Features

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

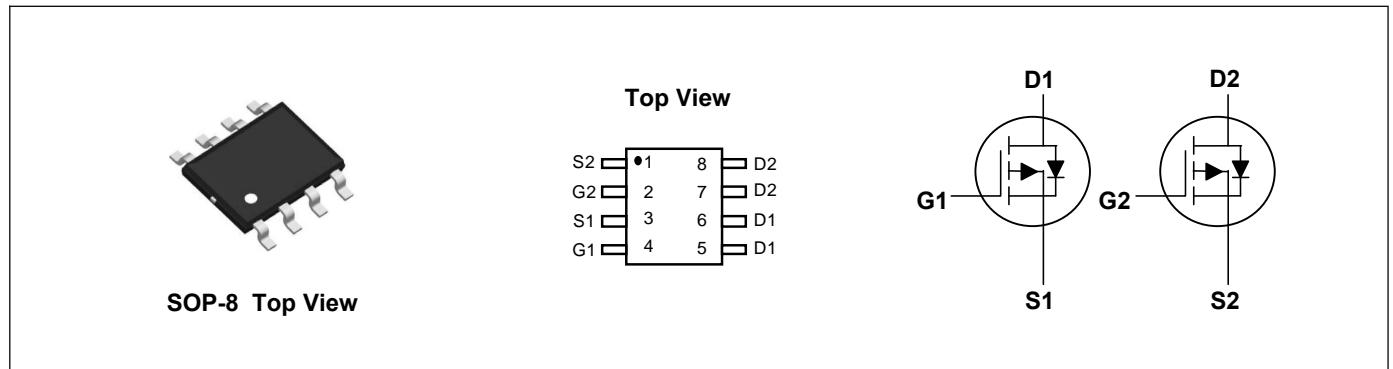## Product Summary

V_{DS}	-30	V
I_D	-8	A
$R_{DS(ON)}$(at V_{GS}=-10V)	20	mΩ
$R_{DS(ON)}$(at V_{GS}=-4.5V)	35	mΩ

Applications

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

SOP-8 Top View

Top View

```
S2  1   8  D2
G2  2   7  D2
S1  3   6  D1
G1  4   5  D1
```

Absolute Maximum Ratings(T$_C$=25℃, unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-8	A
Continuous Drain Current	I_D@T$_C$=100℃	-5.7	A
Pulsed Drain Current[2]	I_{DM}	-32	A
Total Power Dissipation	P_D	3.1	W
Storage Temperature Range	T_{STG}	-55 to 150	℃
Operating Junction Temperature Range	T_J	-55 to 150	℃

Thermal Characteristics

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance Junction-Ambient[1]	$R_{\theta JA}$	---	40	℃/W

Electrical Characteristics (T$_J$=25℃, unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV$_{DSS}$	V$_{GS}$=0V , I$_D$=-250uA	-30	-33	---	V
Static Drain-Source On-Resistance	R$_{DS(ON)}$	V$_{GS}$=-10V , I$_D$=-8A	---	16	20	mΩ
		V$_{GS}$=-4.5V , I$_D$=-8A	---	21	35	mΩ
Gate Threshold Voltage	V$_{GS(th)}$	V$_{GS}$=V$_{DS}$, I$_D$ =-250uA	-1	-1.5	-3	V
Drain-Source Leakage Current	I$_{DSS}$	V$_{DS}$=-30V , V$_{GS}$=0V , T$_J$=25℃	---	---	-1	uA
Gate-Source Leakage Current	I$_{GSS}$	V$_{GS}$=±20V , V$_{DS}$=0V	---	---	±100	nA
Forward Transconductance	gfs	V$_{DS}$=-5V , I$_D$=-8A	10	---	---	S
Total Gate Charge	Q$_g$	V$_{DS}$=-15V , V$_{GS}$=-10V, I$_D$=-8A	---	30	---	nC
Gate-Source Charge	Q$_{gs}$		---	5.5	---	
Gate-Drain Charge	Q$_{gd}$		---	8	---	
Turn-On Delay Time	T$_{d(on)}$	V$_{DD}$=-15V ,I$_D$=-8A, V$_{GS}$=-10V, R$_G$=6Ω	---	10	---	ns
Rise Time	T$_r$		---	15	---	
Turn-Off Delay Time	T$_{d(off)}$		---	110	---	
Fall Time	T$_f$		---	70	---	
Input Capacitance	C$_{iss}$	V$_{DS}$=-15V , V$_{GS}$=0V , f=1MHz	---	1600	---	pF
Output Capacitance	C$_{oss}$		---	350	---	
Reverse Transfer Capacitance	C$_{rss}$		---	300	---	

