

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	11mΩ@-10V	-9A
	15mΩ@-4.5V	

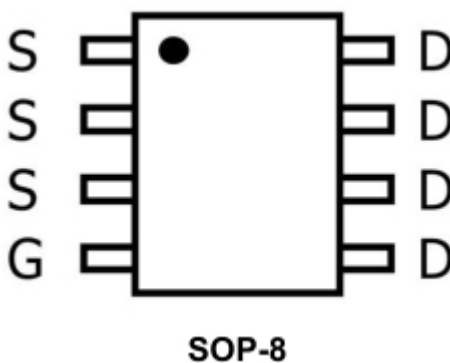
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

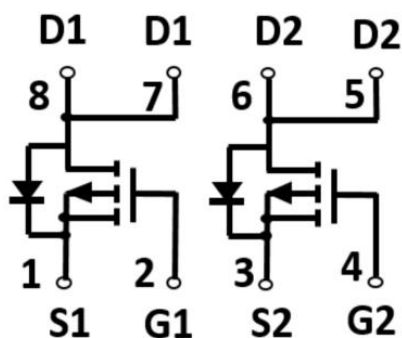
Application

- High power and current handing capability
- Ideal for Lion battery pack applications
- Networking DC-DC Power System
- Load Switch

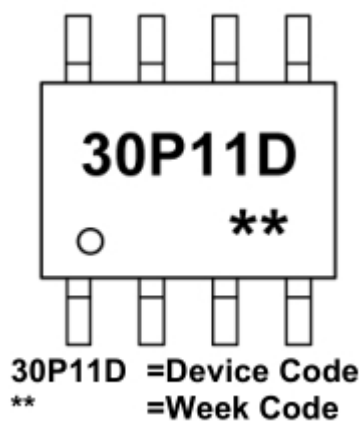
Package



Circuit diagram



Marking



Absolute maximum ratings

($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-9	A
Pulsed Drain Current ¹	I_{DM}	-36	A
Power Dissipation	P_D	1.5	W
Thermal Resistance,Junction-to-Ambient ²	$R_{\theta JA}$	85	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 To 150	$^{\circ}\text{C}$

Electrical characteristics

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V _{GS} = 0V, I _D = -250μA	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -30V, V _{GS} = 0V			-1	uA
Zero Gate Voltage Drain Current(T _j =125°C)		V _{DS} = -30V, V _{GS} =0V			-100	
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±100	uA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = -250μA	-1	-1.5	-2.2	V
Drain-Source On-State Resistance ¹	R _{DS(on)}	V _{GS} = -10V, I _D = -10A		11	15	mΩ
Drain-Source On-State Resistance ¹	R _{DS(on)}	V _{GS} = -4.5V, I _D = -6A		15	24	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} =0V, f=1MHz		1915		pF
Output Capacitance	C _{OSS}			300		
Reverse Transfer Capacitance	C _{rss}			210		
Gate Resistance	R _g	f=1MHz		4.8		Ω
Total Gate Charge	Q _g	V _{DS} = -15V, I _D = -10A, V _{GS} = -10V		39		nC
Gate-Source Charge	Q _{gs}			7		
Gate-Drain Charge	Q _{gd}			13		
Switching Characteristics						
Turn-on Delay Time	T _{d(on)}	V _{DD} = -15V, I _D = -10A, V _{GS} = -10V, R _{GEN} =3Ω		10		nS
Turn-on Rise Time	T _r			10.6		
Turn-off Delay Time	T _{d(off)}			31		
Turn-off Fall Time	T _f			10		
Drain-Source Diode Characteristics						
Forward on voltage	V _{SD}	V _{GS} =0V,I _{SD} = -10A		-0.8	-1.2	V
Reverse Recovery Time	trr	T _j =25°C,I _{sd} = - 10A,V _{GS} =0V di/dt= -500A/μs		16		nS
Reverse Recovery Charge	Qrr			42		nC

Note:

