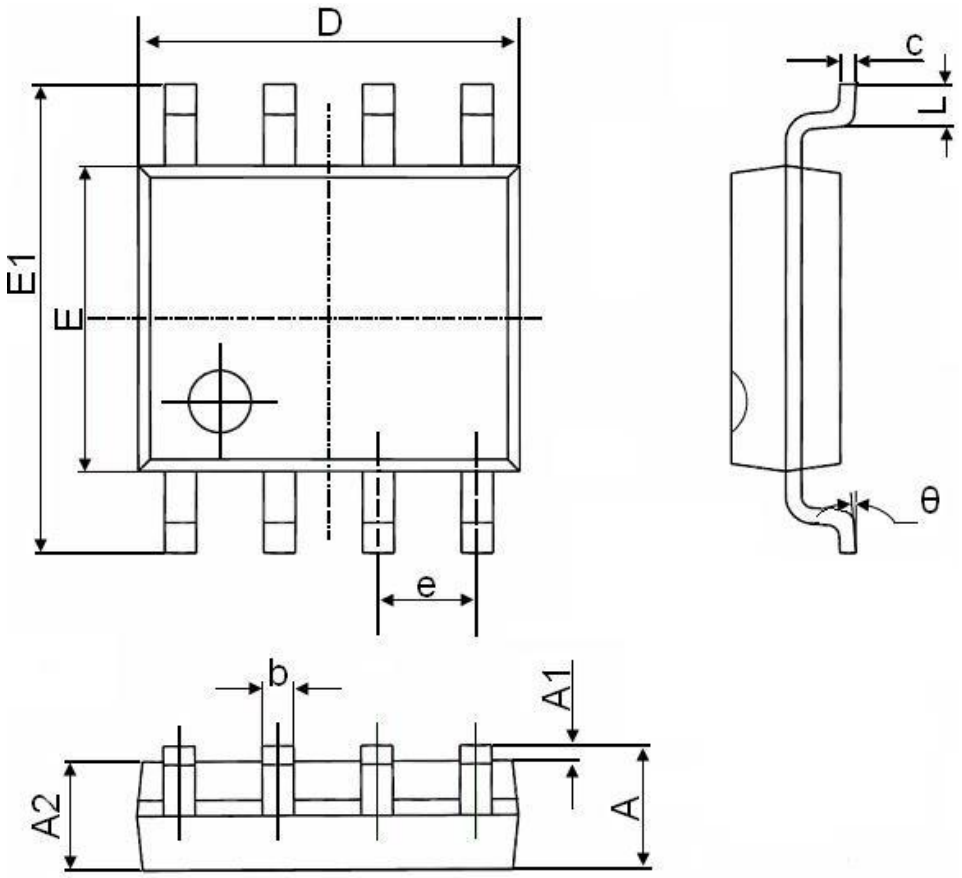


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



SOP-8 Package Information



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	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°