Drain-Source Diode Characteristics

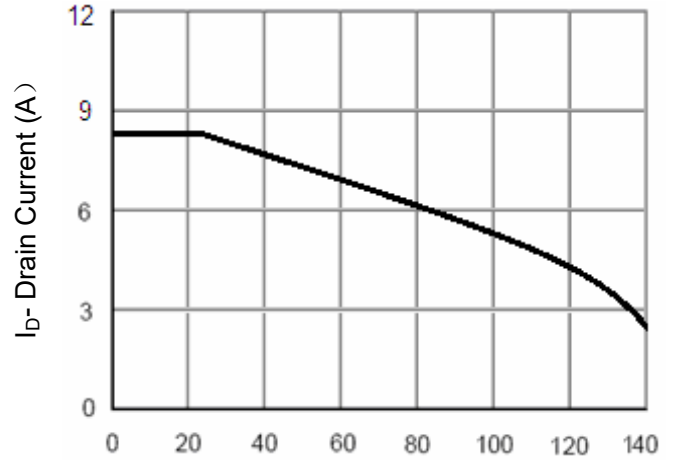| Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Diode Forward Voltage[1]	V$_{SD}$	V$_{GS}$=0V ,I$_S$=-8A , T$_J$=25℃	---	---	-1.2	V

Note:

1.The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.

2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%

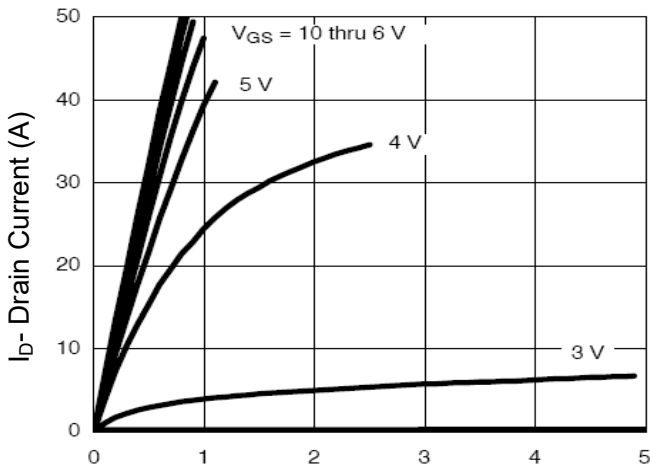## Typical Characteristics
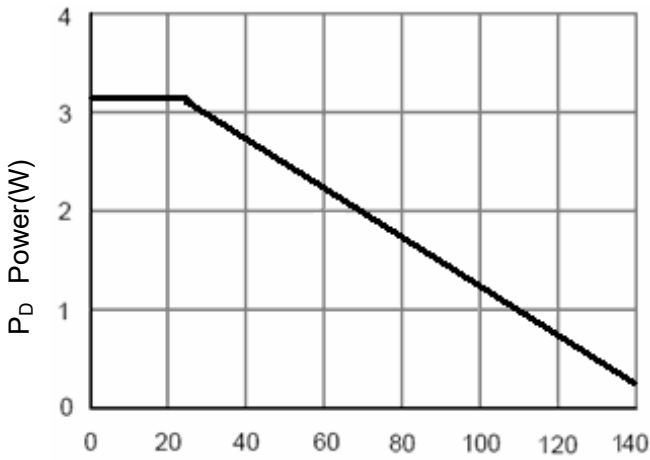
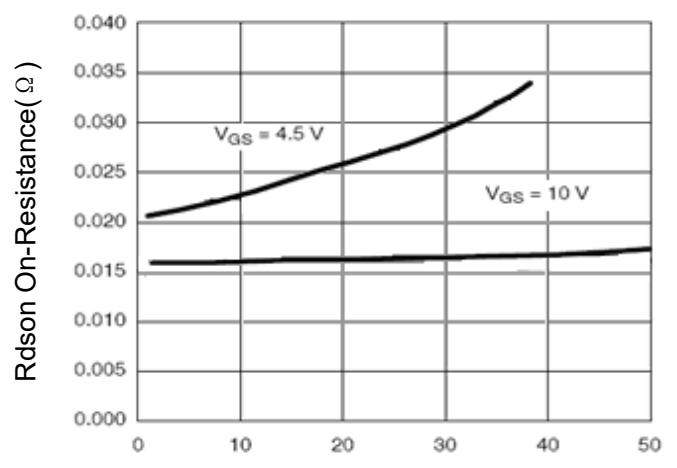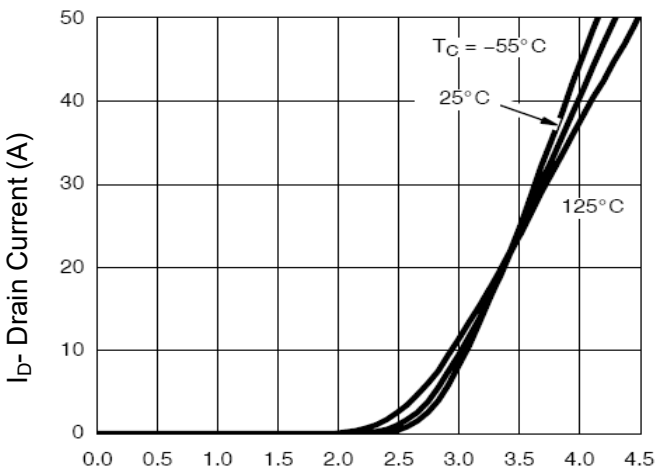T$_J$-Junction Temperature(℃)
Figure 1 Power Dissipation

