

Features

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

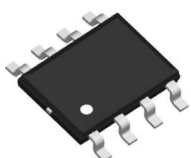
Product Summary



V_{DS}	200	V
I_D	3.9	A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	80	m Ω

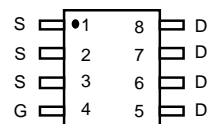
Applications

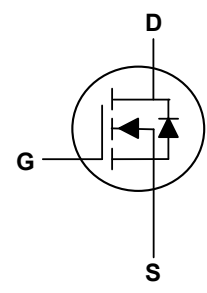
- High Frequency Point-of-Load, Synchronous Buck Converter
- Networking DC-DC Power System
- Load Switch



SOP-8 Top View

Top View





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

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	200	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹	$I_D@T_C=25^\circ C$	3.9	A
Continuous Drain Current ¹	$I_D@T_C=100^\circ C$	2.8	A
Pulsed Drain Current ²	I_{DM}	30	A
Total Power Dissipation	P_D	3	W
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ C$
Operating Junction Temperature Range	T_J	-55 to 150	$^\circ C$

Thermal Characteristics

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	---	41.7	$^\circ C/W$

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	200	---	---	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=3.7A$	---	56	80	m Ω
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	2	---	4	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=200V, V_{GS}=0V, T_J=25^\circ\text{C}$	---	---	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
Forward Transconductance	g_{fs}	$V_{DS}=50V, I_D=3.9A$	7	---	---	S
Total Gate Charge	Q_g	$V_{DS}=100V, V_{GS}=10V, I_D=2.2A$	---	38	---	nC
Gate-Source Charge	Q_{gs}		---	9	---	
Gate-Drain Charge	Q_{gd}		---	15	---	
Turn-On Delay Time	$T_{d(on)}$	$V_{DS}=100V, V_{GS}=10V, R_G=6.5\Omega, I_D=2.2A$	---	15	---	ns
Rise Time	T_r		---	13	---	
Turn-Off Delay Time	$T_{d(off)}$		---	26	---	
Fall Time	T_f		---	14	---	
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1\text{MHz}$	---	4200	---	pF
Output Capacitance	C_{oss}		---	163	---	
Reverse Transfer Capacitance	C_{rss}		---	75	---	

Drain-Source Diode Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Continuous Source Current	I_S		---	---	3.9	A
Diode Forward Voltage ²	V_{SD}	$V_{GS}=0V, I_S=3.7A, T_J=25^\circ\text{C}$	---	---	1.2	V

Note:

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

Typical Characteristics

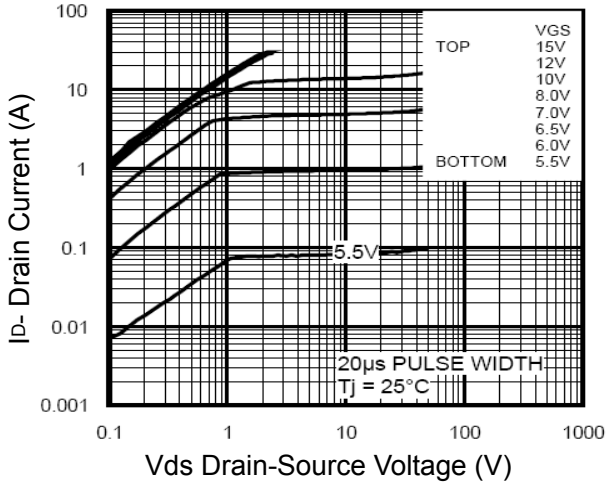


Figure 1 Output Characteristics

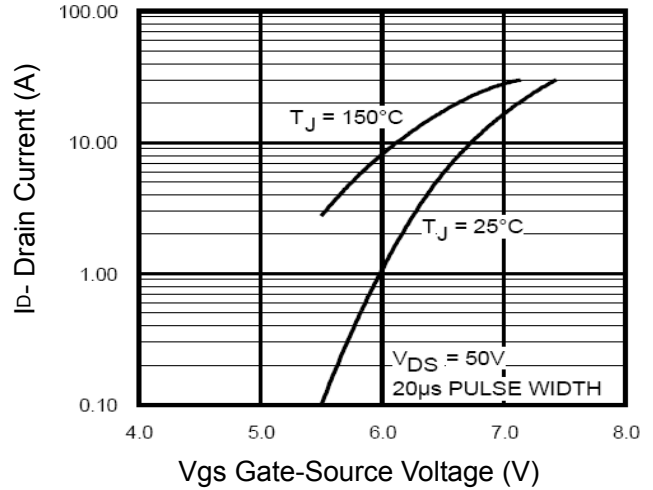


Figure 2 Transfer Characteristics

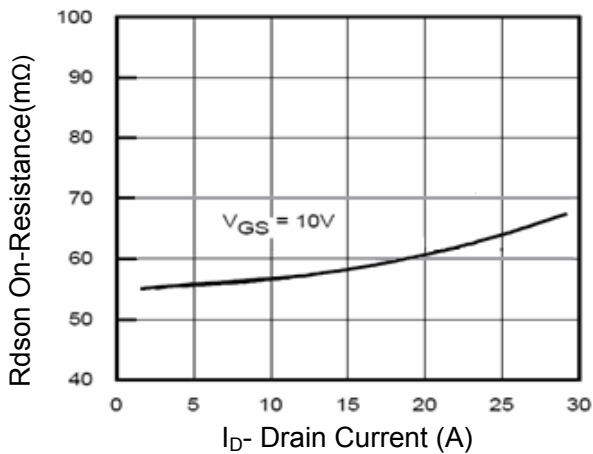


Figure 3 Rdson- Drain Current

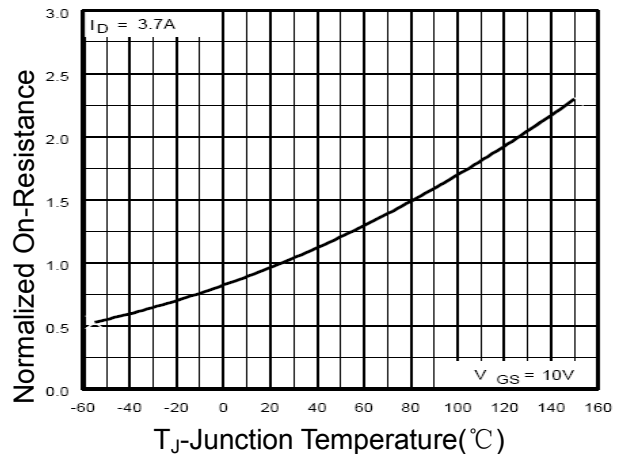


Figure 4 Rdson-Junction Temperature

