



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

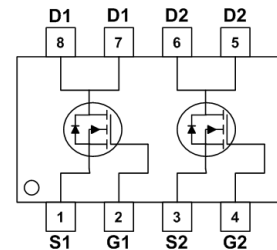
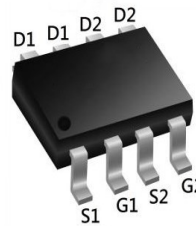
**Product Summary**

BVDSS	RDS(on)	ID
100V	88mΩ	8.0A

**Description**

The XXW4886 is the highest performance trench N-ch MOSFETs with extreme high cell density, which provide excellent RDS(on) and gate charge for most of the synchronous buck converter applications.

The XXW4886 meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.

**SOP8 Pin Configuration**

**Absolute Maximum Ratings**

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	100	V
$V_{GS}$	Gate-Source Voltage	±20	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current, $V_{GS} @ 10V^1$	8	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current, $V_{GS} @ 10V^1$	5	A
$I_{DM}$	Pulsed Drain Current <sup>2</sup>	15	A
EAS	Single Pulse Avalanche Energy <sup>3</sup>	6.1	mJ
$P_D@T_A=25^{\circ}C$	Total Power Dissipation <sup>3</sup>	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 <sup>1</sup>	---	125	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-Case <sup>1</sup>	---	3.6	°C/W

