★ 100% EAS Guaranteed
★ Green Device Available
★ Super Low Gate Charge
★ Excellent CdV/dt effect decline
★ Advanced high cell density Trench technology

Description

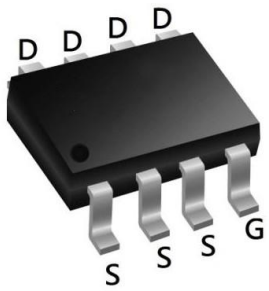
The ZX 2012A is the high cell density trenched N-ch MOSFETs , which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

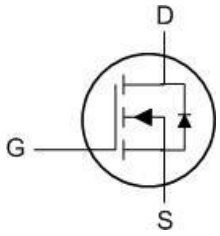
The ZX 2012A meet the RoHS and Green Product requirement , 100 % EAS guaranteed with full function reliability approved.

Product Summary

BVDSS	RDSON	ID
20V	12mΩ	10A

SOP8 Pin Configuration





Absolute Maximum Rating (T_J=25°C unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current	T_A= 25°C	I_D	10	A
Pulsed Drain Current[1]		I_{DM}	20	A
Power Dissipation	T_A= 25°C	P_D	2.25	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient[2]	$R_{\theta JA}$	90	°C/W

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0 V, I_D = 250μA	20	-	-	V
Gate Leakage Current	I_{GSS}	V_{GS} = ±12V, V_{DS} = 0 V	-	-	±100	nA
Drain Cut-off Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0 V	-	-	1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS} = V_{DS}, I_D = 250μA	0.45	0.7	1	V
Drain-Source On-State Resistance[3]	$R_{DS(on)}$	V_{GS} = 4.5V, I_D =5A	-	12	15	mΩ
		V_{GS} = 2.5V, I_D = 4.7A	-	17	21	
		V_{GS} = 1.8V, I_D = 4.3A	-	28	50	
Dynamic Characteristics[4]						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 10V, f = 1MHz	-	700	-	pF
Output Capacitance	C_{oss}		-	120	-	
Reverse Transfer Capacitance	C_{rss}		-	105	-	
Switching Characteristics[4]						
Total Gate Charge	Q_g	V_{GS}= 4.5V, V_{DS}= 10V, I_D= 5A	-	10.5	-	nC
Gate-Source Charge	Q_{gs}		-	2	-	
Gate-Drain Charge	Q_{gd}		-	2.5	-	
Turn-On Time	$t_{d(on)}$	V_{GEN}= 5V, V_{DD} = 10V, I_D = 5A,R_G= 3Ω,	-	10	-	ns
Rise Time	t_r		-	20	-	
Turn-Off Time	$t_{d(off)}$		-	32	-	
Fall Time	t_f		-	12	-	
Source-Drain Diode Characteristics						
Body Diode Voltage[3]	V_{SD}	I_S=4A, V_{GS} = 0V	-	-	1.2	V
Continuous Source Current	I_S		-	-	30	A

Notes:

1. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C.
2. 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.
3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.
4. This value is guaranteed by design hence it is not included in the production test.

