

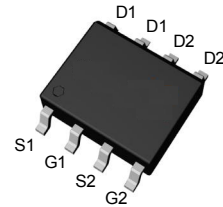
Features

- 30V/8A,
 $R_{DS(ON)} = 19m\Omega(max.) @ V_{GS} = 10V$
 $R_{DS(ON)} = 25m\Omega(max.) @ V_{GS} = 4.5V$
- 100% UIS + R_g Tested
- Reliable and Rugged
- Lead Free and Green Devices Available
(RoHS Compliant)

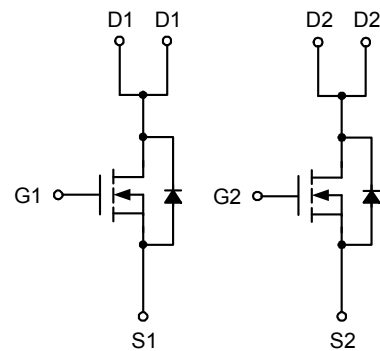
Applications

- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems.

Pin Description



Top View of SOP8



N-Channel MOSFET

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

Symbol	Parameter		Rating	Unit
V _{DSS}	Drain-Source Voltage		30	V
V _{GSS}	Gate-Source Voltage		±20	
I _D ^a	Continuous Drain Current (V _{GS} =10V)	T _A =25°C	8	A
		T _A =70°C	6.5	
I _{DM} ^a	300μs Pulsed Drain Current (V _{GS} =10V)		40	
I _S ^a	Diode Continuous Forward Current		1	
I _{AS} ^b	Avalanche Current (Single Pulse)		9	
E _{AS} ^b	Avalanche Energy, Single Pulse (L=0.5mH)		20	mJ
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	
P _D ^a	Maximum Power Dissipation	T _A =25°C	1.7	W
		T _A =70°C	1.08	
R _{θJA} ^a	Thermal Resistance-Junction to Ambient	t ≤ 10s	48	°C/W
		Steady State	74	
R _{θJL}	Thermal Resistance-Junction to Lead	Steady State	32	

Note a : Surface Mounted on 1in^2 pad area, $t \leq 10\text{sec}$. Maximum Power dissipation is calculated from $R_{\theta JA}$ (worst) = 62.5°C/W under $t \leq 10\text{s}$.

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

Electrical Characteristics ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Test Conditions				Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =24V, V _{GS} =0V	-	-	1	μA
		T _J =85°C	-	-	30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	1.3	1.9	2.5	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^a	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =8A	-	16.5	19	mΩ
		V _{GS} =4.5V, I _{DS} =8A	-	21	25	
G _{fs}	Forward Transconductance	V _{DS} =5V, I _{DS} =8A	-	32	-	S
Diode Characteristics						
V _{SD} ^a	Diode Forward Voltage	I _{SD} =1A, V _{GS} =0V	-	0.7	1.1	V
t _{rr} ^b	Reverse Recovery Time	I _{SD} =8A, dI _{SD} /dt=100A/μs	-	15.5	-	ns
Q _{rr} ^b	Reverse Recovery Charge		-	6.5	-	nC