1. Pulse width $\leq 300\mu s$; duty cycle $\leq 2\%$.

Typical Characteristics

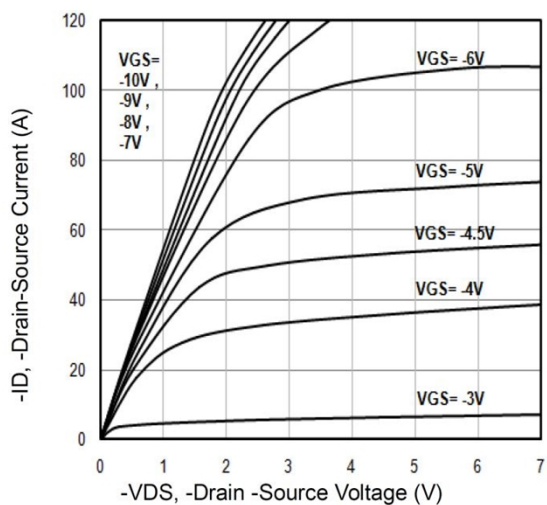


Fig1. Typical Output Characteristics

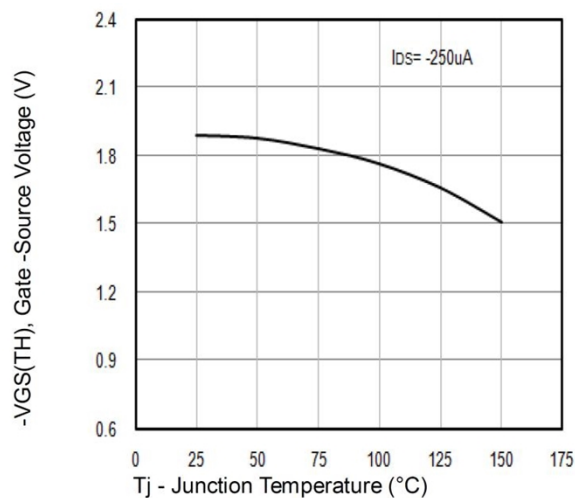


Fig2. $-V_{GS(TH)}$ Gate -Source Voltage Vs. T_j

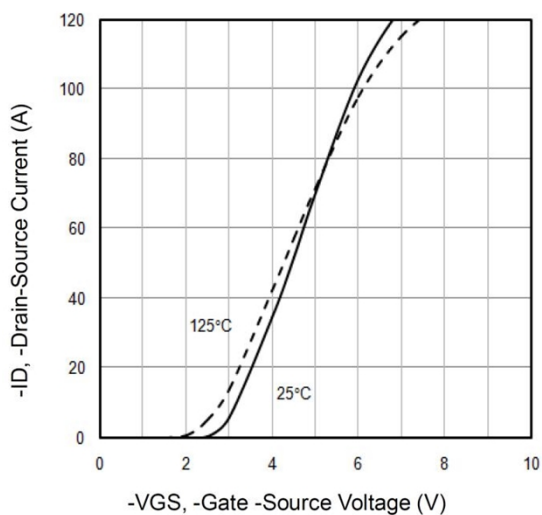


Fig3. Typical Transfer Characteristics

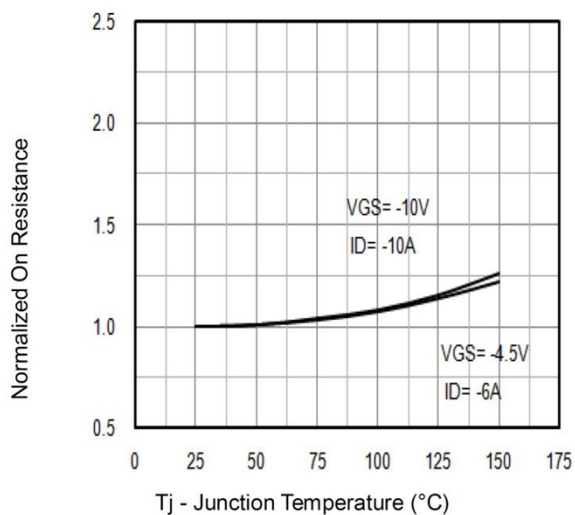


Fig4. Normalized On-Resistance Vs. T_j

