

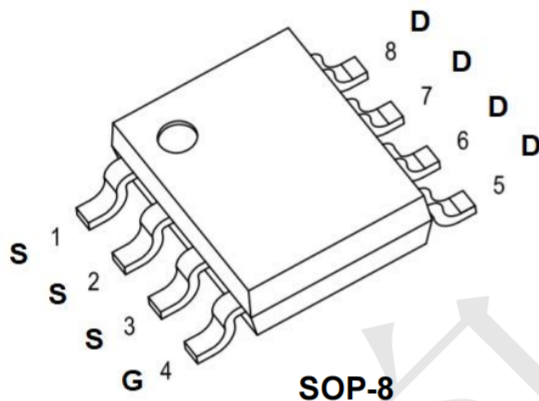
Product Summary

- V_{DS} 100 V
- I_{DS} (@ $V_{GS}=10V$) 6A
- $R_{DS(ON)}$ (@ $V_{GS}=10V$) < 40mΩ(Typ)

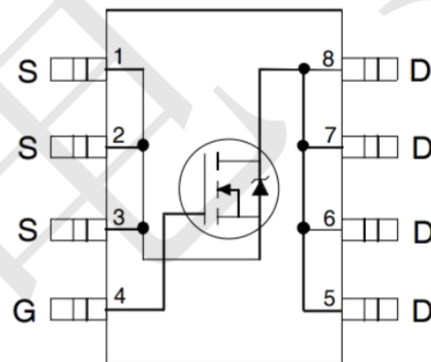
Application

- LED Backlighting
- Synchronous Rectifiers for SMPS
- 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}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current $T_A=25^{\circ}\text{C}$	I_D	6	A
Continuous Drain Current $T_A=100^{\circ}\text{C}$	I_D	3.6	A
Pulsed Drain Current (note1)	I_{DM}	30	A
Single Pulse Avalanche Energy $L=8.7\text{mH}$, $I_{AS}=6\text{A}$	EAS	156	mJ
Maximum Power Dissipation $T_A=25^{\circ}\text{C}$	P_D	2.5	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 Junction-ambient	$R_{\theta JA}$	50	$^{\circ}\text{C/W}$
Thermal Resistance Junction-Case	$R_{\theta JC}$	25	$^{\circ}\text{C/W}$

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

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

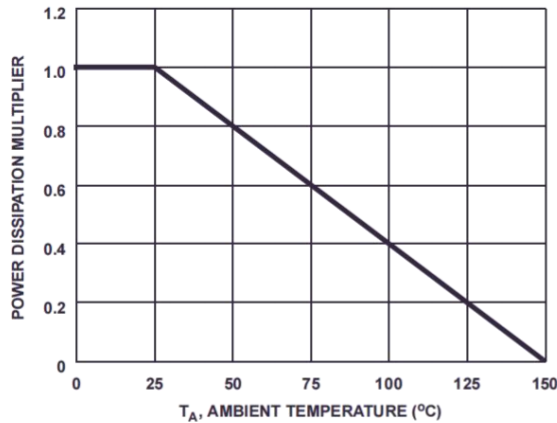
Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	100	--	--	V
Gate-Source Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	2	3	4	V
Gate-Source Leakage	$V_{DS}=0V, V_{GS}=\pm 20V$	I_{GSS}	--	--	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS}=100V, V_{GS}=0V$	I_{DSS}	--	--	1	μA
	$V_{DS}=100V, T_J=55^{\circ}C$		--	--	10	μA
Drain-Source On-State Resistance (Note 1)	$V_{GS}=10V, I_D=1A$	$R_{DS(on)}$	--	40	50	m Ω
Forward Transconductance (Note 2)	$V_{DS}=5V, I_D=2A$	g_{fs}	--	25	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	$V_{DS}=50V,$ $I_D=6A,$ $V_{GS}=10V$	Q_g	--	19	--	nC
Gate-Source Charge (Note 3)		Q_{gs}	--	6.0	--	
Gate-Drain Charge (Note 3)		Q_{gd}	--	4.5	--	
Input Capacitance	$V_{DS}=25V,$ $V_{GS}=0V,$ $F=1.0MHz$	C_{iss}	--	1300	--	pF
Output Capacitance		C_{oss}	--	190	--	
Reverse Transfer Capacitance		C_{rss}	--	46	--	
Switching						
Turn-On Delay Time (Note 3)	$V_{DD}=50V,$ $I_D=1A,$ $V_{GS}=10V,$ $R_G=16\Omega$	$t_{d(on)}$	--	65	--	nS
Rise Time (Note 3)		t_r	--	35	--	
Turn-Off Delay Time (Note 3)		$t_{d(off)}$	--	34	--	
Fall Time (Note 3)		t_f	--	37	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	$V_{GS}=0V, I_{SD}=1A$	V_{SD}	--	0.8	1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I_S	--	--	6	A
Pulsed Current (Note 1)		I_{SM}	--	--	30	A