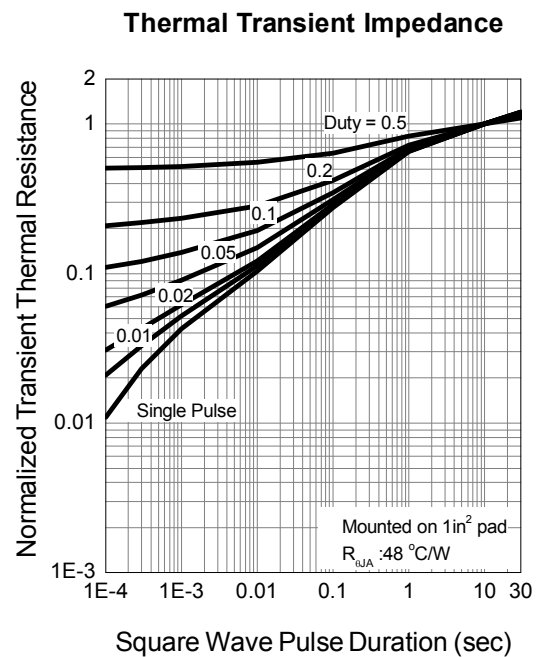
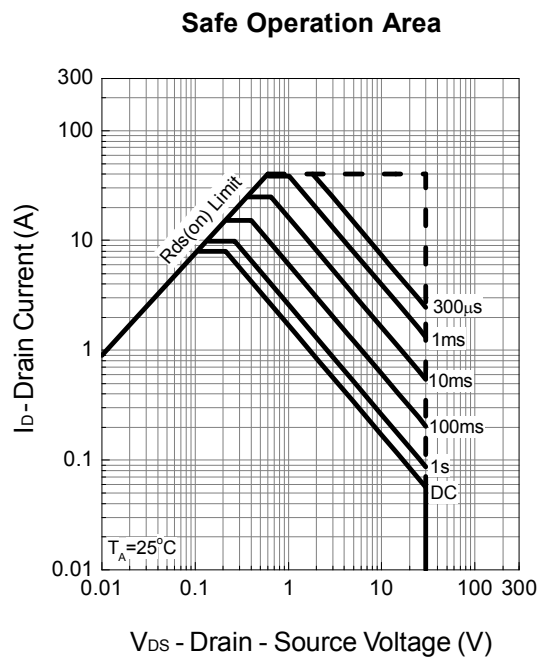
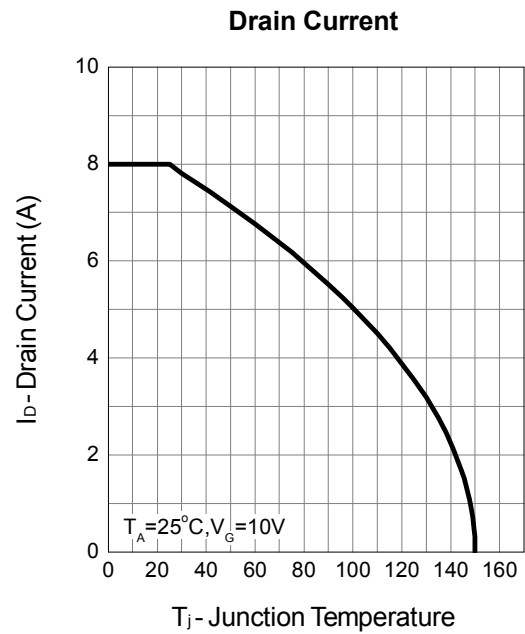
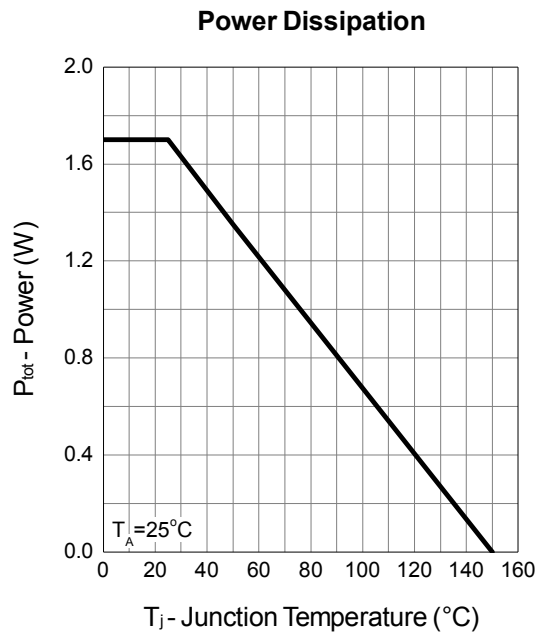
Electrical Characteristics (Cont.) ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Test Conditions				Unit
			Min.	Typ.	Max.	
Dynamic Characteristics ^b						
R _G	Gate Resistance	V _{GS} =0V,V _{DS} =0V,F=1MHz	1.3	1.7	2.3	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =15V, Frequency=1.0MHz	-	580	-	pF
C _{oss}	Output Capacitance		-	95	-	
C _{rss}	Reverse Transfer Capacitance		-	57	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =15V, R _L =15Ω, I _{DS} =1A, V _{GEN} =10V, R _G =6Ω	-	5.9	10	ns
t _r	Turn-on Rise Time		-	10	17	
t _{d(OFF)}	Turn-off Delay Time		-	17	35	
t _f	Turn-off Fall Time		-	4	9	
Gate Charge Characteristics ^b						
Q _g	Total Gate Charge	V _{DS} =15V, V _{GS} =10V, I _{DS} =8A	-	10.2	14	nC
	Total Gate Charge		-	5.3	7.5	
Q _{gth}	Threshold Gate Charge	V _{DS} =15V, V _{GS} =4.5V, I _{DS} =8A	-	0.78	-	
Q _{gs}	Gate-Source Charge		-	1.7	-	
Q _{gd}	Gate-Drain Charge		-	2.2	-	