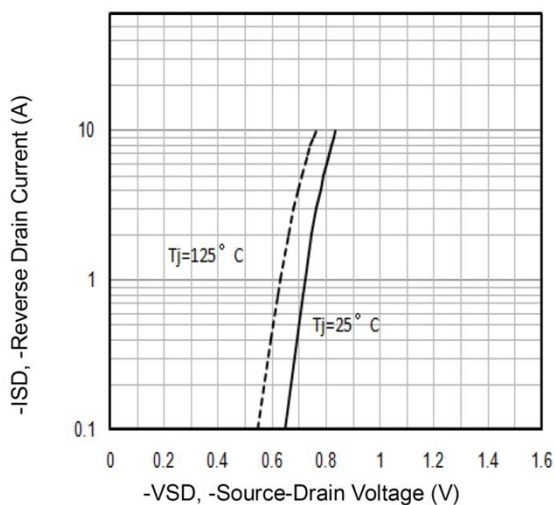


Fig5. Typical Source-Drain Diode Forward Voltage

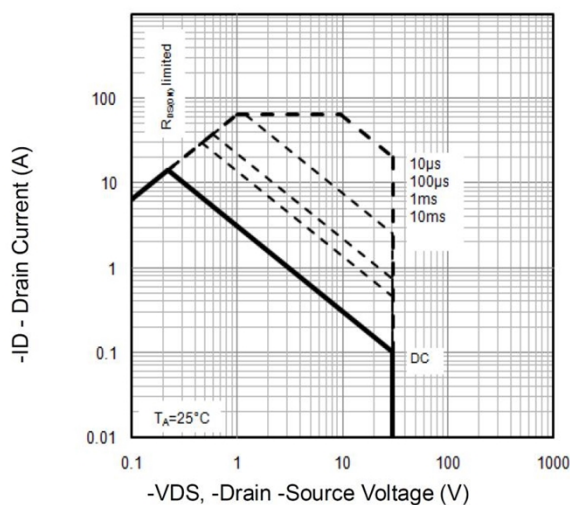


Fig6. Maximum Safe Operating Area

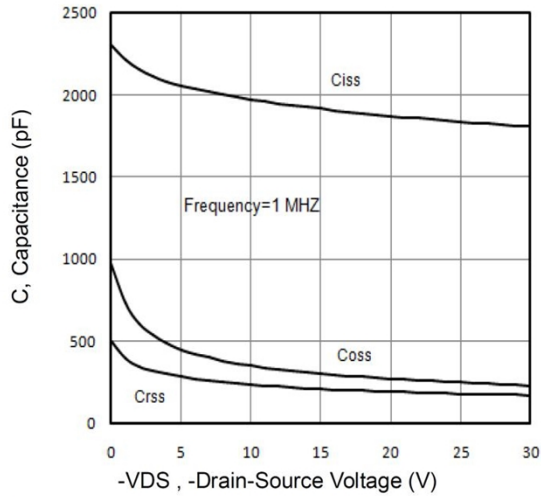


Fig7. Typical Capacitance Vs. Drain-Source Voltage

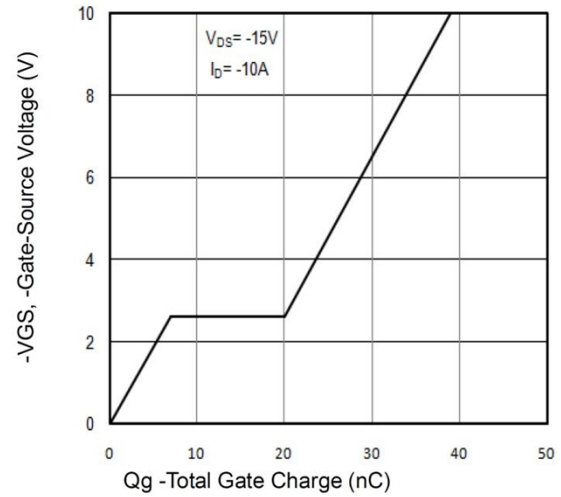


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

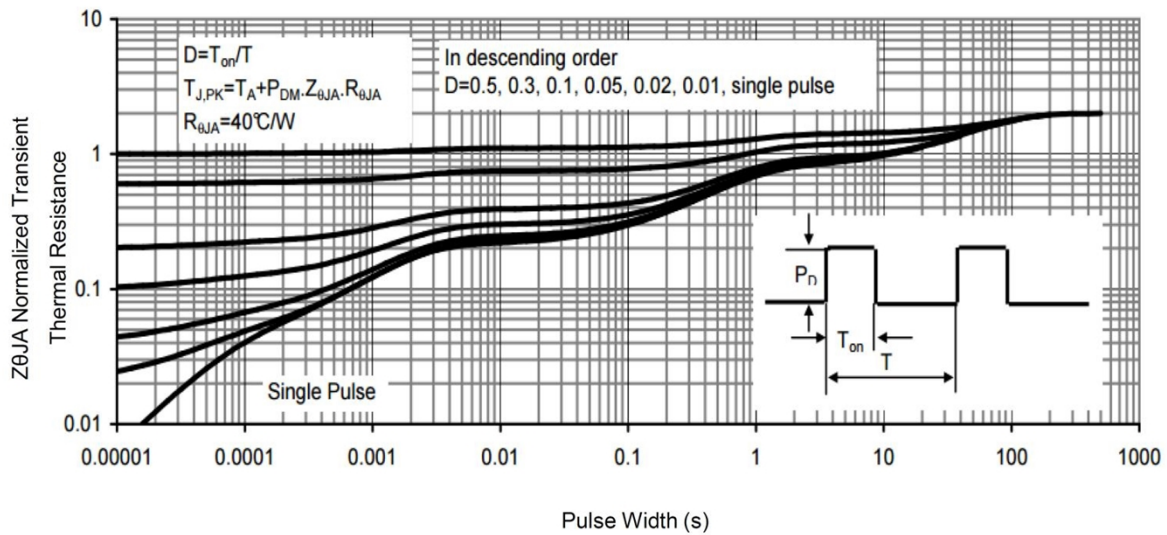


Fig9. Normalized Maximum Transient Thermal Impedance

