

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	18mΩ@-10V	-9A
	21mΩ@-4.5V	

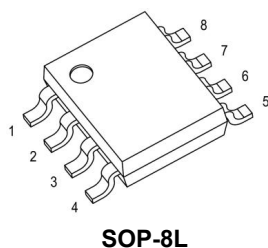
Feature

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

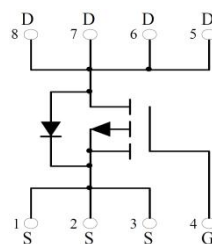
Application

- Battery Switch
- Load switch
- Power management

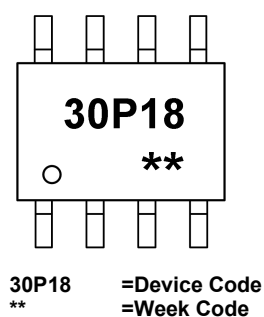
Package



Circuit diagram



Marking



**Absolute maximum ratings (Ta=25°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}	-48	A
Power Dissipation	P_D	3.1	W
Thermal Resistance from Junction to Ambient ²⁾	$R_{\theta JA}$	40	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

Electrical characteristics (T_A=25 °C, unless otherwise noted)

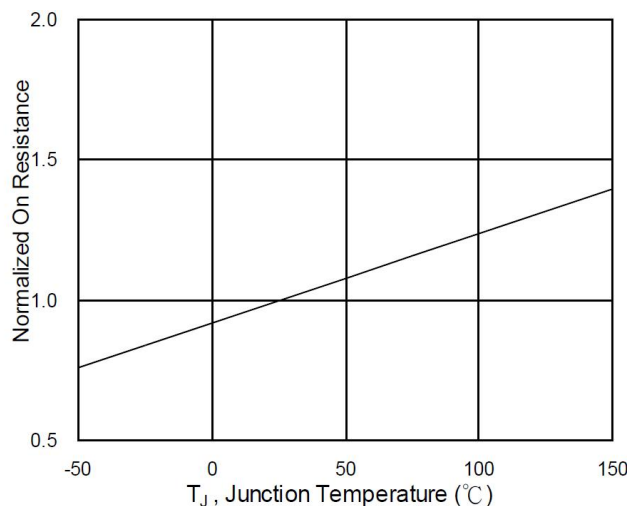
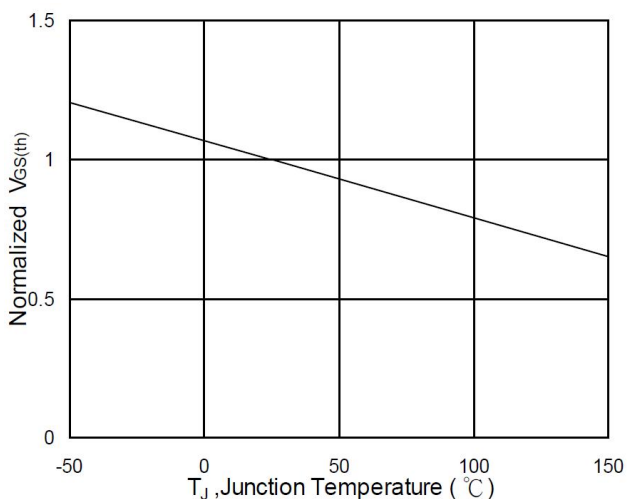
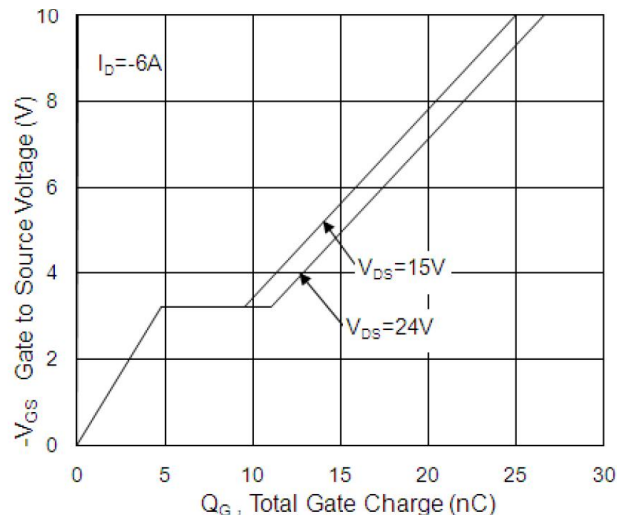
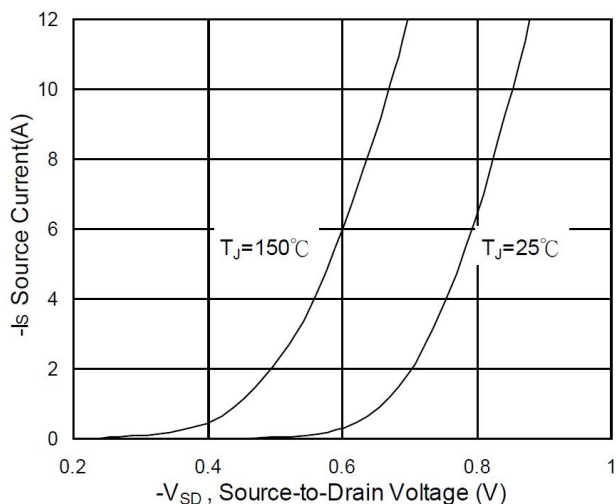
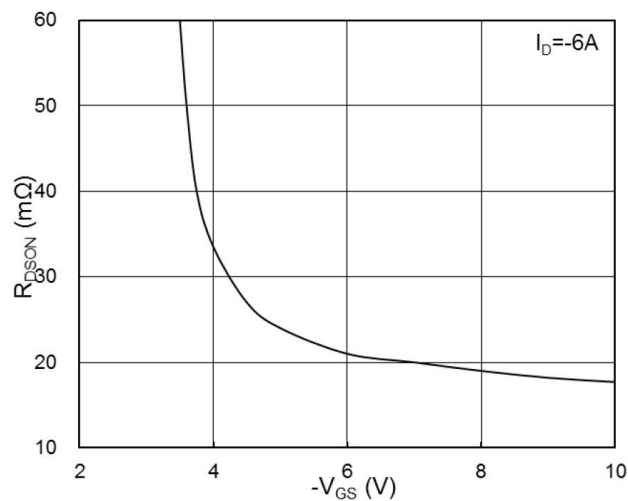
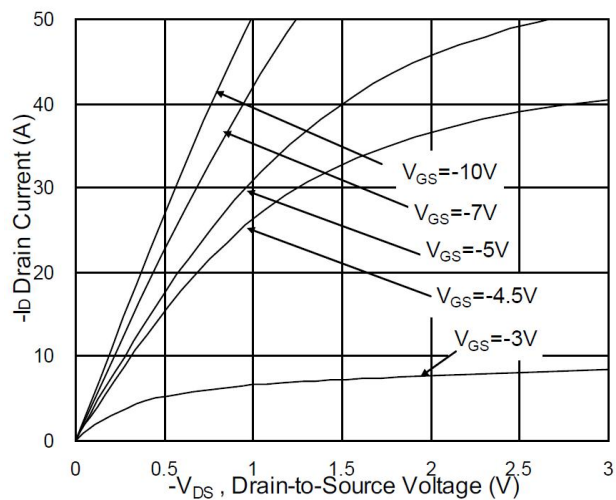
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -30V,V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1	-1.5	-2.5	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-6A		18	25	mΩ
		V _{GS} =-4.5V, I _D =-4A		21	34	
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =-15V , V _{GS} =0V , f=1MHz		1345		pF
Output Capacitance	C _{oss}			194		
Reverse Transfer Capacitance	C _{rss}			158		
Switching Characteristics						
Turn-on delay time	t _{d(on)}	V _{DD} =-15V , V _{GS} =-10V , RG=3.3 , ID=-6A		4.6		ns
Turn-on rise time	t _r			14.8		
Turn-off delay time	t _{d(off)}			41		
Turn-off fall time	t _f			19.6		
Total gate charge	Q _g	V _{DS} =-15V , V _{GS} =-4.5V , ID=-6A		12.6		nC
Gate-source charge	Q _{gs}			4.8		
Gate-drain charge	Q _{gd}			4.8		
Source-Drain Diode Characteristics						
Body Diode Voltage	V _{SD}	I _S =-9A, V _{GS} = 0V			-1.2	V

Notes:

- 1) Repetitive rating: Pulse width limited by junction temperature.
- 2) Surface mounted on FR4 board, $t \leq 10s$.



