

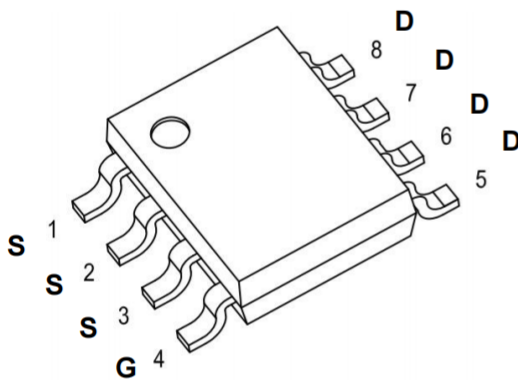
Product Summary

- V_{DS} -30 V
- I_{DS} (@ $V_{GS} = -10V$) -13A
- $R_{DS(ON)}$ (@ $V_{GS} = -10V$) 11mΩ(Typ)

Application

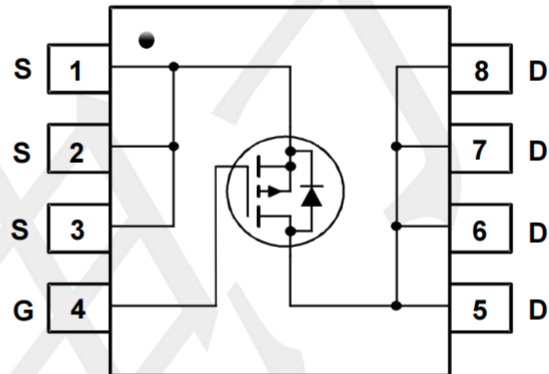
- Reverse Battery protection
- Load switch
- Power management
- PWM Application

Package and Pin Configuration



SOP8

Circuit diagram



Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-13	A
Pulsed Drain Current (note1)	I_{DM}	-72	A
Maximum Power Dissipation	P_D	3.8	W
Operating Junction Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C

Thermal Characteristic

PARAMETER		Symbol	Value	Unit
Thermal Resistance from Junction to Ambient (t ≤ 10s)	PCB Mount (note2)	$R_{\theta JA}$	33	°C/W

notes 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. When mounted on 1" square PCB (FR4 material).

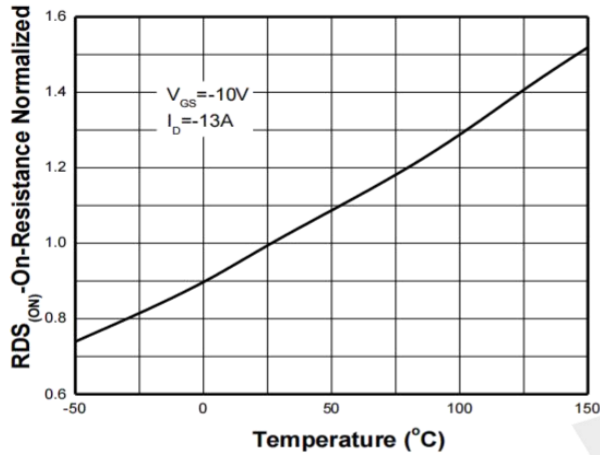
Electrical Characteristics (T_A=25 °C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = -250μA	BV _{DSS}	-30	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = -250μA	V _{GS(th)}	-1.0	-1.8	-3.0	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±20V	I _{GSS}	--	--	±100	nA
Zero Gate Voltage Drain Current	V _{DS} = -24V, V _{GS} =0V	I _{DSS}	--	-0.1	-1	μA
	V _{DS} = -24V, T _J =55°C		--	--	-25	μA
Drain-Source On-State Resistance (Note 1)	V _{GS} = -10V, I _D = -13A	R _{DS(on)}	--	11	15	mΩ
	V _{GS} = -4.5V, I _D = -7A		--	15	20	
Forward Transconductance (Note 2)	V _{DS} = -5V, I _D = -8A	g _{fs}	--	7	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	V _{DS} = -15V, I _D = -13A, V _{GS} = -10V	Q _g	--	24	--	nC
Gate-Source Charge (Note 3)		Q _{gs}	--	7.7	--	
Gate-Drain Charge (Note 3)		Q _{gd}	--	6.5	--	
Input Capacitance	V _{DS} = -15V, V _{GS} = 0V, F = 1.0MHz	C _{iss}	--	2106	--	pF
Output Capacitance		C _{oss}	--	353	--	
Reverse Transfer Capacitance		C _{rss}	--	267	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DD} = -15V, I _D = -5.0A, V _{GS} = -10V, R _{GEN} = 6Ω	t _{d(on)}	--	18	--	nS
Rise Time (Note 3)		t _r	--	24	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	114	--	
Fall Time (Note 3)		t _f	--	47	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _{SD} = -1A	V _{SD}	--	-0.78	-1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _S	--	--	-13	A
Pulsed Current (Note 1)		I _{SM}	--	--	-72	A

