

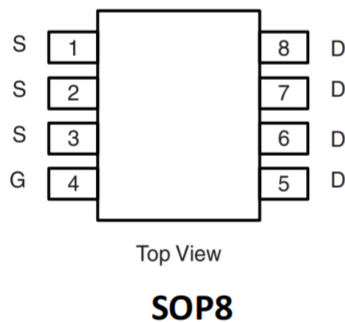
Product Summary

- V_{DS} -30 V
- I_{DS} -6A
- $R_{DS(ON)}$ (at $V_{GS} = -10V$) <40m Ω

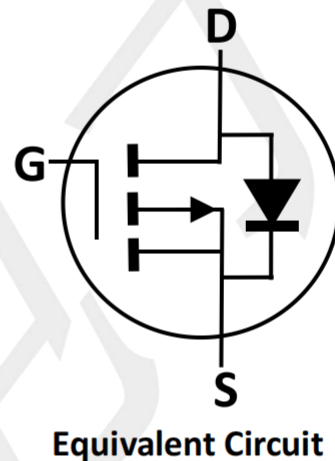
Application

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

Package and Pin Configuration



Circuit diagram



Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ 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	-6	A
Pulsed Drain Current (note1)	I_{DM}	-40	A
Maximum Power Dissipation	P_D	5	W
Operating Junction Temperature Range	T_J	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

Thermal Characteristic

PARAMETER	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient($t \leq 10s$)	$R_{\theta JA}$	50	$^\circ\text{C/W}$