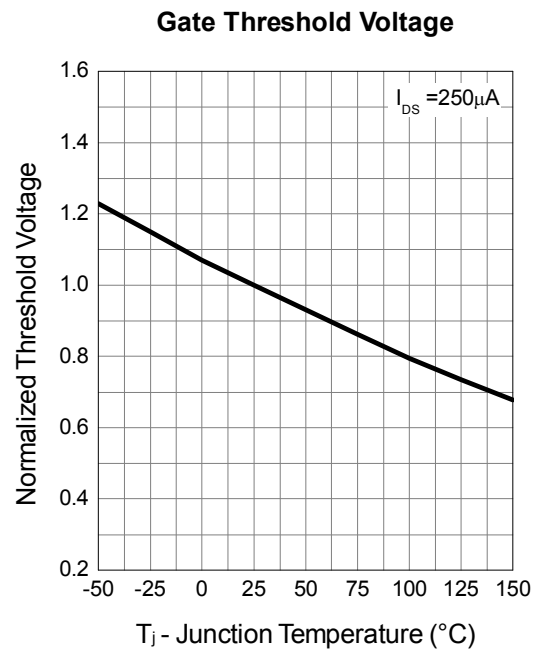
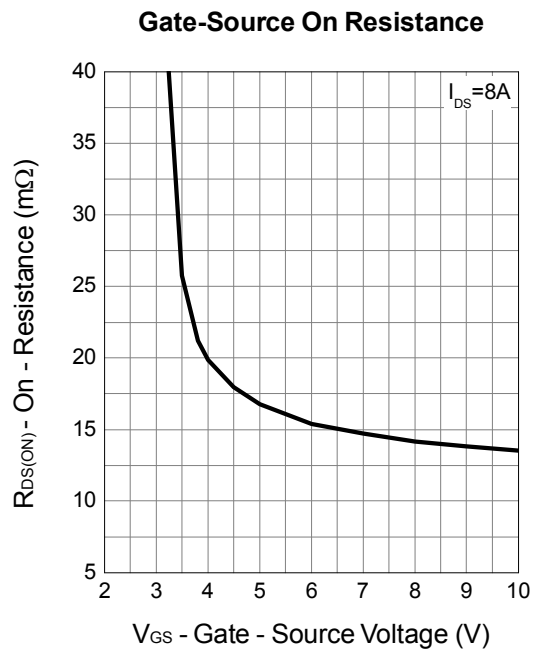
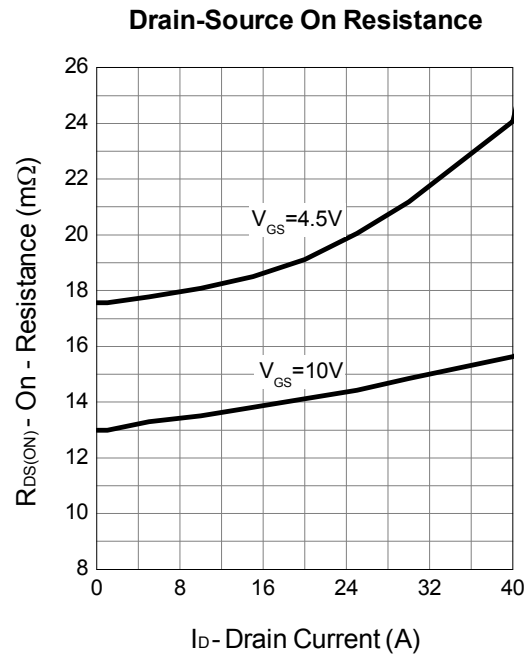
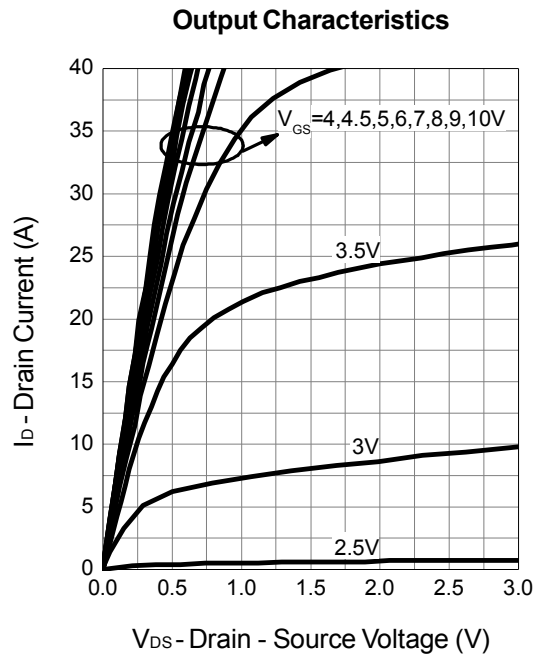
Note a : Pulse test ; pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.