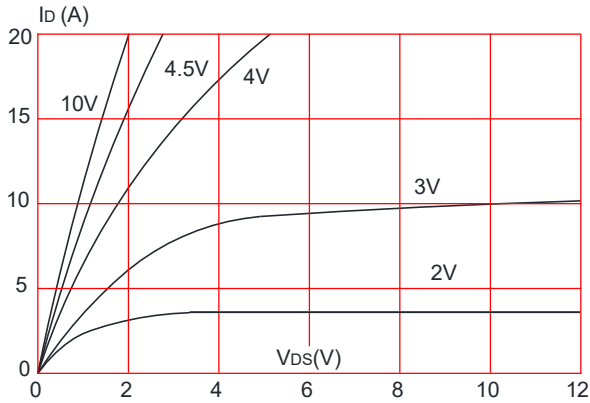
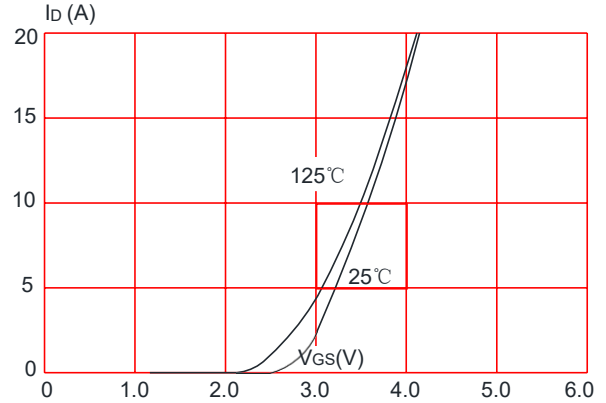
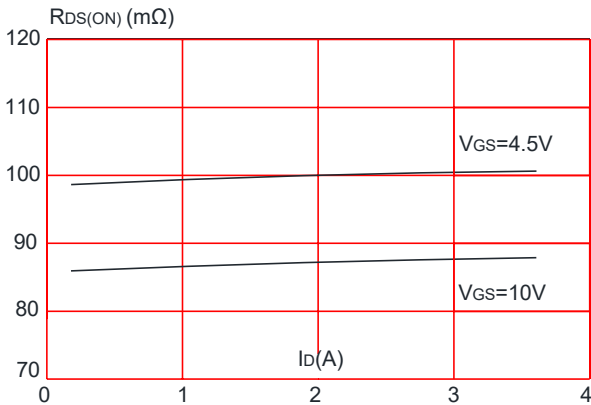
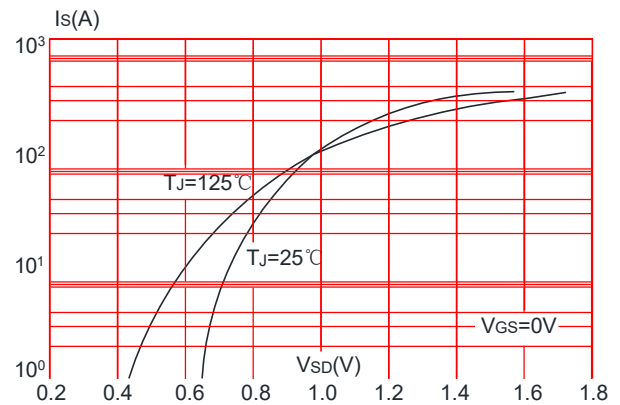
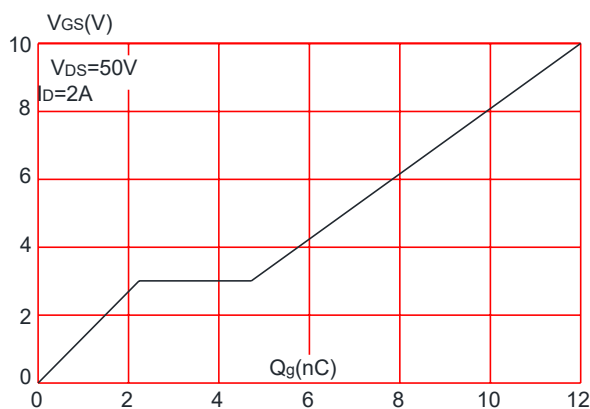
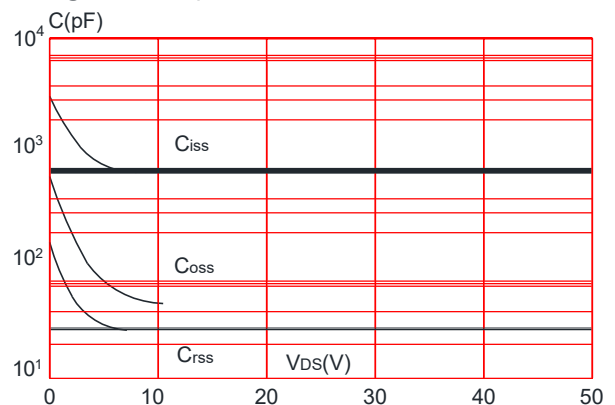
**Electrical Characteristics** ( $T_J=25^{\circ}\text{C}$  unless otherwise specified)