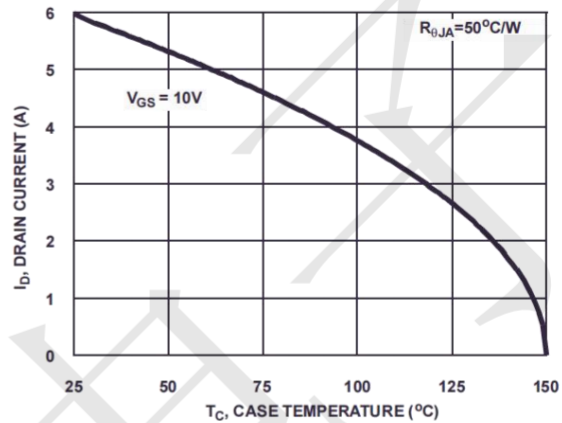
Notes:

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

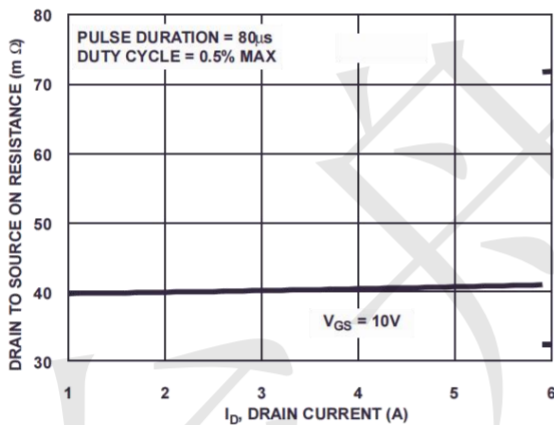
TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



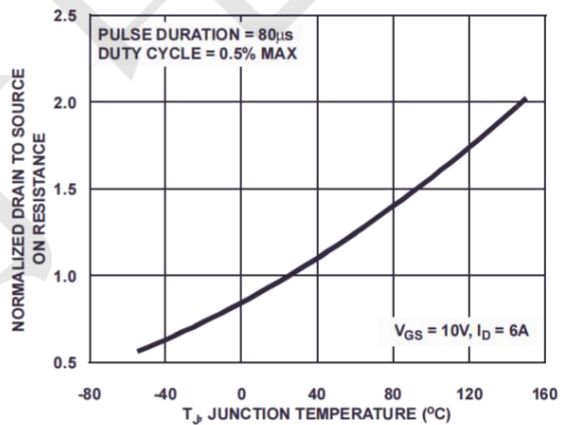
Normalized Power Dissipation vs Ambient Temperature



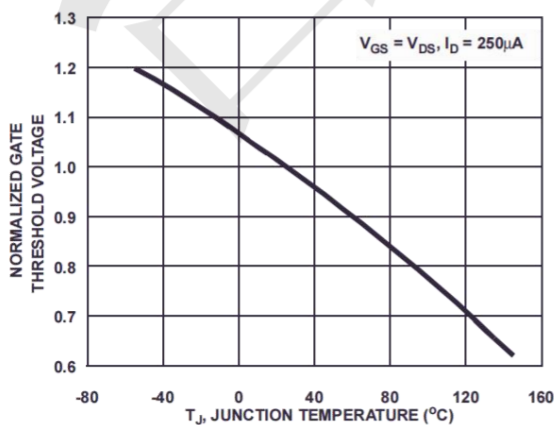
Maximum Continuous Drain Current vs Case Temperature