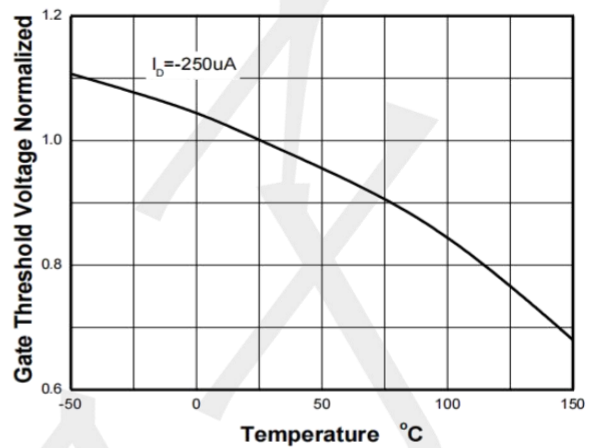
Notes:

1. Pulse test; pulse width ≤ 300 μS, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

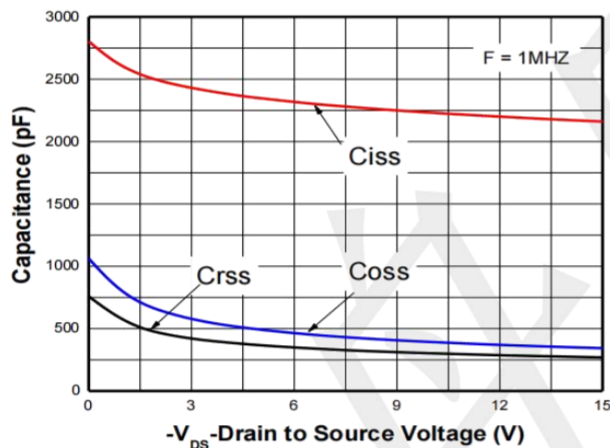
TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



