

Features

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

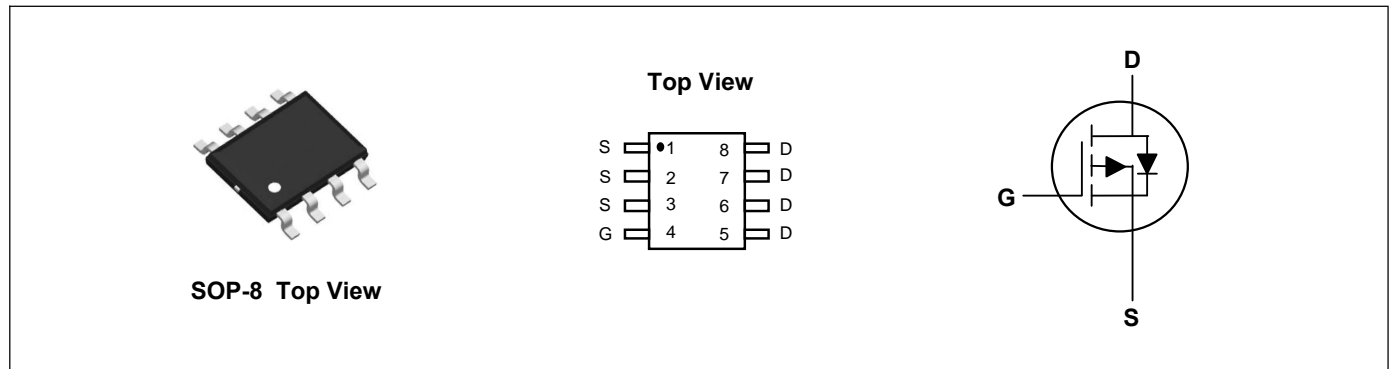
Applications

- High Frequency Point-of-Load, Synchronous Buck Converter
- Networking DC-DC Power System
- Load Switch

Product Summary



V_{DS}	-100	V
I_D	-8	A
$R_{DS(ON)}$ (at $V_{GS}=-10V$)	110	m Ω
$R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	125	m Ω



Absolute Maximum Ratings ($T_C=25^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹	$I_D@T_C=25^\circ\text{C}$	-8	A
Continuous Drain Current ¹	$I_D@T_C=100^\circ\text{C}$	-3.85	A
Pulsed Drain Current ²	I_{DM}	-18	A
Single Pulse Avalanche Energy ³	E_{AS}	56	mJ
Avalanche Current	I_{AS}	3.1	A
Total Power Dissipation	$P_D@T_C=25^\circ\text{C}$	3.2	W
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$
Operating Junction Temperature Range	T_J	-55 to 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance Junction-Ambient ¹	$R_{\theta JA}$	---	59	$^\circ\text{C/W}$
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	---	16	$^\circ\text{C/W}$

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-100	---	---	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-5A$	---	85	110	$m\Omega$
		$V_{GS}=-4.5V, I_D=-3A$	---	95	125	$m\Omega$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=-250\mu A$	-1.2	---	-2.5	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-100V, V_{GS}=0V$	---	---	-50	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
Forward Transconductance	g_{fs}	$V_{DS}=-10V, I_D=-8A$	---	24	---	S
Total Gate Charge	Q_g	$V_{DS}=-50V, V_{GS}=-10V, I_D=-5A$	---	20	---	nC
Gate-Source Charge	Q_{gs}		---	4	---	
Gate-Drain Charge	Q_{gd}		---	4.5	---	
Turn-On Delay Time	$T_{d(on)}$	$V_{DD}=-50V, V_{GS}=-10V, R_G=3.3\Omega, I_D=-5A$	---	10	---	ns
Rise Time	T_r		---	28	---	
Turn-Off Delay Time	$T_{d(off)}$		---	72	---	
Fall Time	T_f		---	79	---	
Input Capacitance	C_{iss}	$V_{DS}=-25V, V_{GS}=0V, f=1\text{MHz}$	---	1050	---	pF
Output Capacitance	C_{oss}		---	118	---	
Reverse Transfer Capacitance	C_{rss}		---	25	---	