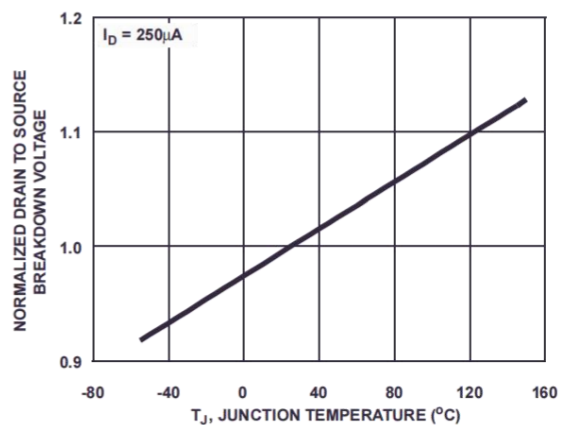
Drain to Source On Resistance vs Drain Current



Normalized Drain to Source On Resistance vs Junction Temperature



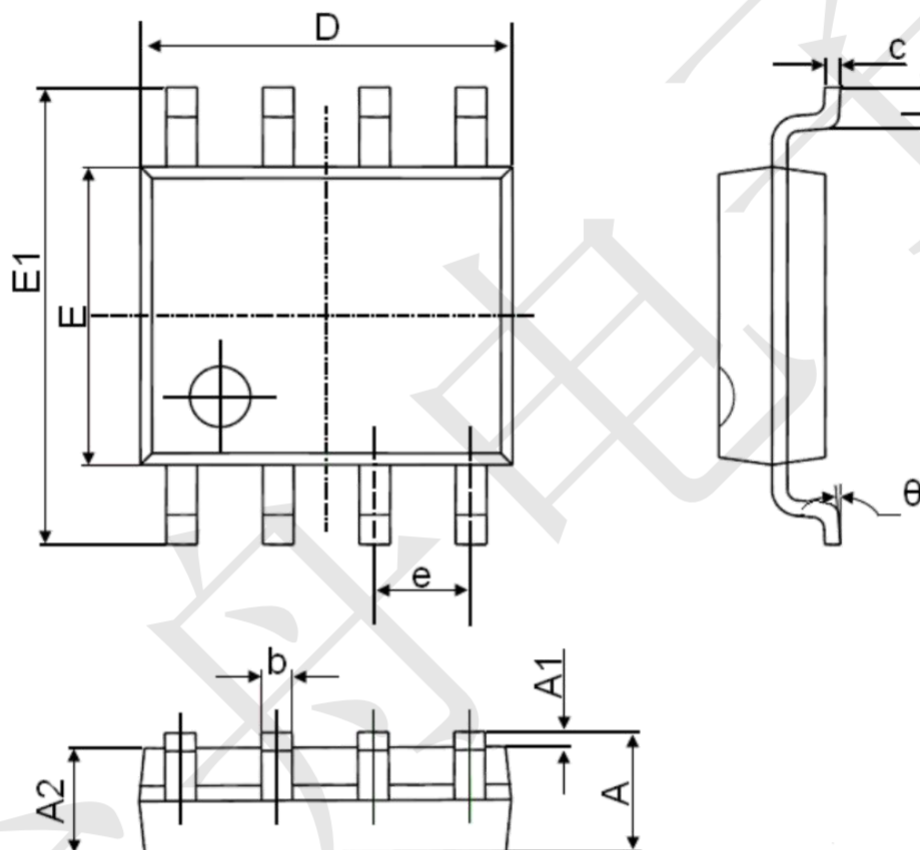
Normalized Gate Threshold Voltage vs Junction Temperature



Normalized Drain to Source Breakdown Voltage vs Junction Temperature

Package Information

SOP-8



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°