Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	13mΩ@-10V	-9A
	20mΩ@-4.5V	

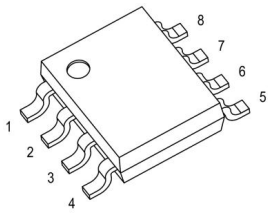
Feature

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

Application

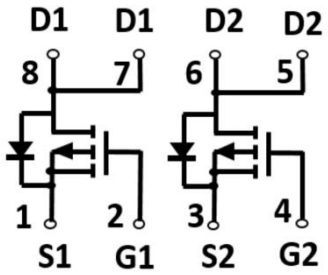
- Battery Switch
- Load switch
- Power management

Package

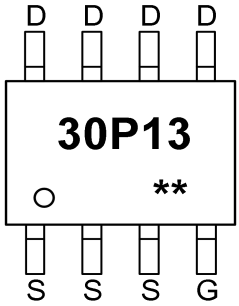


SOP-8L

Circuit diagram



Marking



30P13 =Device Code
****** =Week Code

Absolute maximum ratings (Ta=25℃ 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	1.9	W
Thermal Resistance from Junction to Ambient[2)]	$R_{\theta JA}$	65.8	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

Electrical characteristics (T_A=25 ºC, 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[3)]	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.5	-2.5	V
Drain-source on-resistance[3)]	$R_{DS(on)}$	V_{GS} =-10V, I_D =-10A		13	18	mΩ
		V_{GS} =-4.5V, I_D =-7A		20	30	
Dynamic characteristics[4)]						
Input Capacitance	C_{iss}	V_{DS} =-15V, V_{GS} =0V,f=1MHz		1819		pF
Output Capacitance	C_{oss}			254		
Reverse Transfer Capacitance	C_{rss}			194		
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	V_{DD}=-15V,ID=-1A, VGS=-10V,R_{GEN}=6Ω		10		ns
Turn-on rise time	t_r			15		
Turn-off delay time	$t_{d(off)}$			110		
Turn-off fall time	t_f			70		
Total gate charge	Q_g	V_{DS} =-15V,V_{GS} =-9.1V, I_D =-10A		16		nC
Gate-source charge	Q_{gs}			4.3		
Gate-drain charge	Q_{gd}			6.1		
Source-Drain Diode Characteristics						
Body Diode Voltage	V_{SD}	I_S=-9.1A, V_{GS} = 0V			-1.2	V

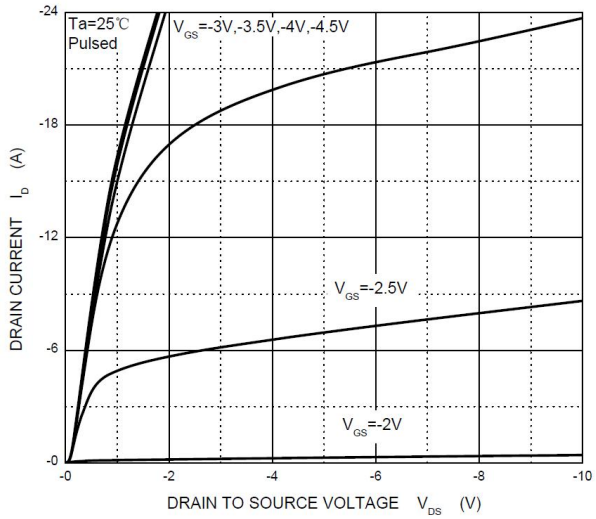
Notes:

1) Repetitive rating: Pulse width limited by junction temperature.

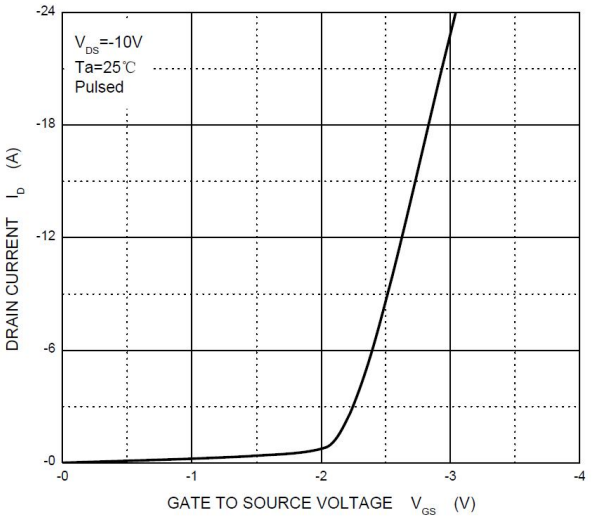
2) Surface mounted on FR4 board, t≤10s.

