

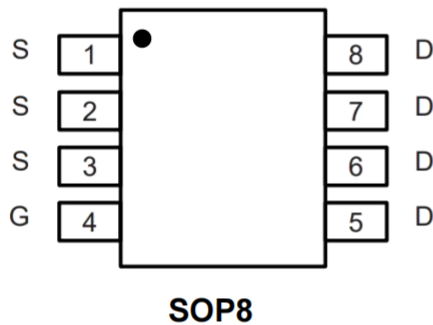
Product Summary

- V_{DS} 100 V
- I_{DS} (@ $V_{GS}=10V$) 3A
- $R_{DS(ON)}$ (@ $V_{GS}=10V$) $\leq 88m\Omega$ (Typ)

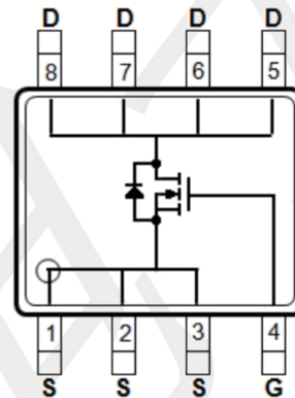
Application

- LED Backlighting
- Synchronous Rectifiers for SMPS
- Power management
- PWM Application

Package and Pin Configuration



Circuit diagram



Absolute Maximum Ratings (T_A=25°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	I_D	3.0	A
Continuous Drain Current	I_D	2.2	A
Pulsed Drain Current (note1)	I_{DM}	12	A
Maximum Power Dissipation, T _A =25°C	P_D	3.5	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 Junction-ambient	$R_{\theta JA}$	70	°C/W
Thermal Resistance Junction-Case	$R_{\theta JC}$	36	°C/W