Typical Characteristics

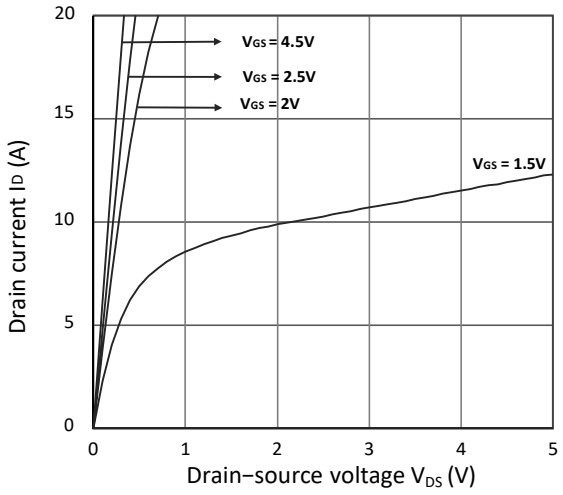


Figure 1. Output Characteristics

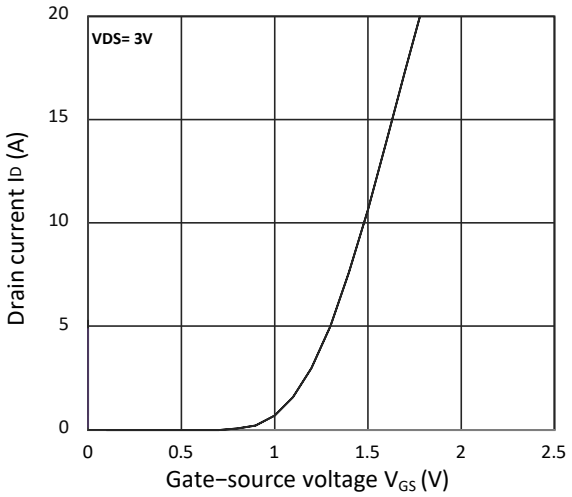


Figure 2. Transfer Characteristics

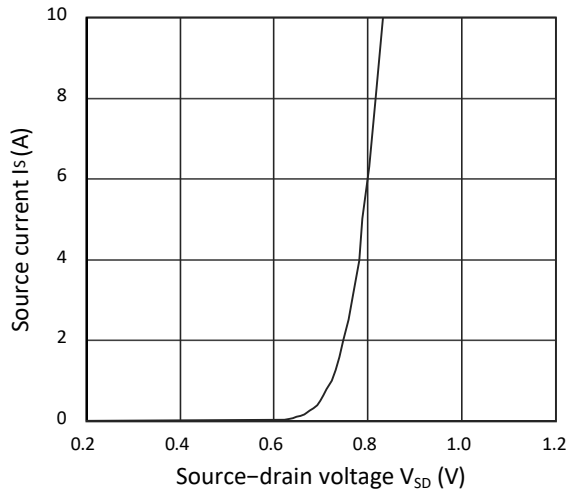


Figure 3. Forward Characteristics of Reverse

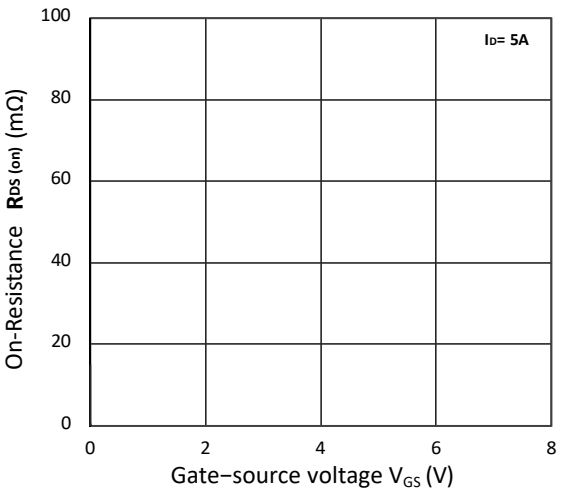


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

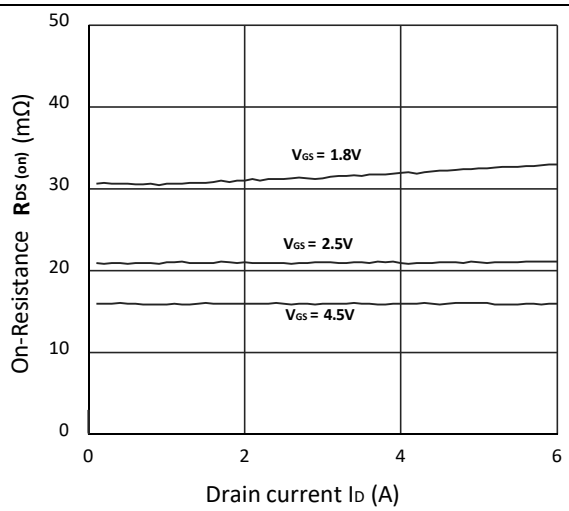


