

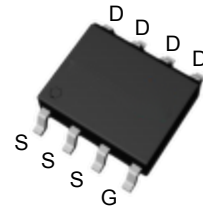
Features

- 150V/2A,
 $R_{DS(ON)} = 240m\Omega$ (typ.) @ $V_{GS}=10V$
 $R_{DS(ON)} = 265m\Omega$ (typ.) @ $V_{GS}=4.5V$
- 100% UIS + R_g Tested
- Reliable and Rugged
- Lead Free and Green Devices Available
(RoHS Compliant)

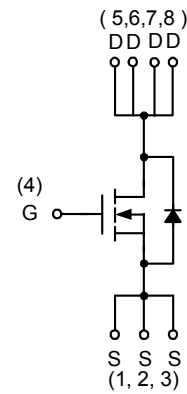
Applications

- DC-DC converter switching for Networking
- General purpose switching

Pin Description



Top View of SOP-8



N-Channel MOSFET

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter		Rating	Unit
Common Ratings				
V _{DSS}	Drain-Source Voltage		150	V
V _{GSS}	Gate-Source Voltage		±20	
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	
I _S	Diode Continuous Forward Current	T _A =25°C	2	A
I _D ^b	Continuous Drain Current	T _A =25°C	2	A
		T _A =70°C	1.5	
I _{DM} ^a	Pulsed Drain Current	T _A =25°C	6	A
P _D ^b	Maximum Power Dissipation	T _A =25°C	1.47	W
		T _A =70°C	0.94	
R _{θJA} ^b	Thermal Resistance-Junction to Ambient	Steady State	85	°C/W
I _{AS} ^c	Avalanche Current, Single pulse	L=0.5mH	3	A
E _{AS} ^c	Avalanche Energy, Single pulse	L=0.5mH	2.25	mJ

Note a : Pulse width limited by max. junction temperature.

Note b : Surface Mounted on 1in^2 pad area.

Note c : UIS tested and pulse width limited by maximum junction temperature 150°C (initial temperature $T_J=25^\circ\text{C}$)