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

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

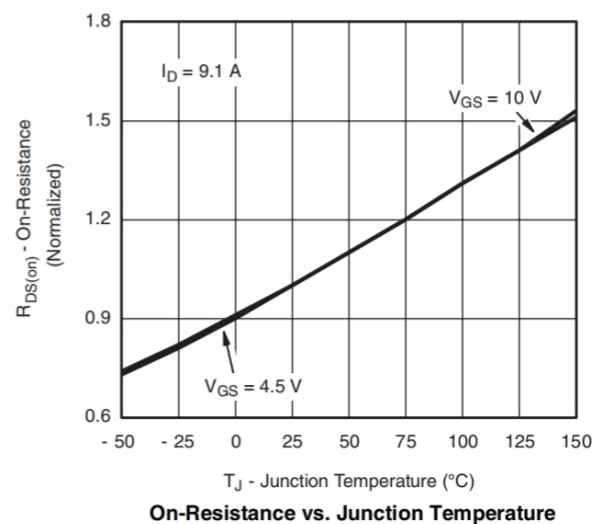
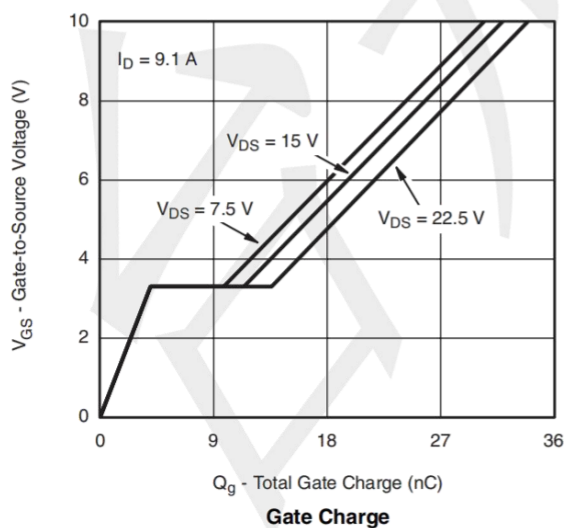
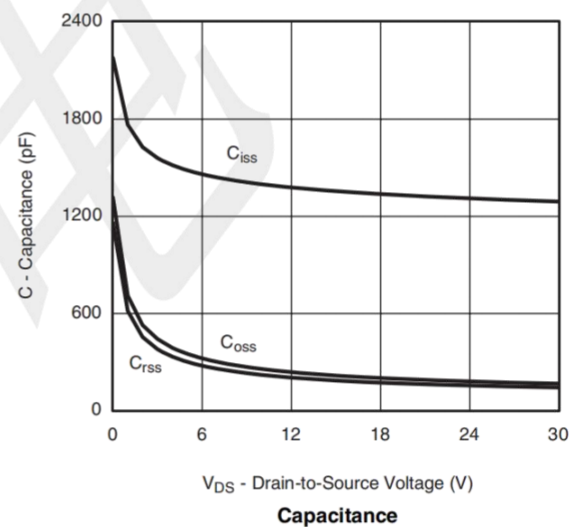
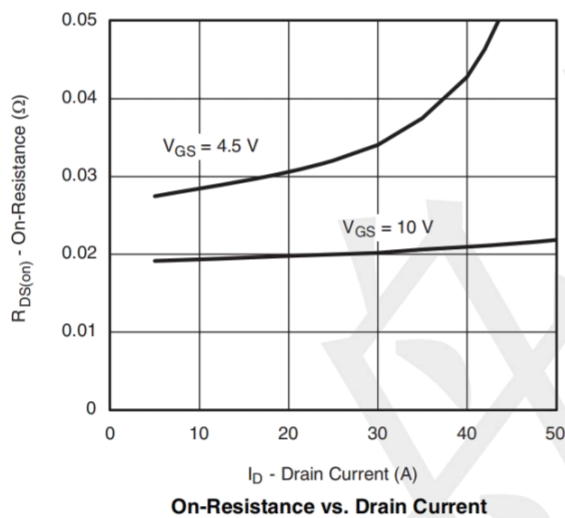
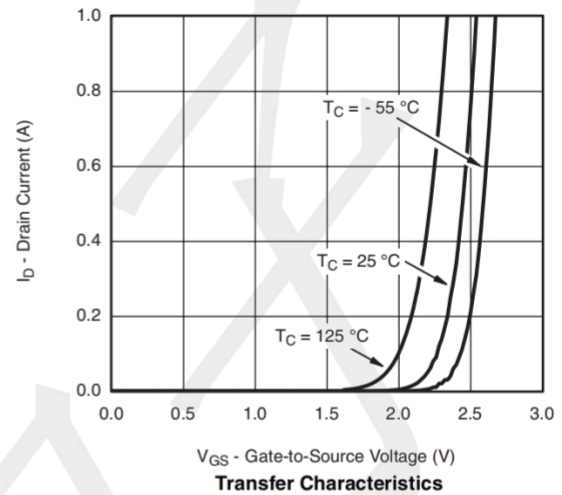
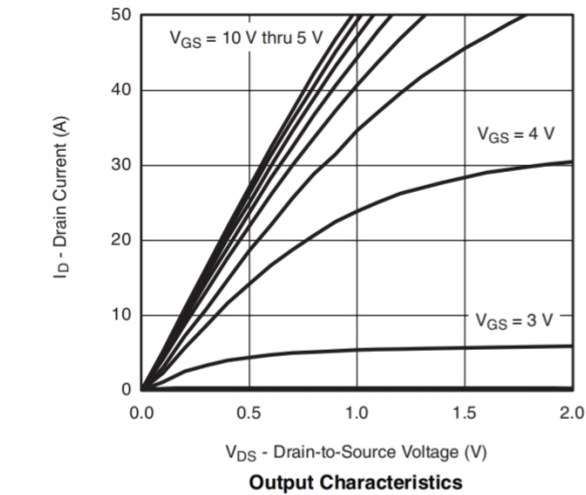
Electrical Characteristics (T_A=25 °C unless otherwise noted)