Figure 5. $R_{DS(ON)}$ vs. I_D

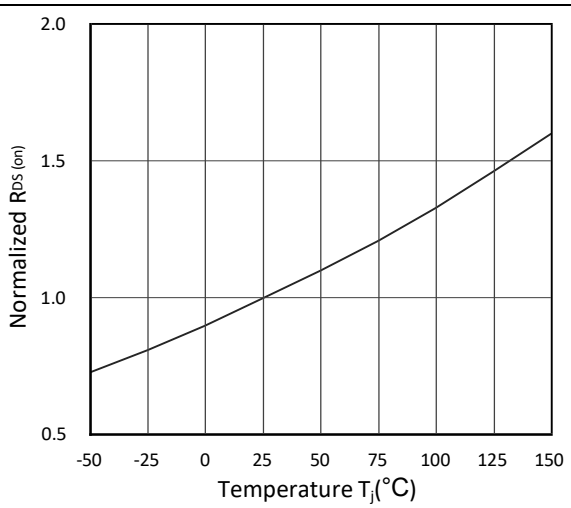


Figure 6. Normalized $R_{DS(on)}$ vs. Temperature

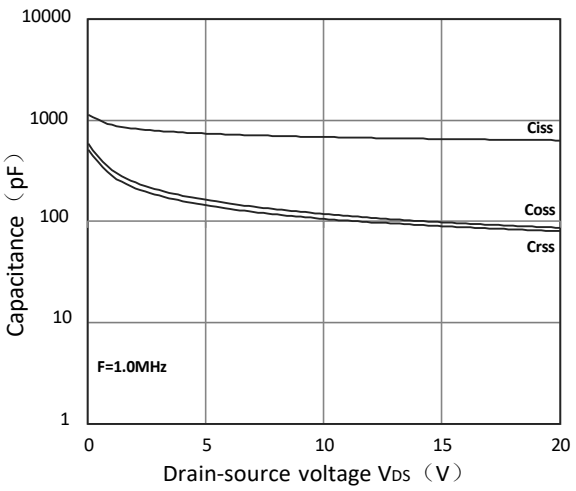


Figure 7. Capacitance Characteristics

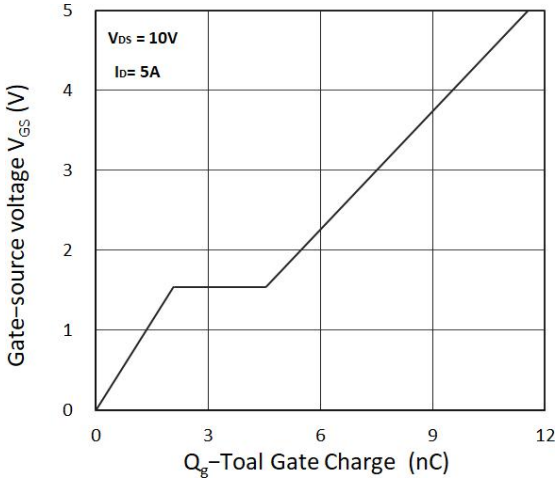
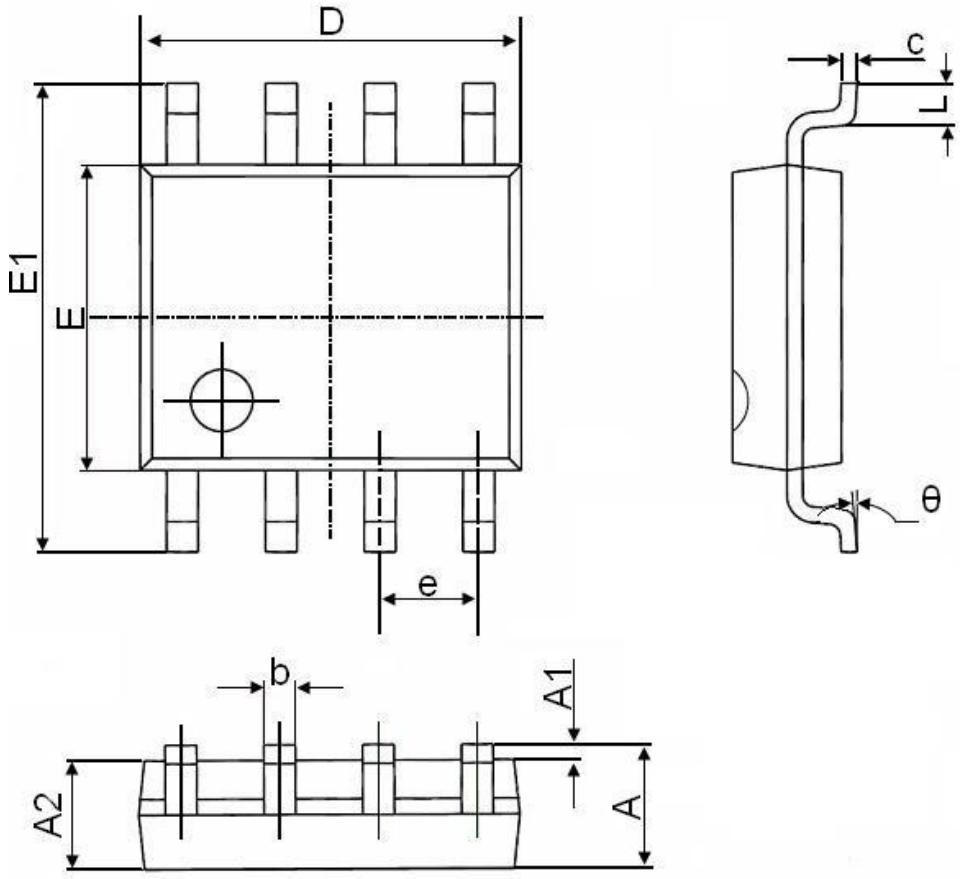


Figure 8. Gate Charge Characteristics

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°