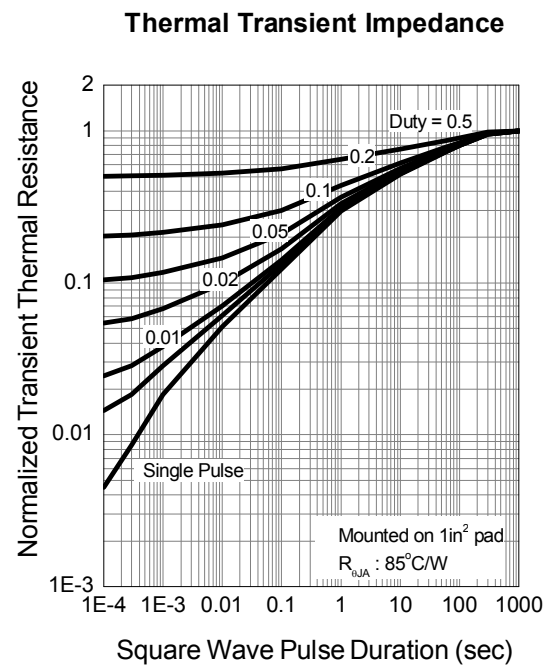
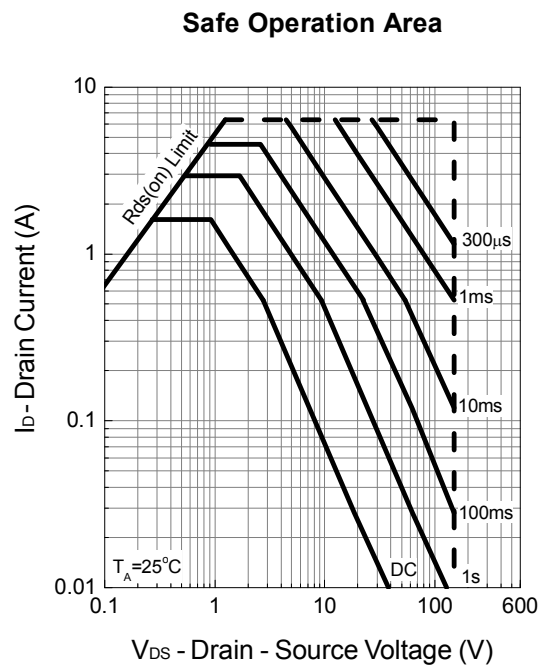
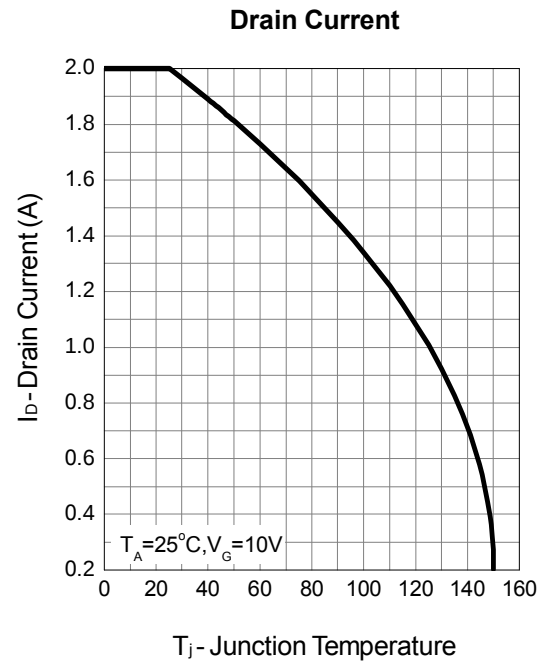
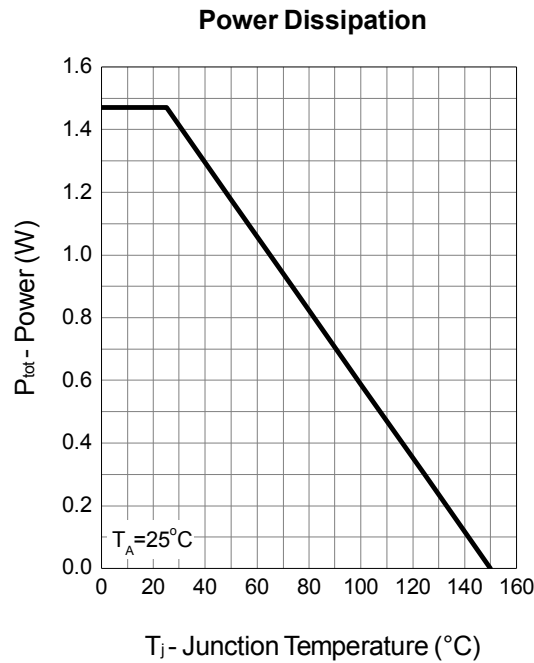
Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	150	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =120V, V _{GS} =0V	-	-	1	μA
		T _J =85°C	-	-	30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	1	2	3	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^d	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =2A	-	240	270	mΩ
		V _{GS} =4.5V, I _{DS} =1.5A	-	265	300	mΩ
Diode Characteristics						
V _{SD} ^d	Diode Forward Voltage	I _{SD} =2A, V _{GS} =0V	-	0.8	1.3	V
t _{rr}	Reverse Recovery Time	I _{SD} =2A, dI _{SD} /dt=100A/μs	-	38	-	ns
Q _{rr}	Reverse Recovery Charge		-	68	-	nC
Dynamic Characteristics ^e						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz	-	3	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =30V, Frequency=1.0MHz	-	350	755	pF
C _{oss}	Output Capacitance		-	85	-	
C _{rss}	Reverse Transfer Capacitance		-	16	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =30V, R _L =30Ω, I _{DS} =1A, V _{GEN} =10V, R _G =6Ω	-	11	20	ns
t _r	Turn-on Rise Time		-	6	11	
t _{d(OFF)}	Turn-off Delay Time		-	24	44	
t _f	Turn-off Fall Time		-	6	11	
Gate Charge Characteristics ^e						
Q _g	Total Gate Charge	V _{DS} =75V, V _{GS} =4.5V, I _{DS} =2A	-	6.3	-	nC
Q _g	Total Gate Charge	V _{DS} =75V, V _{GS} =10V, I _{DS} =2A	-	13.2	18.5	
Q _{gs}	Gate-Source Charge		-	2.4	-	
Q _{gd}	Gate-Drain Charge		-	1.9	-	