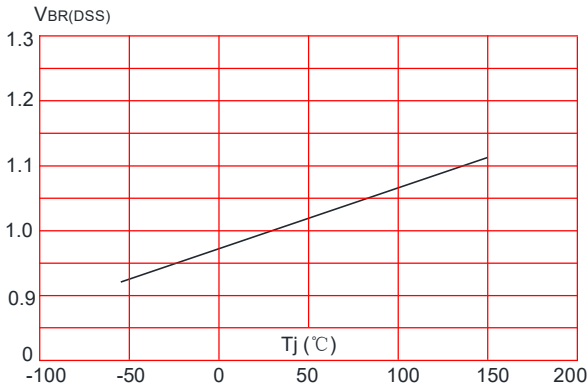
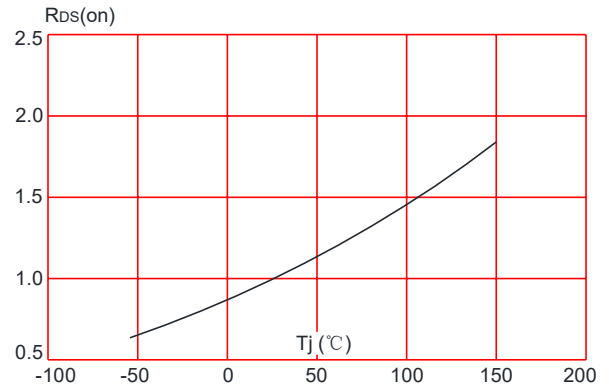
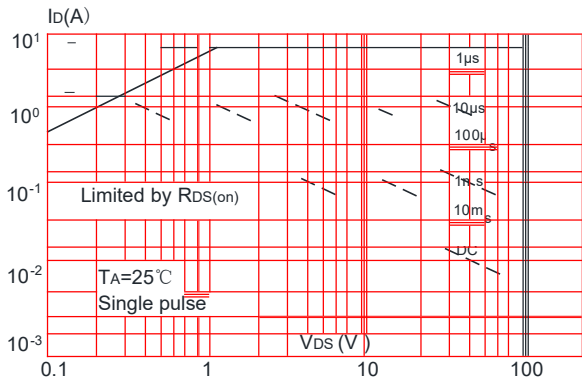
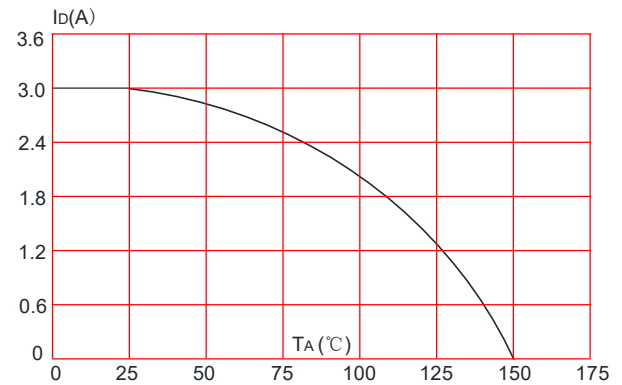
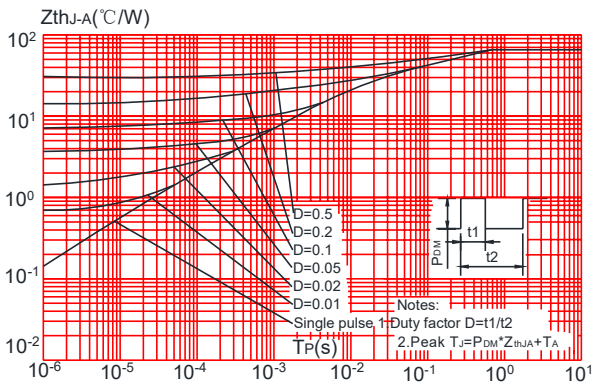
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristic</b>						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=100V, V_{GS}=0V,$	-	-	1.0	$\mu A$
$I_{GSS}$	Gate to Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	$\pm 100$	nA
<b>On Characteristics</b>						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.5	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance <small>note3</small>	$V_{GS}=10V, I_D=3A$	-	88	115	m $\Omega$
		$V_{GS}=4.5V, I_D=2A$	-	100	140	m $\Omega$
<b>Dynamic Characteristics</b>						
$C_{iss}$	Input Capacitance	$V_{DS}=25V, V_{GS}=0V,$ $f=1.0MHz$	-	610	-	pF
$C_{oss}$	Output Capacitance		-	40	-	pF
$C_{rss}$	Reverse Transfer Capacitance		-	25	-	pF
$Q_g$	Total Gate Charge	$V_{DS}=50V, I_D=2A,$ $V_{GS}=10V$	-	12	-	nC
$Q_{gs}$	Gate-Source Charge		-	2.2	-	nC
$Q_{gd}$	Gate-Drain("Miller") Charge		-	2.5	-	nC
<b>Switching Characteristics</b>						
$t_{d(on)}$	Turn-on Delay Time	$V_{DS}=50V, I_D=3A,$ $R_G=1.8\Omega, V_{GS}=10V$	-	7	-	ns
$t_r$	Turn-on Rise Time		-	5	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	16	-	ns
$t_f$	Turn-off Fall Time		-	6	-	ns
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
$I_S$	Maximum Continuous Drain to Source Diode Forward Current		-	-	3	A
$I_{SM}$	Maximum Pulsed Drain to Source Diode Forward Current		-	-	8	A
$V_{SD}$	Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=3A$	-	-	1.2	V
$t_{rr}$	Body Diode Reverse Recovery Time	$I_F=3A, di/dt=100A/\mu s$	-	21	-	ns
$Q_{rr}$	Body Diode Reverse Recovery Charge		-	21	-	nC