T$_J$-Junction Temperature(℃)
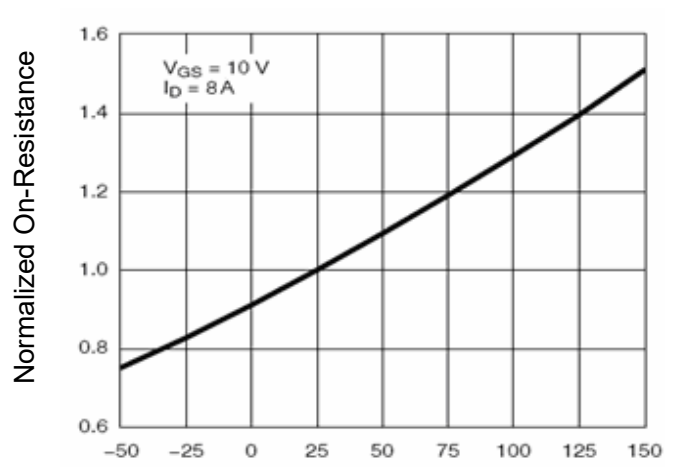**Figure 2 Drain Current**

Vds Drain-Source Voltage (V)
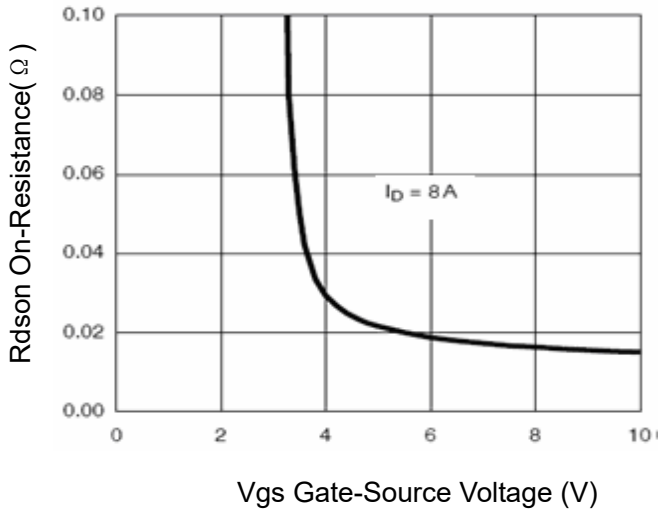**Figure 3 Output Characteristics**

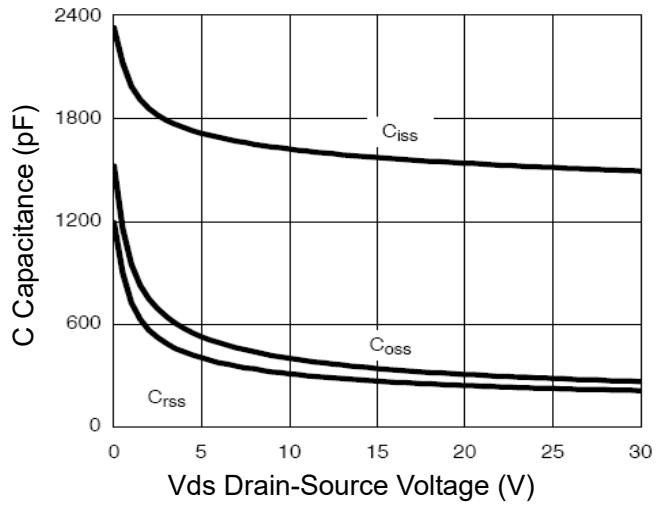I$_D$- Drain Current (A)
Figure 4 Drain-Source On-Resistance