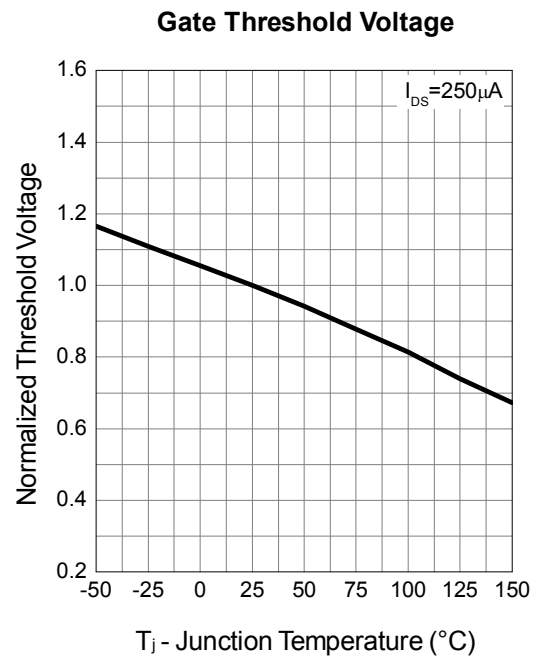
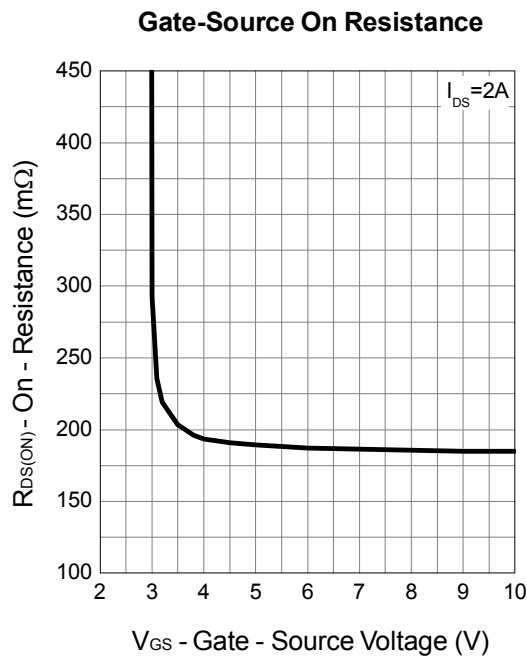
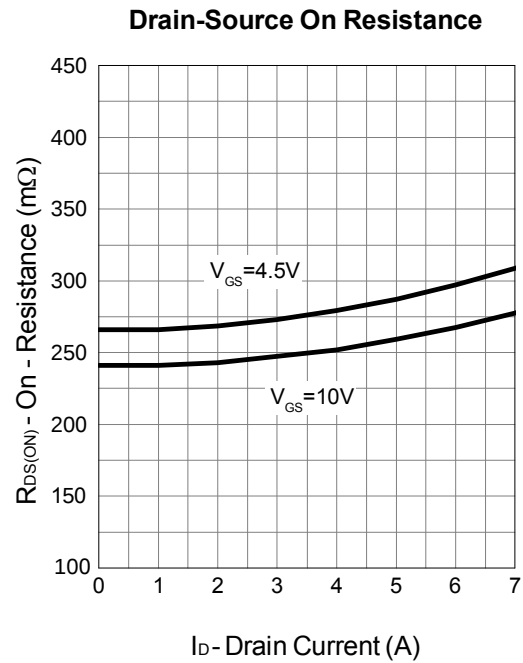
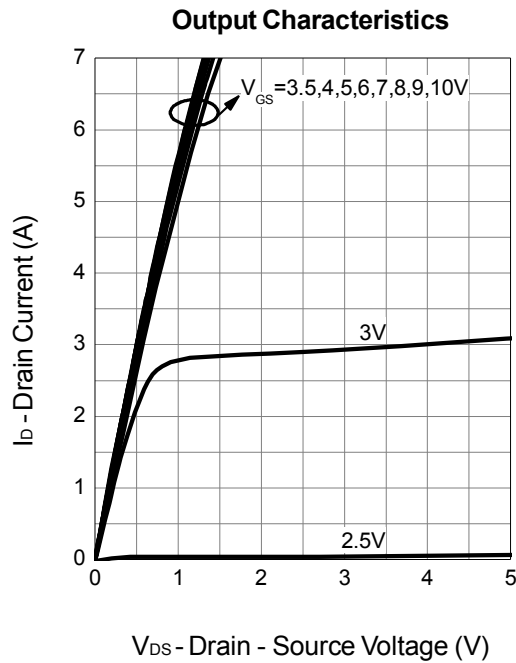
Note d : Pulse test ; pulse width≤300μs, duty cycle≤2%.