Typical Characteristics

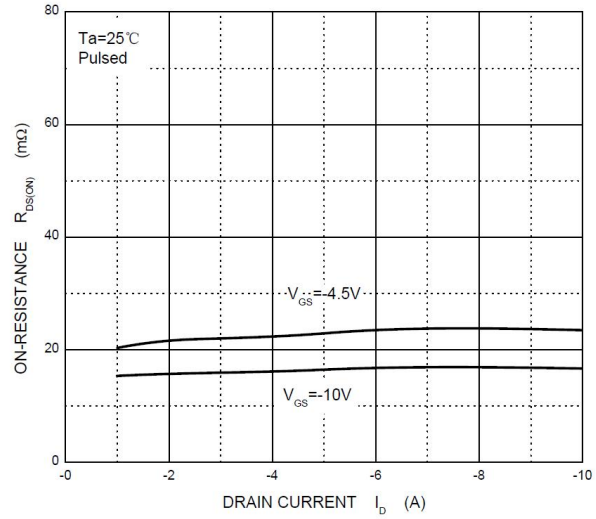
Output Characteristics



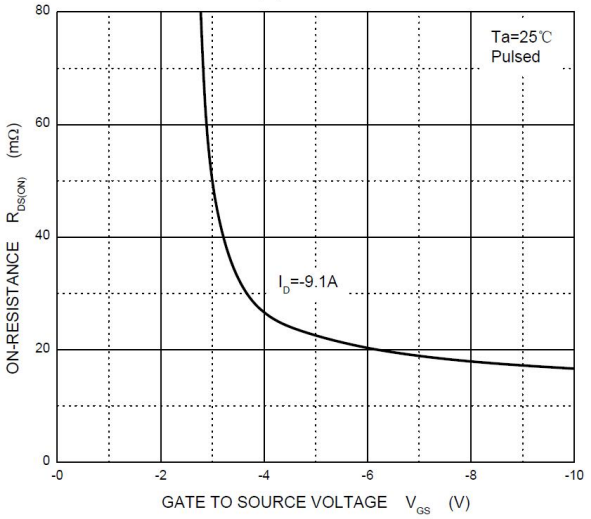
Transfer Characteristics



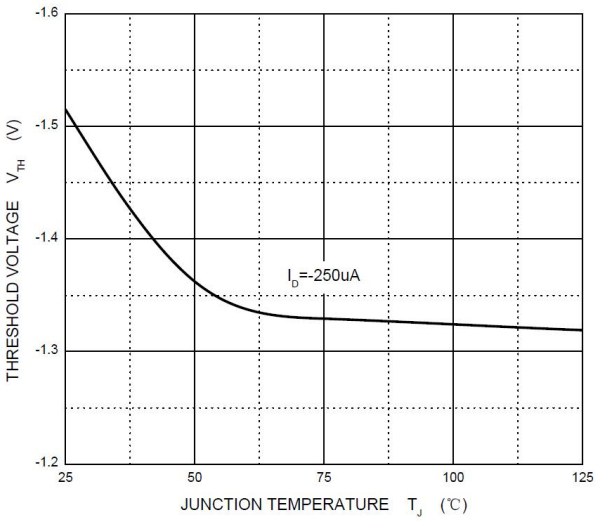
$R_{DS(ON)}$ — I_D