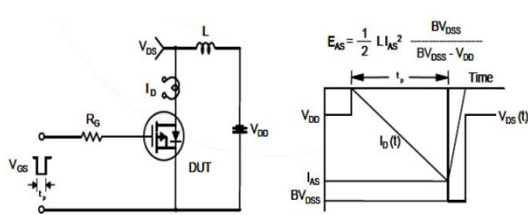


Fig10. Unclamped Inductive Test Circuit and Waveforms

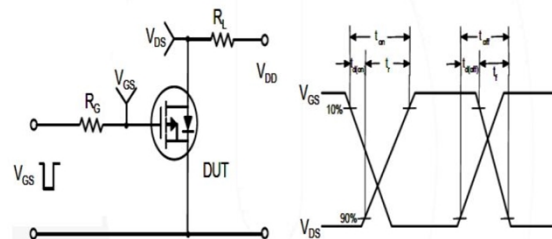
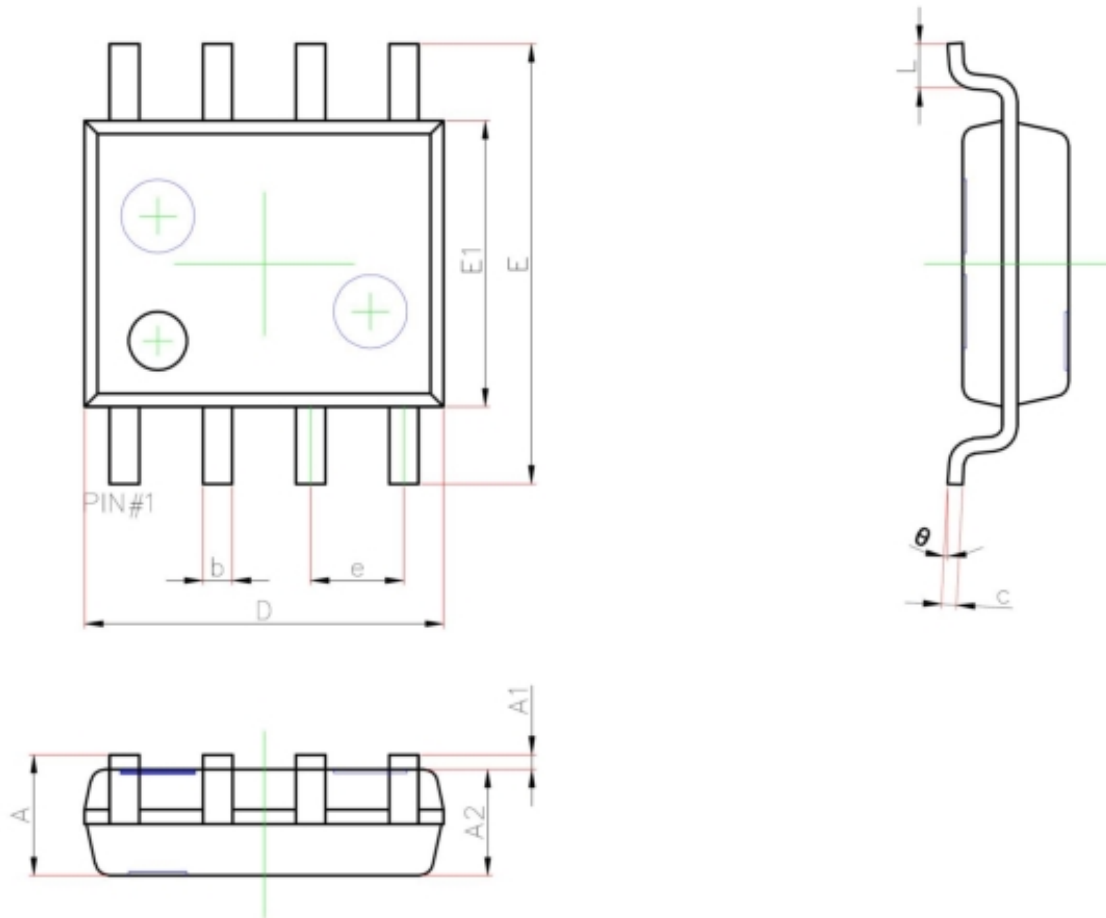


Fig11. Switching Time Test Circuit and waveforms

SOP-8 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.35	1.75
A1	0.10	0.25
A2	1.35	1.55
b	0.33	0.51
c	0.17	0.25
D	4.80	5.00
e	1.27 REF.	
E	5.80	6.20
E1	3.80	4.00
L	0.40	1.27
θ	0°	8°