Note e : Guaranteed by design, not subject to production testing.

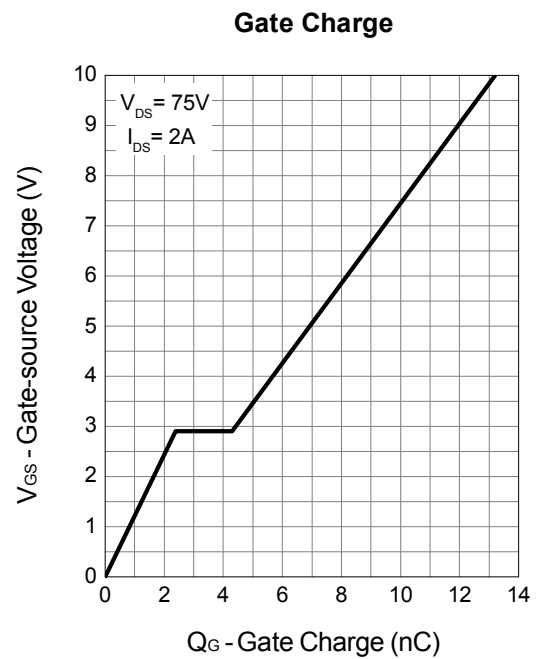
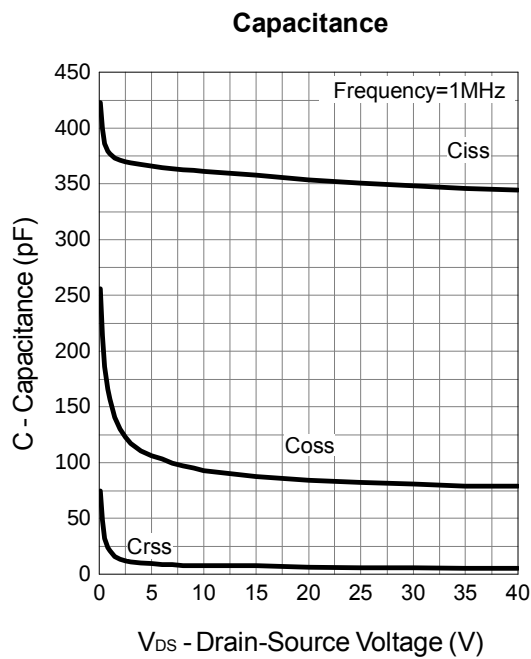
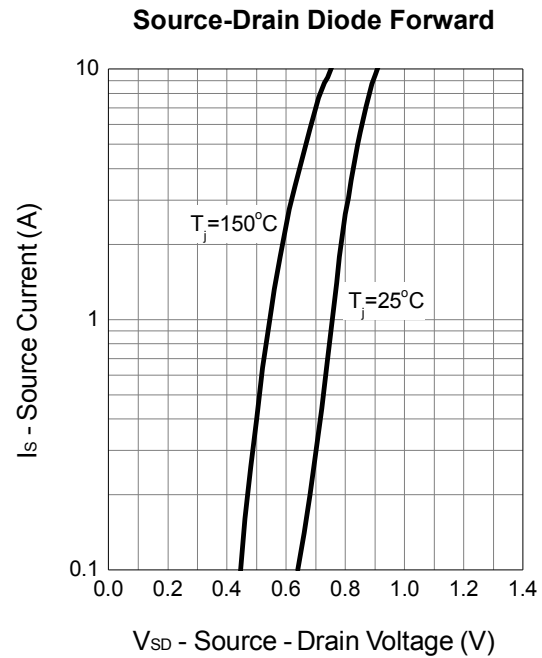
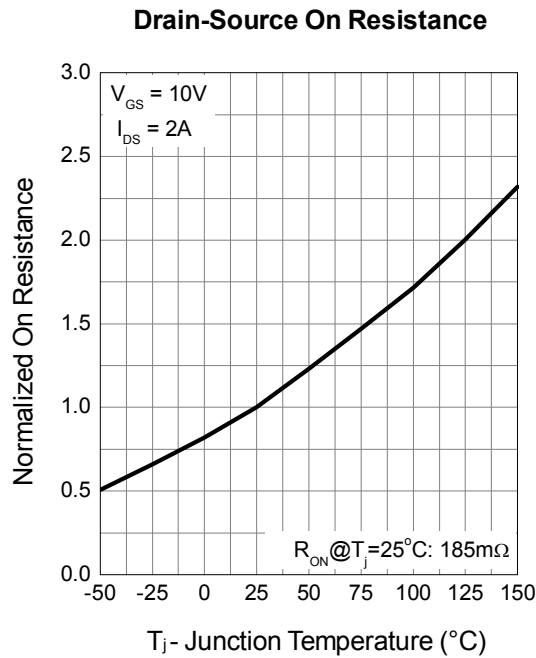
Typical Operating Characteristics