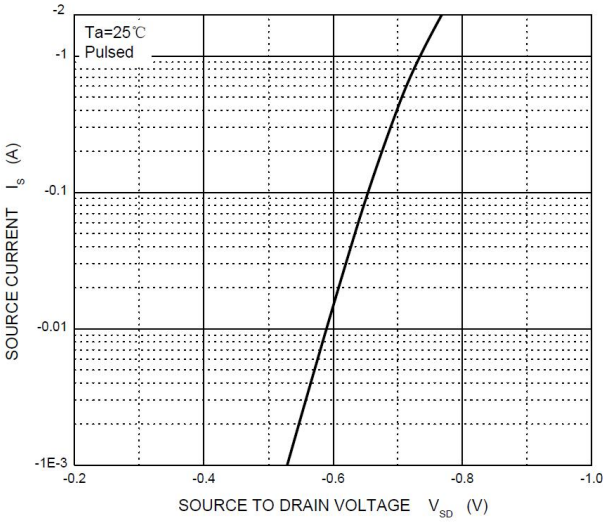
$R_{DS(ON)}$ — V_{GS}



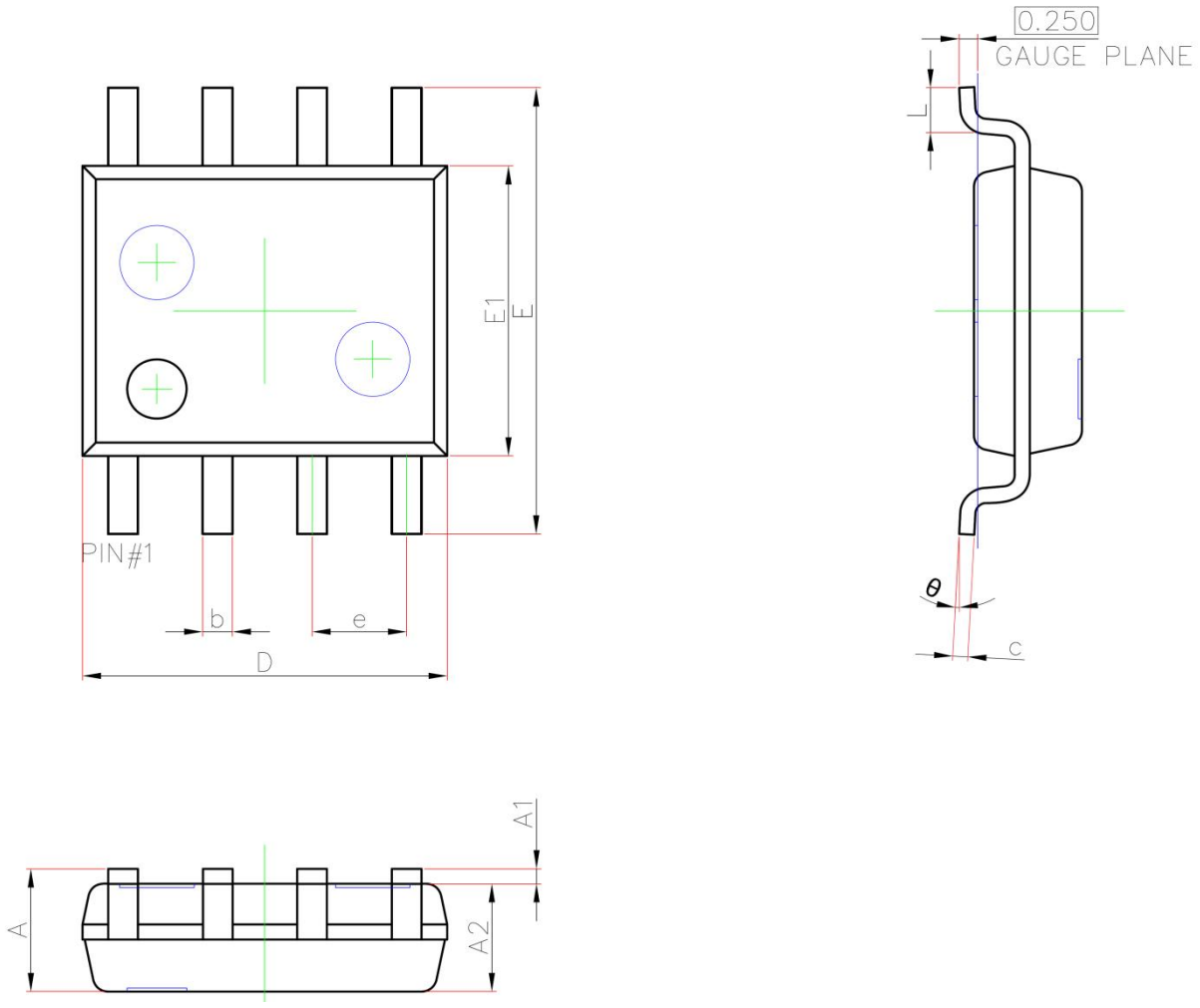
Threshold Voltage



I_S — V_{SD}



SOP-8L 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°