Typical Characteristics



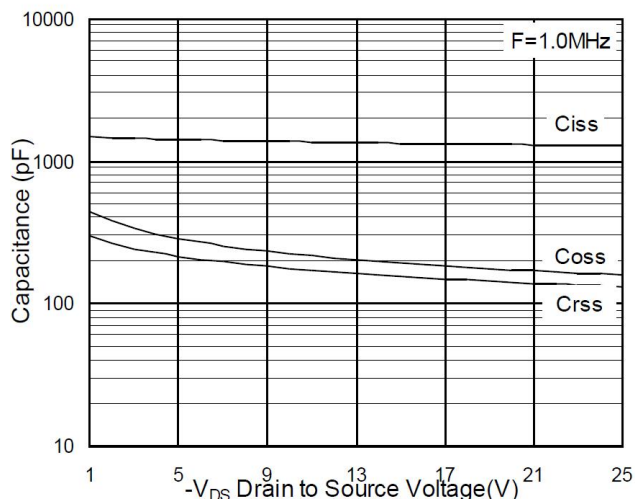


Fig.7 Capacitance

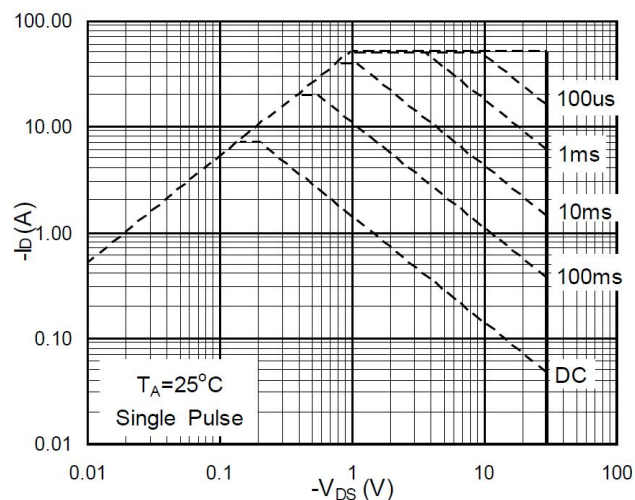


Fig.8 Safe Operating Area

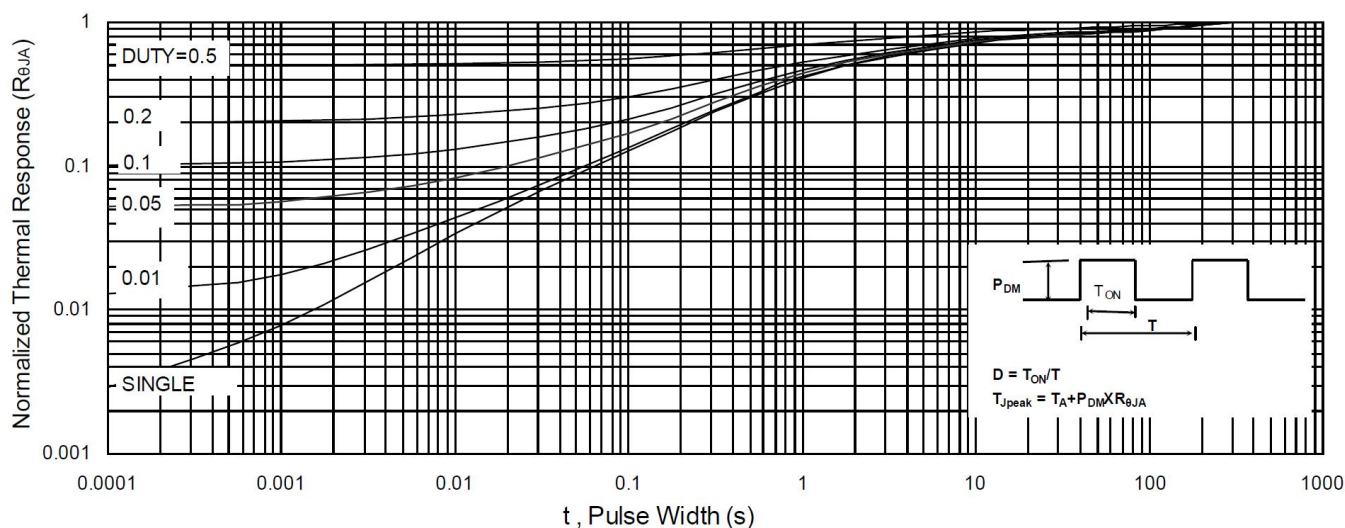


Fig.9 Normalized Maximum Transient Thermal Impedance

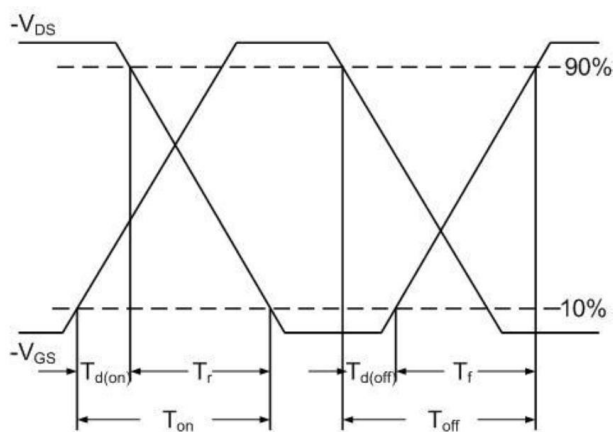


Fig.10 Switching Time Waveform