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

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

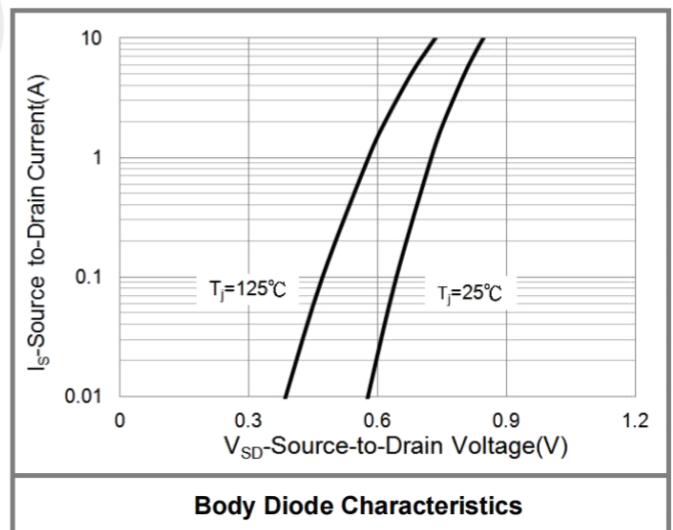
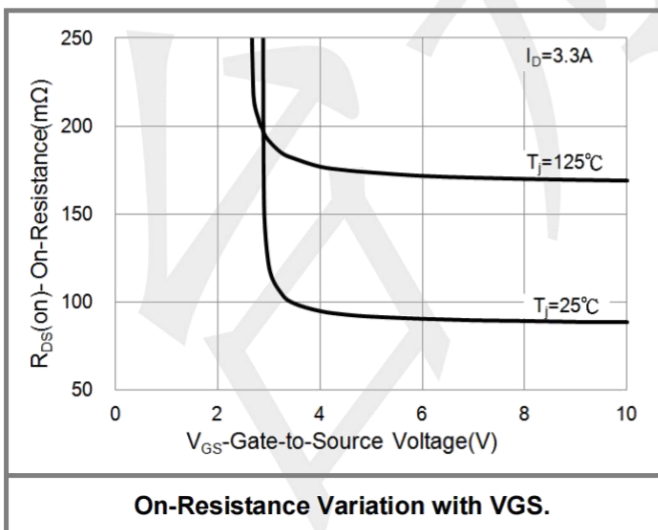
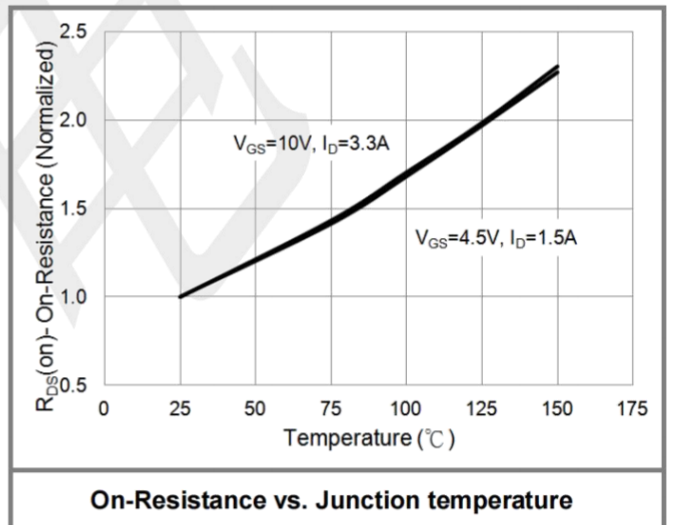
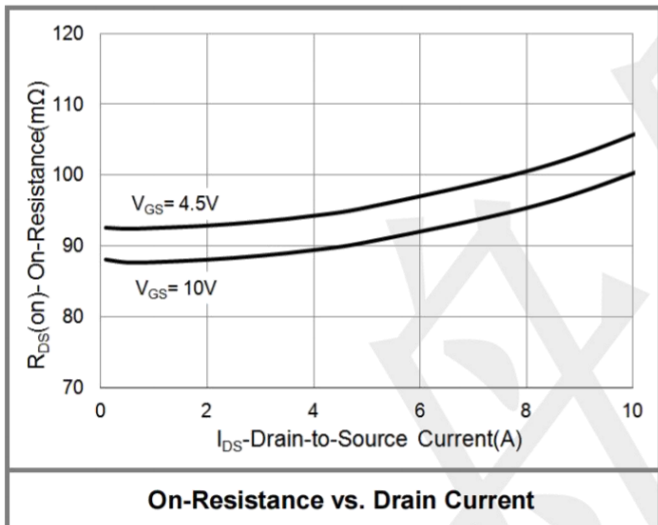
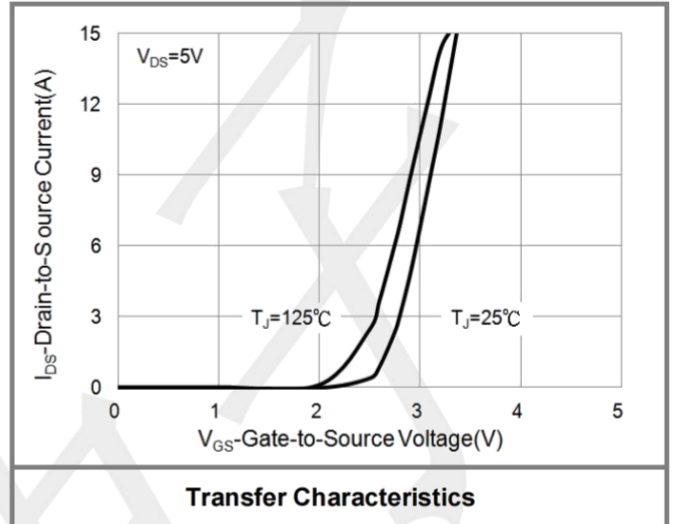
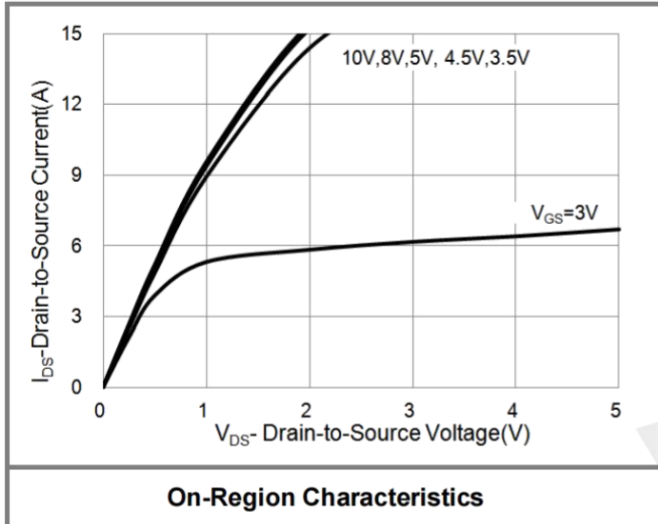
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	$V_{GS}=0\text{V}, I_D=250\mu\text{A}$	BV_{DSS}	100	--	--	V
Gate-Source Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	$V_{GS(th)}$	1.0	1.5	2.5	V
Gate-Source Leakage	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$	I_{GSS}	--	--	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS}=100\text{V}, V_{GS}=0\text{V}$	I_{DSS}	--	--	1	μA
	$V_{DS}=100\text{V}, T_J=85^\circ\text{C}$		--	--	30	μA
Drain-Source On-State Resistance (Note 1)	$V_{GS}=10\text{V}, I_D=3\text{A}$	$R_{DS(on)}$	--	88	115	m Ω
	$V_{GS}=4.5\text{V}, I_D=2\text{A}$		--	100	140	
Forward Transconductance (Note 2)	$V_{DS}=5\text{V}, I_D=2\text{A}$	g_{fs}	--	28	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	$V_{DS}=50\text{V},$ $I_D=2\text{A},$ $V_{GS}=10\text{V}$	Q_g	--	12	--	nC
Gate-Source Charge (Note 3)		Q_{gs}	--	2.2	--	
Gate-Drain Charge (Note 3)		Q_{gd}	--	2.5	--	
Input Capacitance	$V_{DS}=25\text{V},$ $V_{GS}=0\text{V},$ $F=1.0\text{MHz}$	C_{iss}	--	610	--	pF
Output Capacitance		C_{oss}	--	40	--	
Reverse Transfer Capacitance		C_{rss}	--	25	--	
Switching						
Turn-On Delay Time (Note 3)	$V_{DD}=50\text{V},$ $I_D=3\text{A},$ $V_{GS}=10\text{V},$ $R_G=1.8\Omega.$	$t_{d(on)}$	--	7	--	nS
Rise Time (Note 3)		t_r	--	5	--	
Turn-Off Delay Time (Note 3)		$t_{d(off)}$	--	16	--	
Fall Time (Note 3)		t_f	--	6	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	$V_{GS}=0\text{V}, I_{SD}=3\text{A}$	V_{SD}	--	0.8	1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I_S	--	--	3	A
Pulsed Current (Note 1)		I_{SM}	--	--	12	A