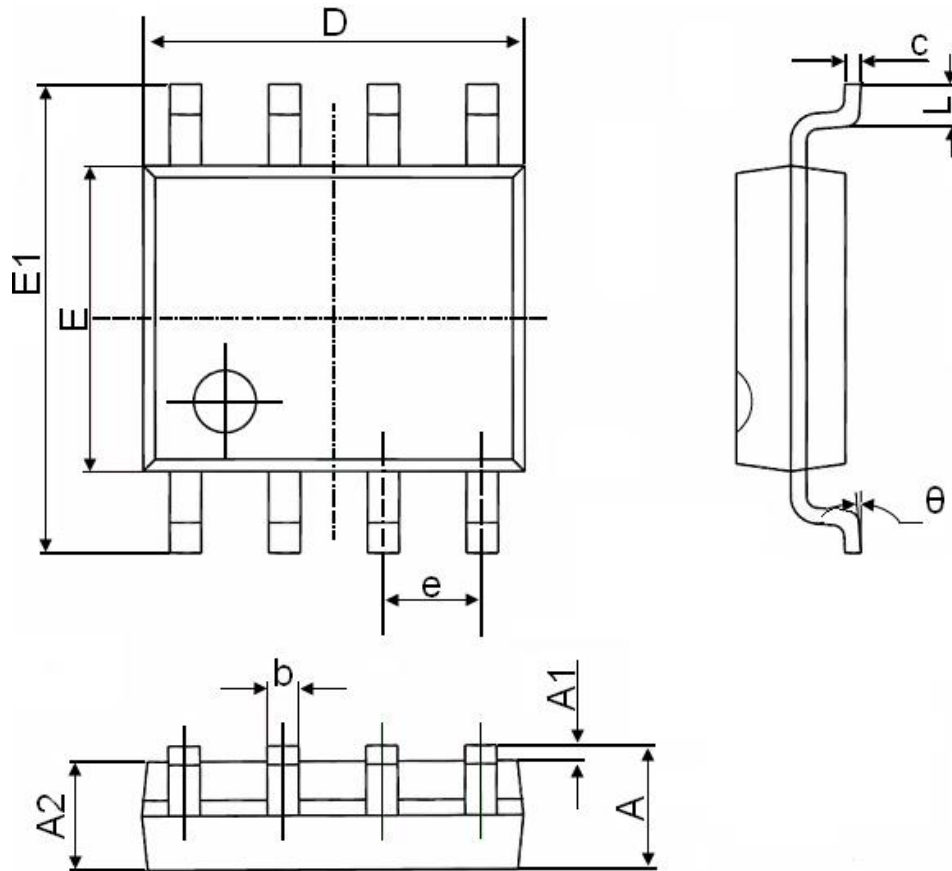
Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. EAS condition :  $T_J=25^{\circ}\text{C}, V_{DD}=50V, V_G=10V, L=0.5mH, R_G=25\Omega, I_{AS}=4A$

3. Pulse Test: Pulse Width $\leq 300\mu s$ , Duty Cycle $\leq 0.5\%$

**Typical Performance Characteristics**
**Figure 1: 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**


**Dual N-Ch 100V Fast Switching MOSFETs**
**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
$\theta$	0°	8°	0°	8°