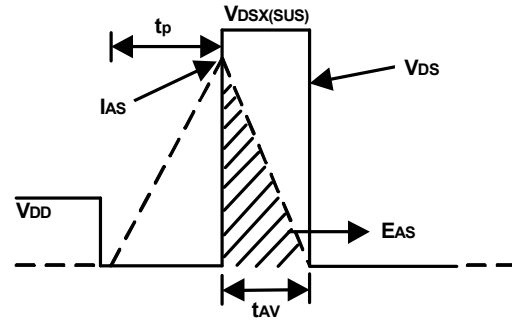
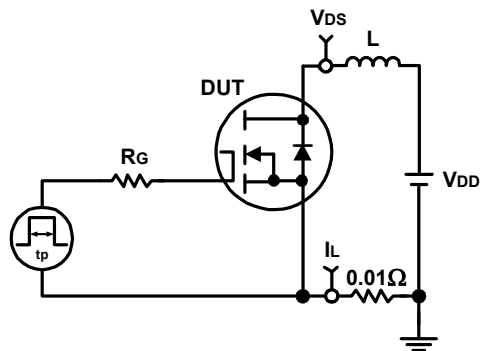
Typical Operating Characteristics (Cont.)



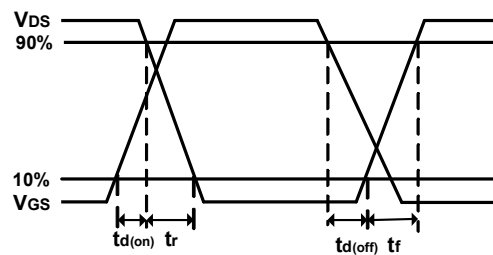
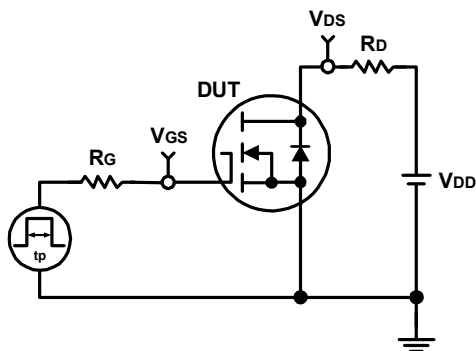
Typical Operating Characteristics (Cont.)