Drain-Source Diode Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Diode Forward Voltage ²	V_{SD}	$V_{GS}=0V, I_S=-1A, T_J=25^{\circ}\text{C}$	---	---	-1.2	V
Reverse Recovery Time	t_{rr}	$I_F=-8A, di/dt=100A/\mu s, T_J=25^{\circ}\text{C}$	---	80	---	nS
Reverse Recovery Charge	Q_{rr}		---	140	---	nC

Note:

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 20Z copper.
- 2.The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- 3.The EAS data shows Max. rating . The test condition is $V_{DD}=-50V, V_{GS}=-10V, L=0.1\text{mH}$

Typical Characteristics

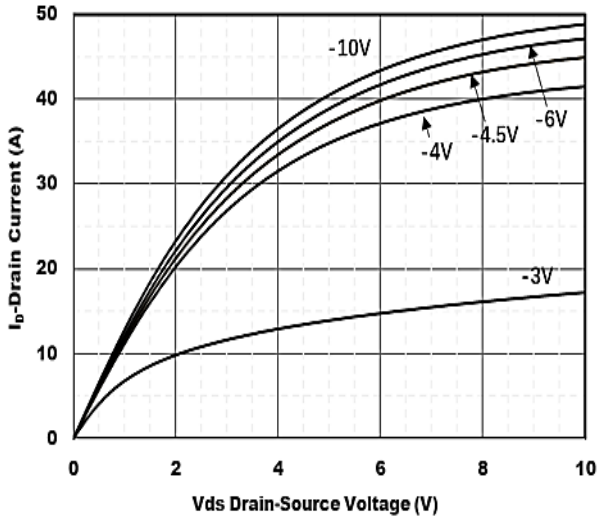


Figure1. Output Characteristics

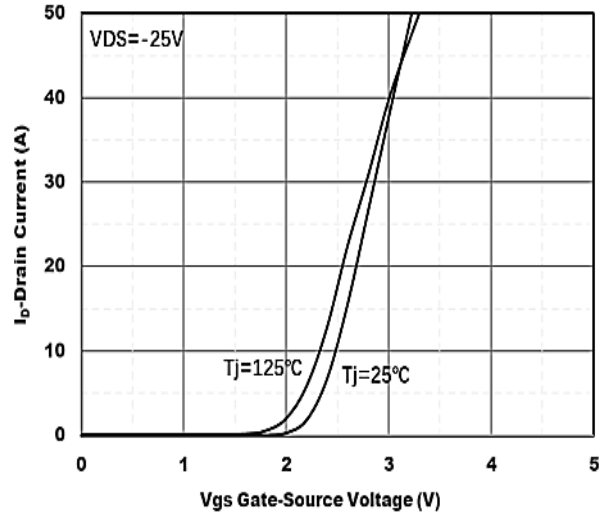


Figure2. Transfer Characteristics

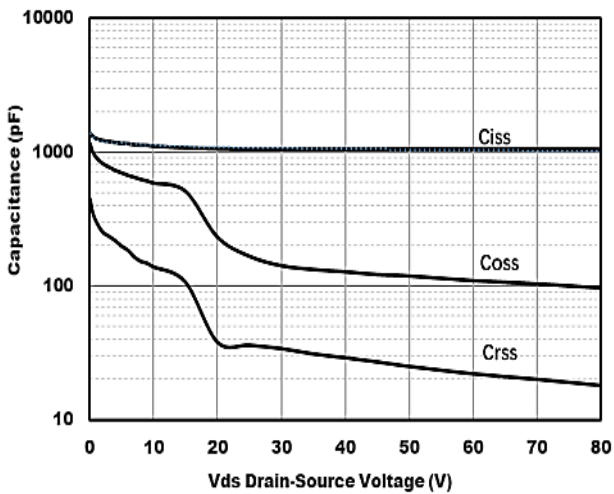


Figure3. Capacitance Characteristics

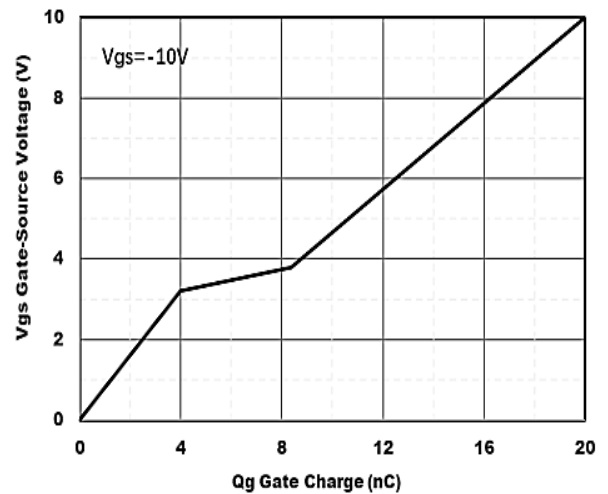


Figure4. Gate Charge

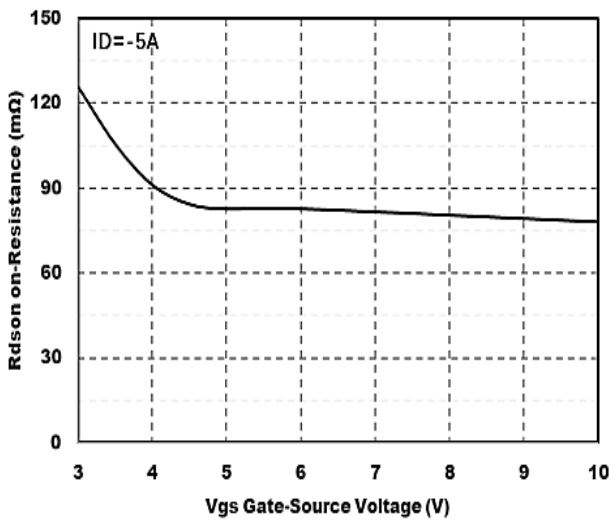


Figure5. : On-Resistance vs. Gate to Source Voltage

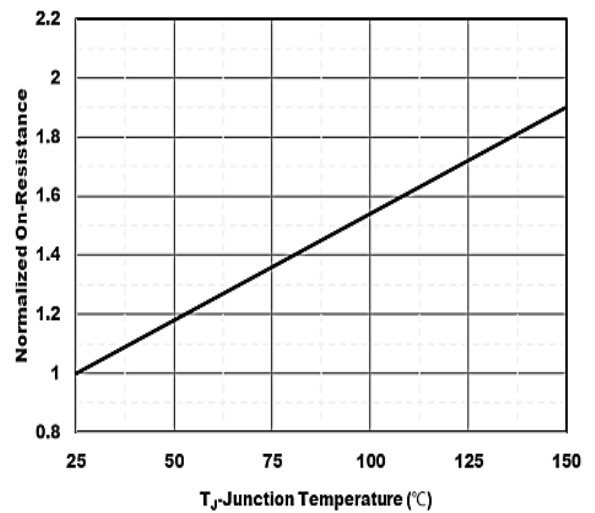


Figure6. Normalized On-Resistance

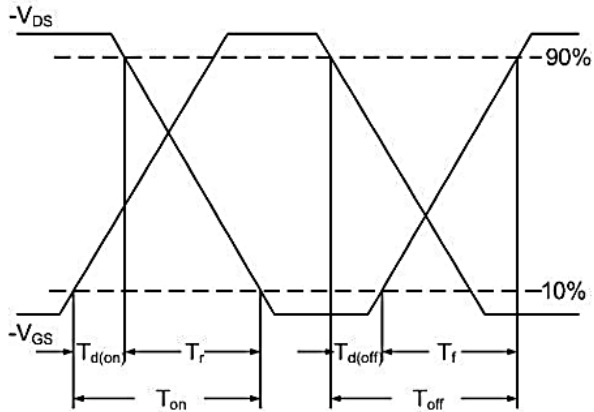


Figure7. Switching Time Waveform

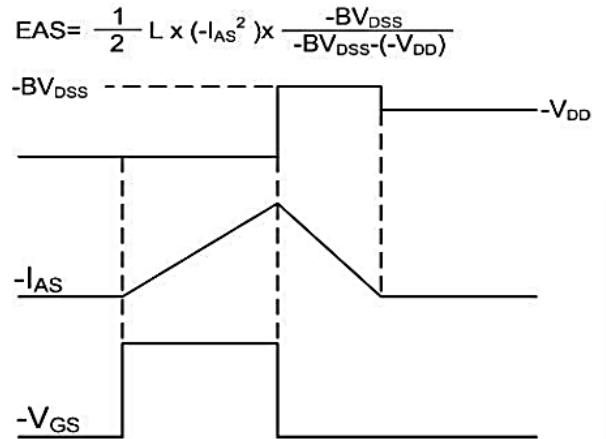