Vgs Gate-Source Voltage (V)
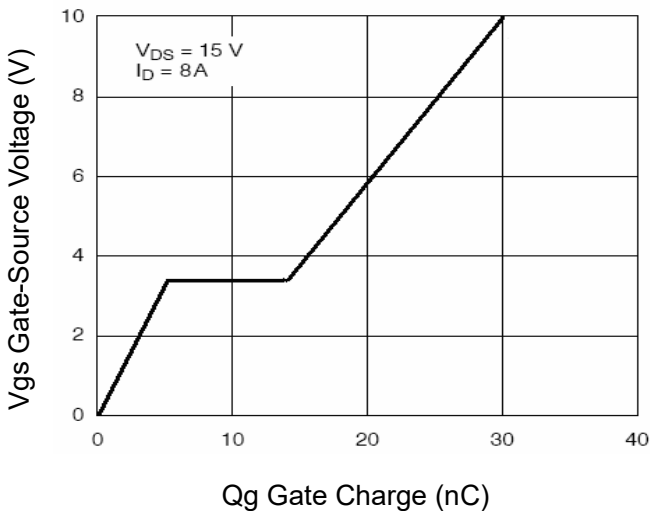**Figure 5 Transfer Characteristics**

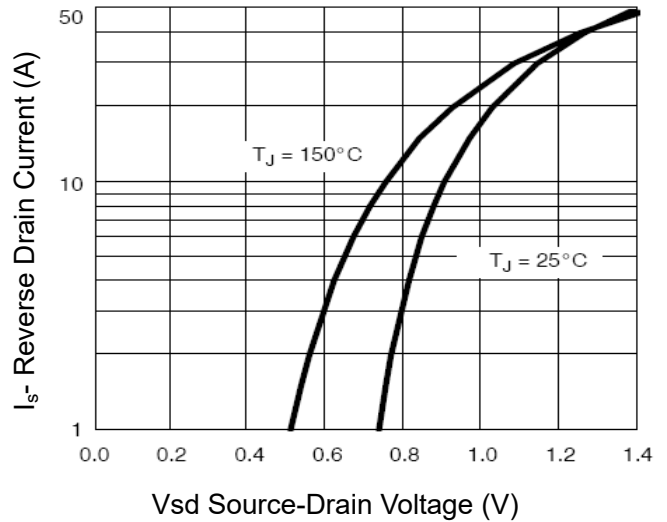T$_J$-Junction Temperature(℃)
Figure 6 Drain-Source On-Resistance