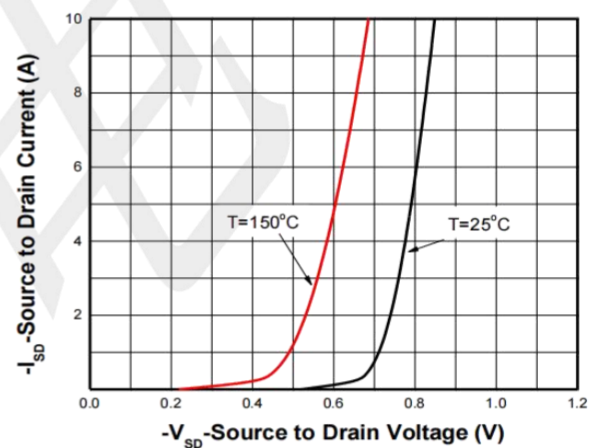
On-Resistance vs. Junction temperature



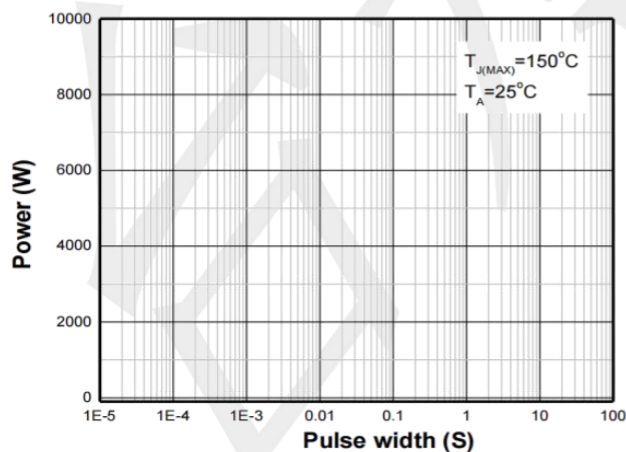
Threshold voltage vs. Temperature



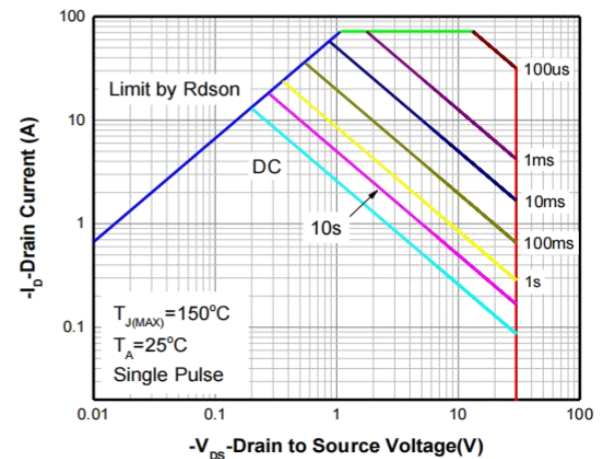
Capacitance



Body diode forward voltage

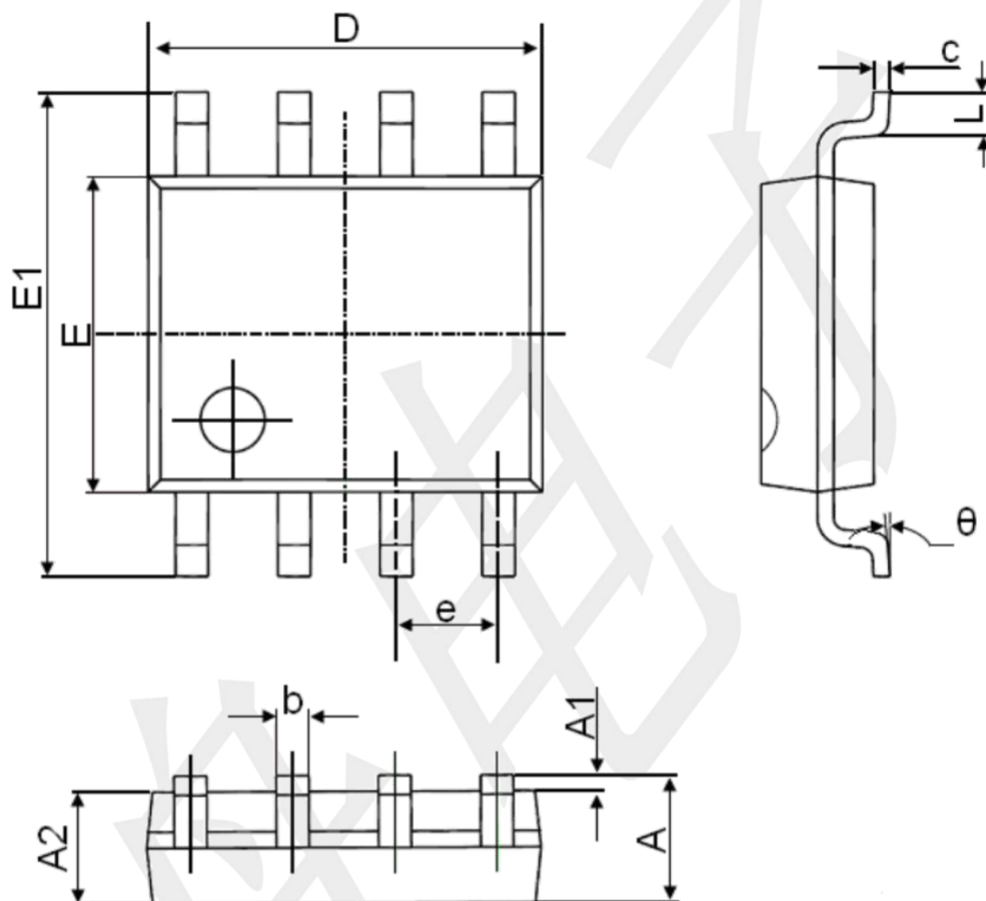


Single pulse power



Safe operating power

Package Information SOP8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	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	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	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°