Avalanche Test Circuit and Waveforms

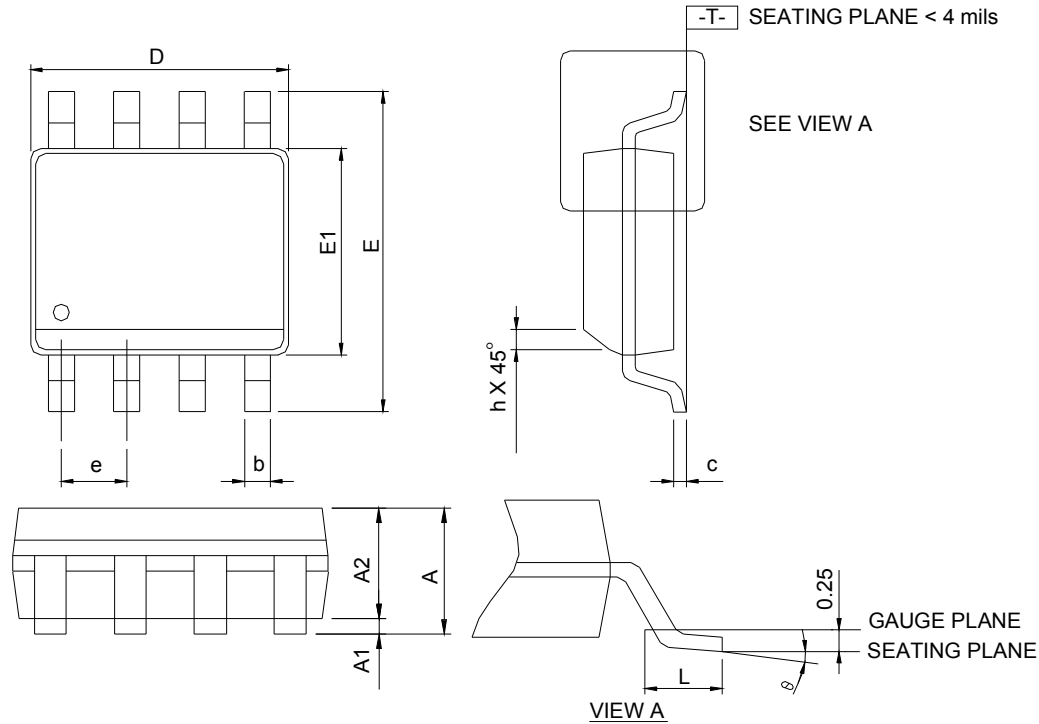


Switching Time Test Circuit and Waveforms



Package Information

SOP-8



SOP-8	SOP-8			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	-	1.75	-	0.069
A1	0.10	0.25	0.004	0.010
A2	1.25	-	0.049	-
b	0.31	0.51	0.012	0.020
c	0.17	0.25	0.007	0.010
D	4.80	5.00	0.189	0.197
E	5.80	6.20	0.228	0.244
E1	3.80	4.00	0.150	0.157
e	1.27 BSC		0.050 BSC	
h	0.25	0.50	0.010	0.020
L	0.40	1.27	0.016	0.050
θ	0°	8°	0°	8°

Note: 1. Follow JEDEC MS-012 AA.

- Dimension "D" does not include mold flash, protrusions or gate burrs. Mold flash, protrusion or gate burrs shall not exceed 6 mil per side.
- Dimension "E" does not include inter-lead flash or protrusions. Inter-lead flash and protrusions shall not exceed 10 mil per side.

RECOMMENDED LAND PATTERN