Figure 7 Rdson vs Vgs
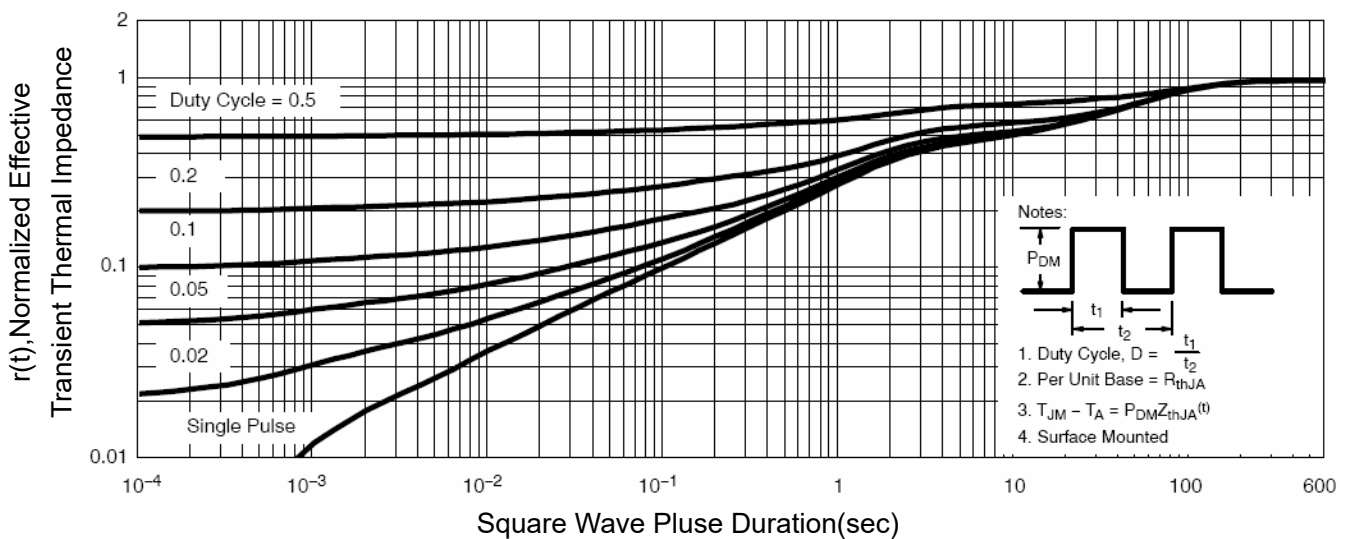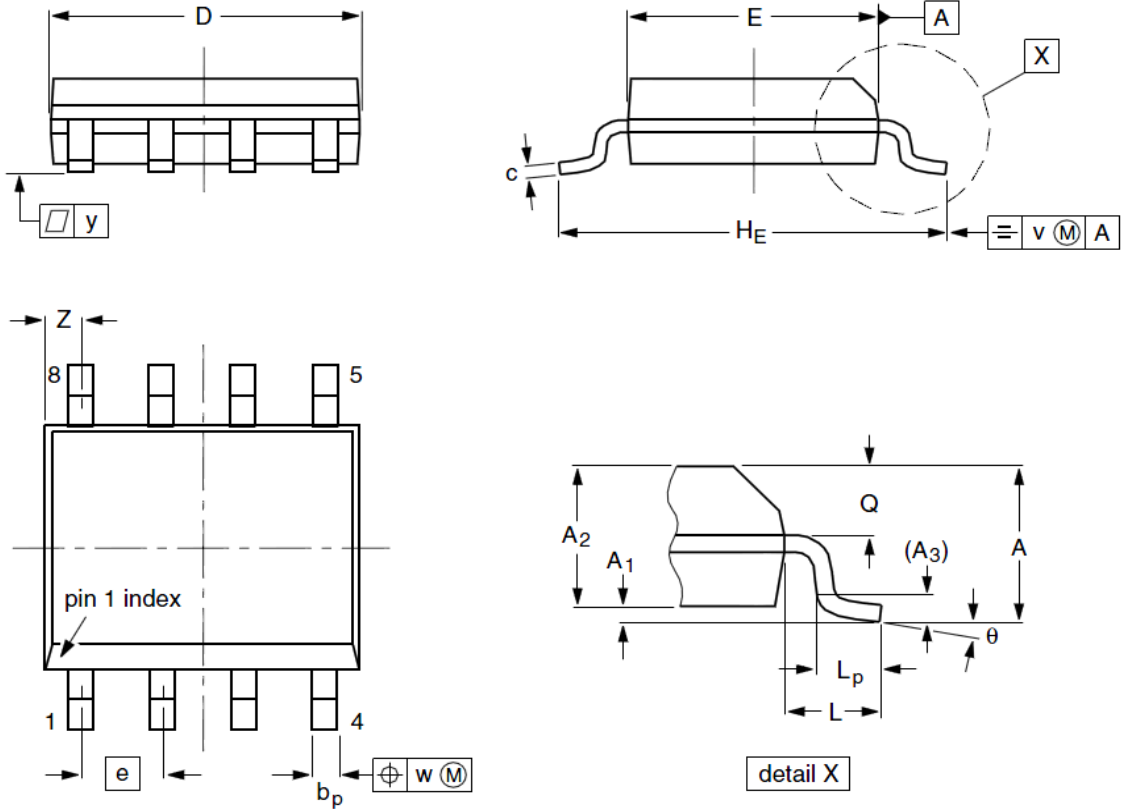

Figure 8 Capacitance vs Vds

Figure 9 Gate Charge

Figure 10 Source- Drain Diode Forward

Figure 11 Normalized Maximum Transient Thermal Impedance

SOP-8 Package Outline Dimensions

detail X

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°