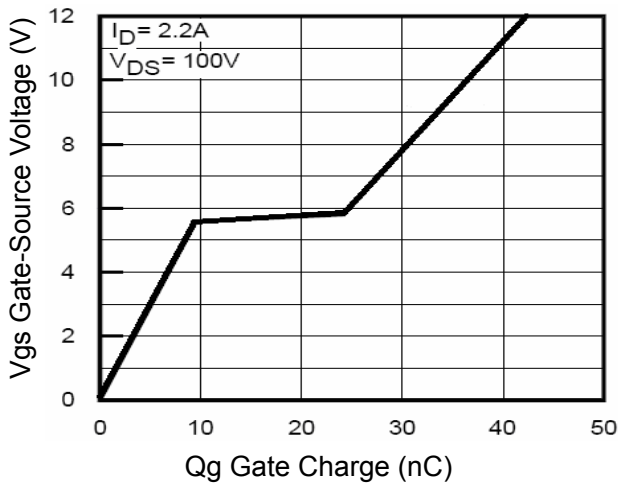


Figure 5 Gate Charge

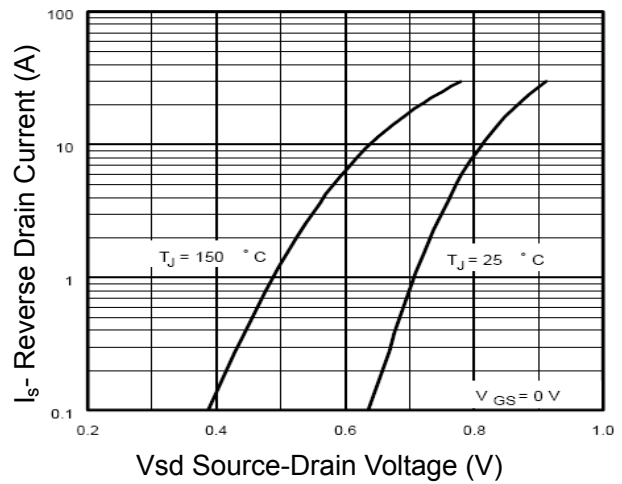


Figure 6 Source- Drain Diode Forward

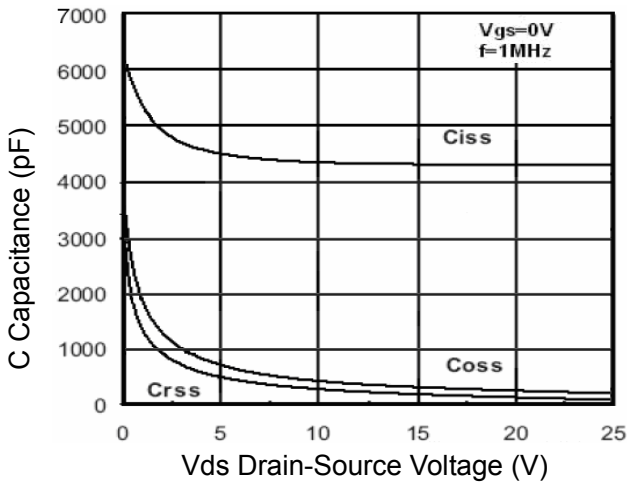


Figure 7 Capacitance vs Vds

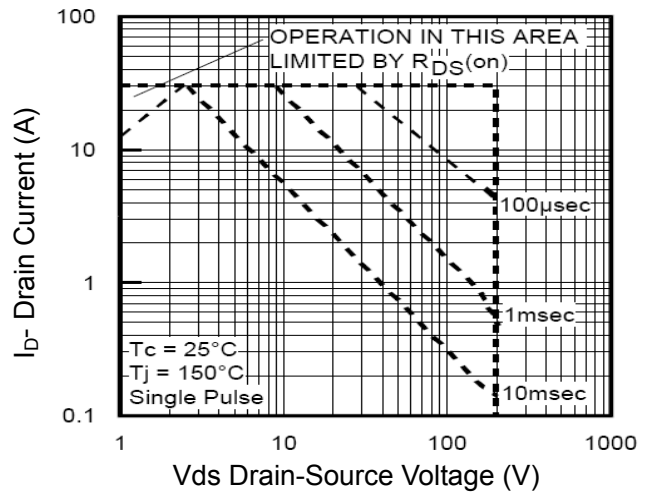


Figure 8 Safe Operation Area

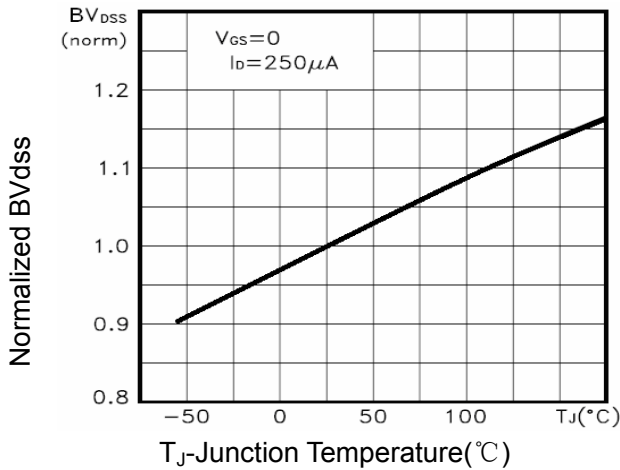


Figure 9 BV_{DSS} vs Junction Temperature