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	-1.5	-2.5	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±20V	I _{GSS}	--	--	±100	nA
Zero Gate Voltage Drain Current	V _{DS} = -30V, V _{GS} =0V	I _{DSS}	--	-0.1	-1	μA
	V _{DS} = -30V, T _J =125°C		--	-10	-50	μA
Drain-Source On-State Resistance (Note 1)	V _{GS} = -10V, I _D = -6A	R _{DS(on)}	--	28	40	mΩ
	V _{GS} = -4.5V, I _D = -4A		--	--	45	
Forward Transconductance (Note 2)	V _{DS} = -10V, I _D = -6A	g _{fs}	--	23	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	V _{DS} = -15V, I _D = -6A, V _{GS} = -10V	Q _g	--	15	--	nC
Gate-Source Charge (Note 3)		Q _{gs}	--	4	--	
Gate-Drain Charge (Note 3)		Q _{gd}	--	7.5	--	
Input Capacitance	V _{DS} = -15V, V _{GS} = 0V, F= 1.0MHz	C _{iss}	--	890	--	pF
Output Capacitance		C _{oss}	--	111	--	
Reverse Transfer Capacitance		C _{rss}	--	90	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DD} = -15V, I _D = -6A, V _{GS} = -10V, R _{GEN} = 1Ω	t _{d(on)}	--	10	--	nS
Rise Time (Note 3)		t _r	--	8	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	45	--	
Fall Time (Note 3)		t _f	--	12	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _{SD} = -6A	V _{SD}	--	-0.96	-1.5	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _S	--	--	-6	A
Pulsed Current (Note 1)		I _{SM}	--	--	-40	A

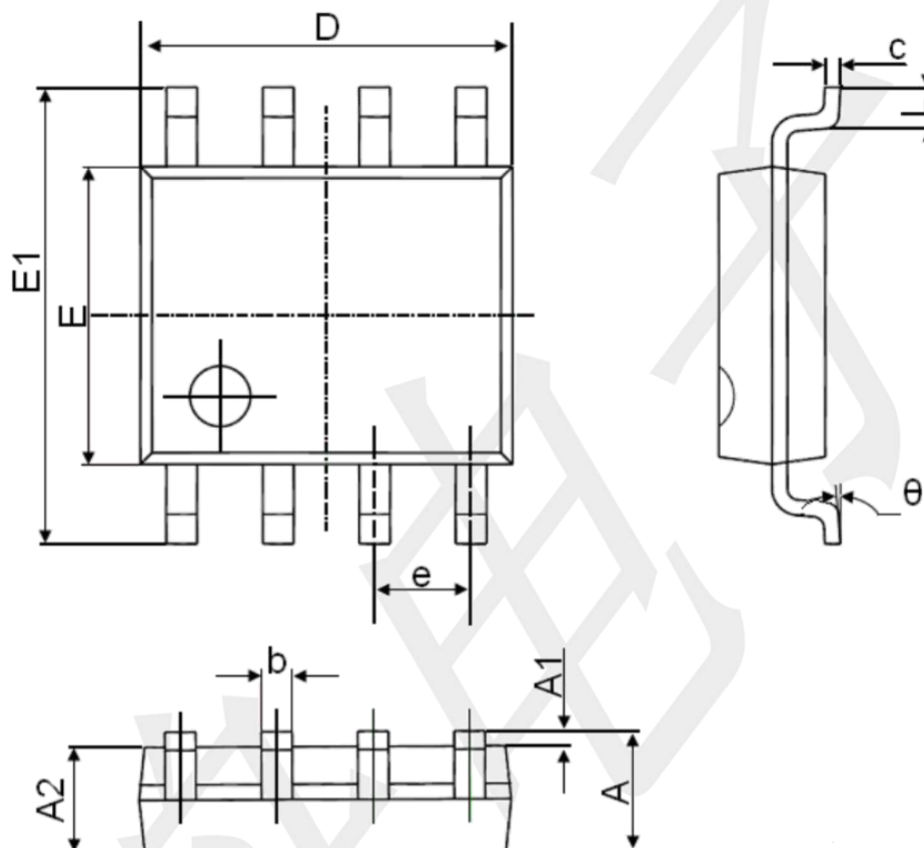
Notes:

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)



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°