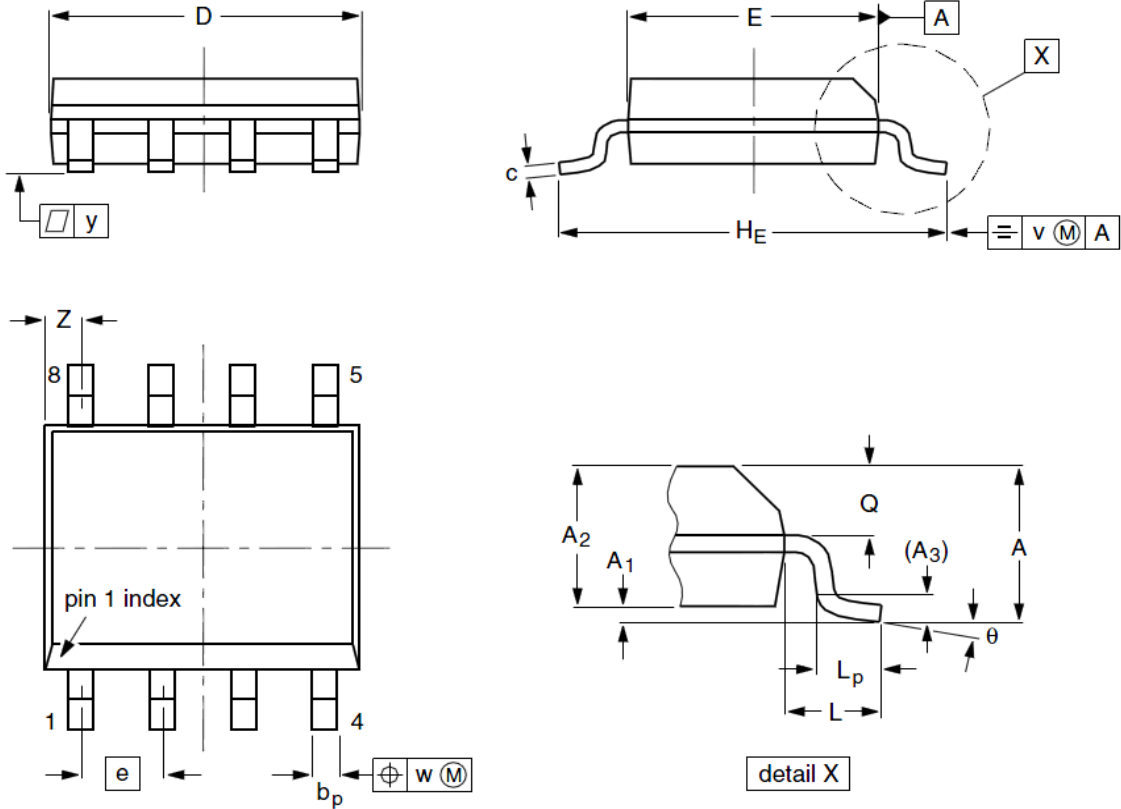


Figure8. Unclamped Inductive Waveform

SOP-8 Package Outline Dimensions



Symbol	Dimensions (unit:mm)			Symbol	Dimensions (unit:mm)		
	Min	Typ	Max		Min	Typ	Max
A	1.35	1.55	1.75	A₁	0.10	0.18	0.25
A₂	1.25	1.45	1.65	A₃	--	0.25	--
b_p	0.36	0.42	0.51	c	0.19	0.22	0.25
D	4.70	4.92	5.10	E	3.80	3.90	4.00
e	--	1.27	--	H_E	5.80	6.00	6.20
L	--	1.05	--	L_p	0.40	0.68	1.00
Q	0.60	0.65	0.73	v	--	0.25	--
w	--	0.25	--	y	--	0.10	--
Z	0.30	0.50	0.70	θ	0°		8°

Printing Information

XXXXXXX =====Material Code

XXYY =====XX Representative Year
 YY Representative Weeks