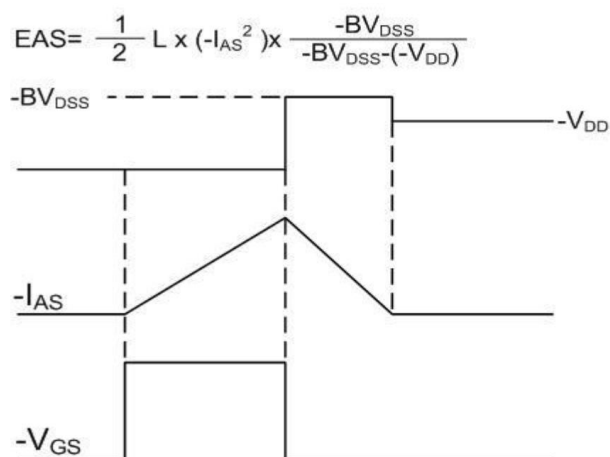
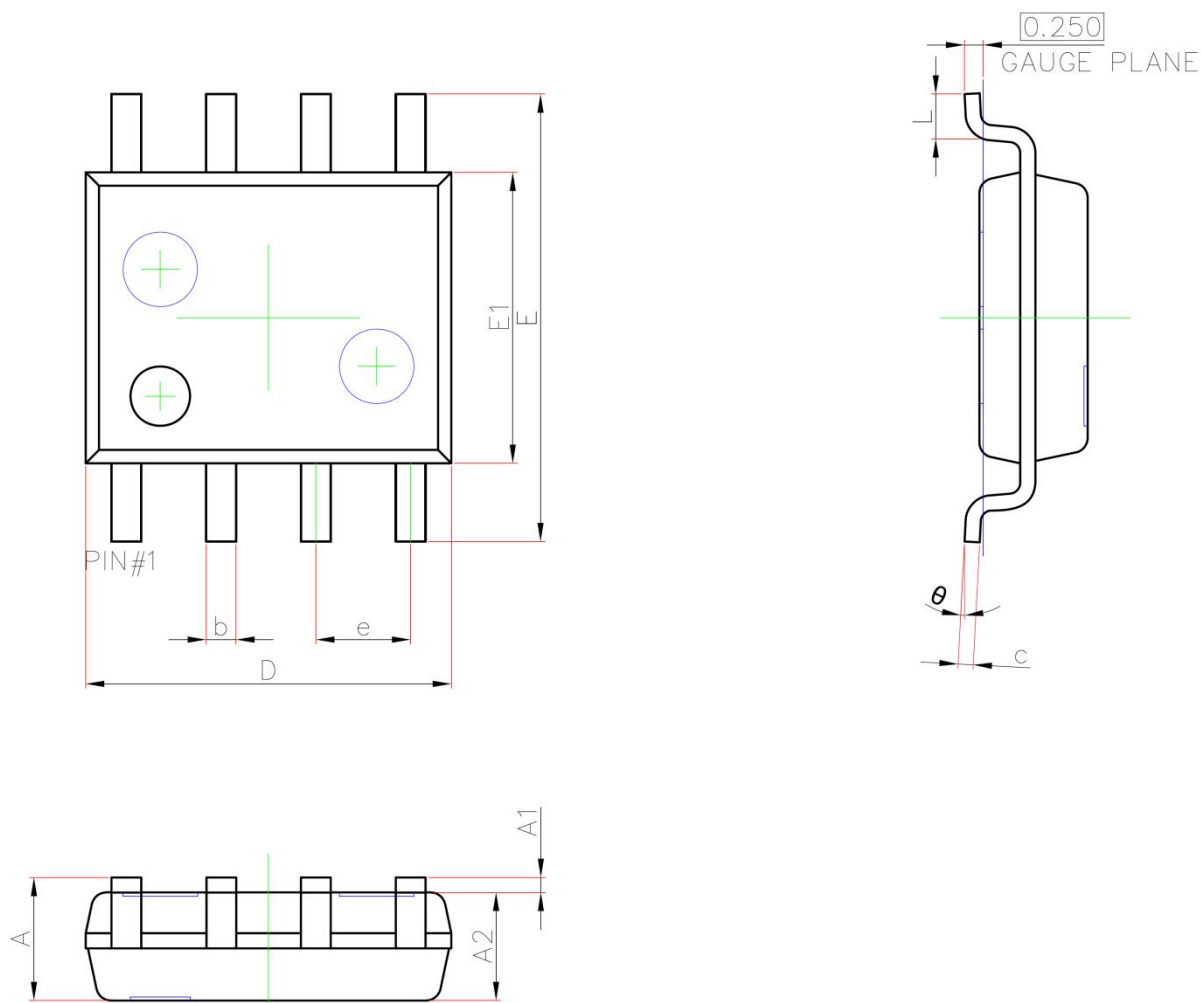


Fig.11 Gate Charge Waveform



SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.450	1.750	0.057	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	0.007	0.010
D	4.700	5.100	0.185	0.201
E	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°