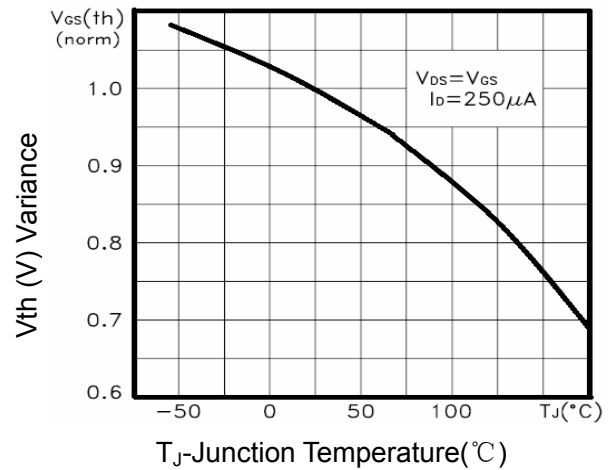


Figure 10 V_{GS(th)} vs Junction Temperature

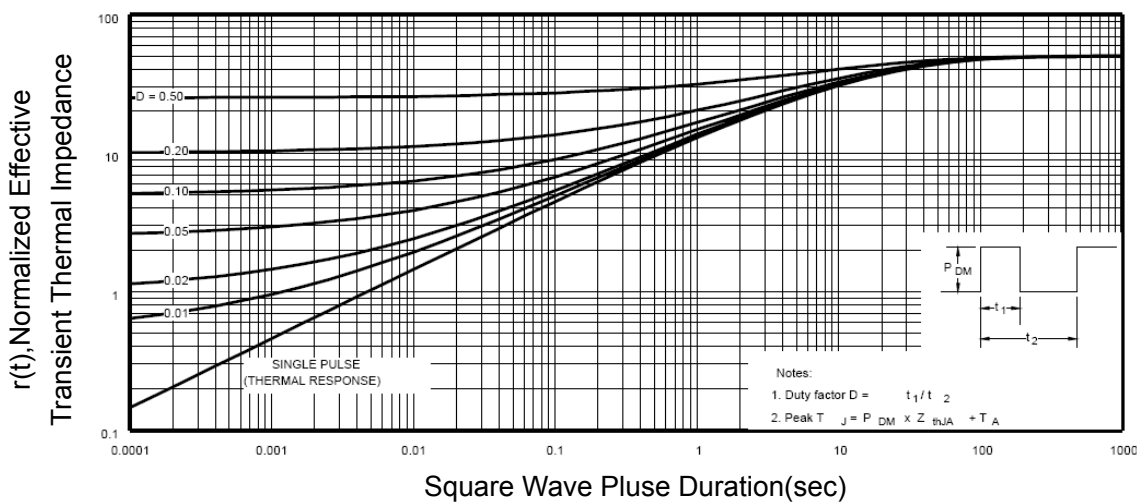
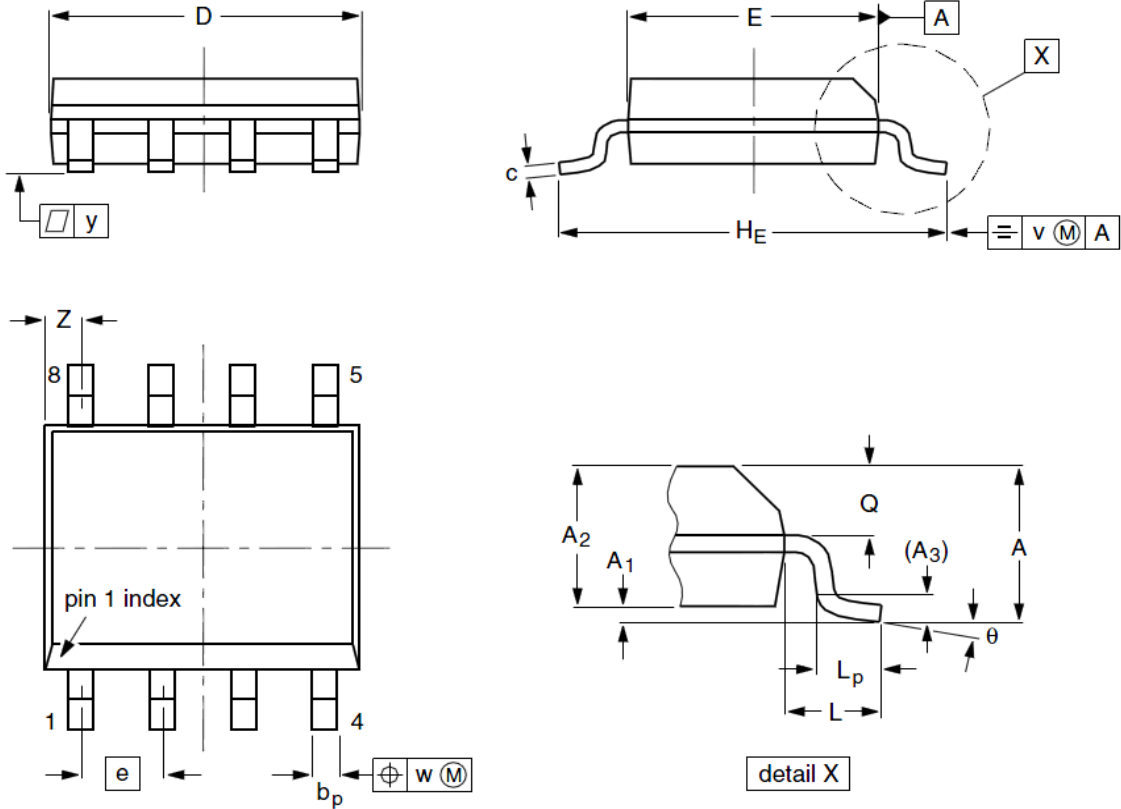


Figure 11 Normalized Maximum Transient Thermal Impedance

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	A ₁	0.10	0.18	0.25
A ₂	1.25	1.45	1.65	A ₃	--	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°