Notes:

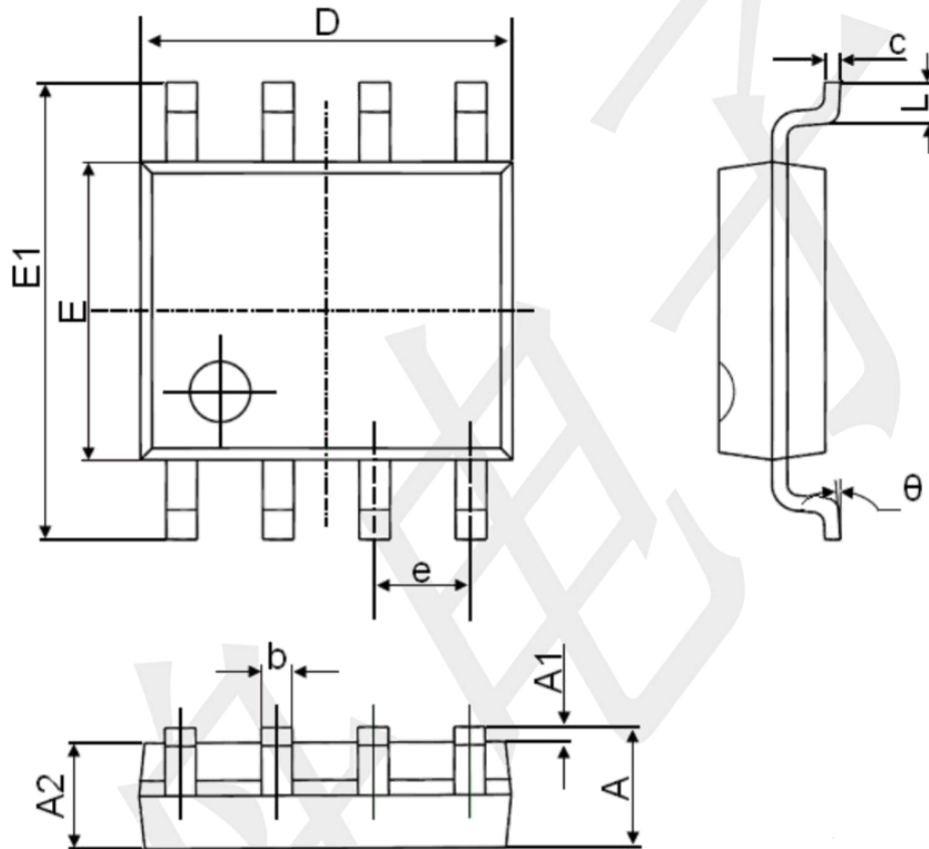
1. Pulse test; pulse width $\leq 300\mu\text{S}$, duty cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

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°