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

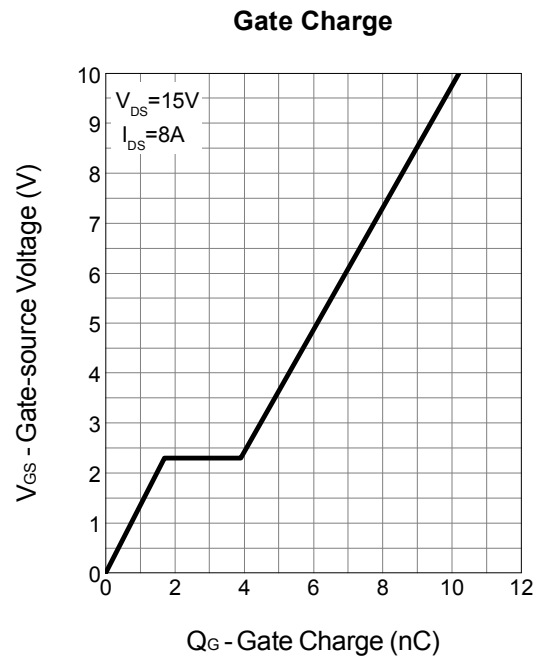
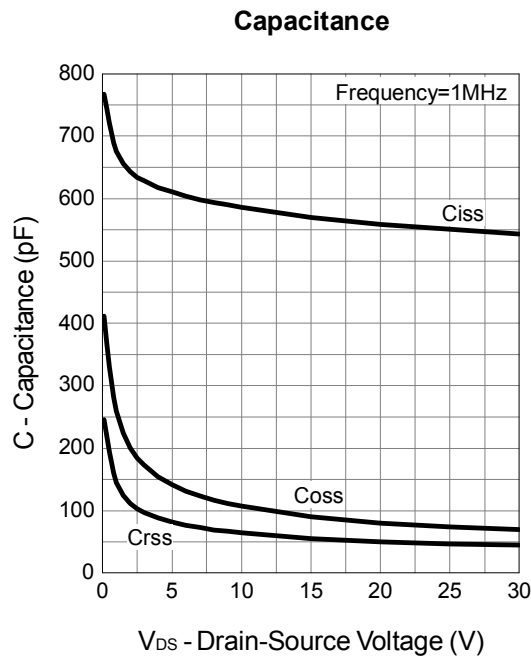
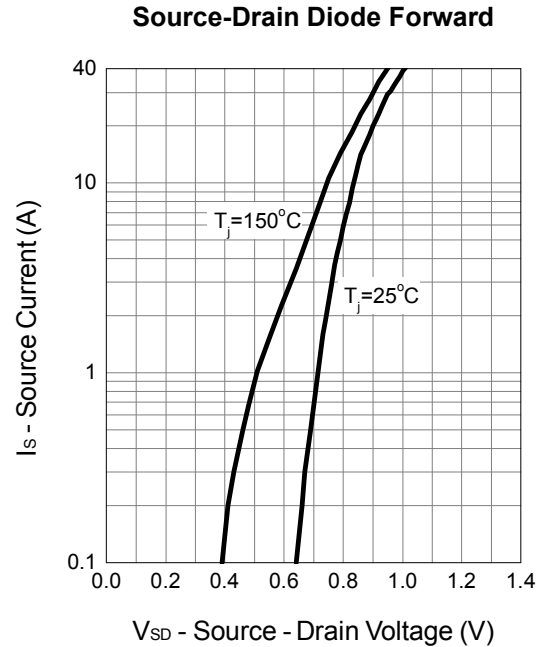
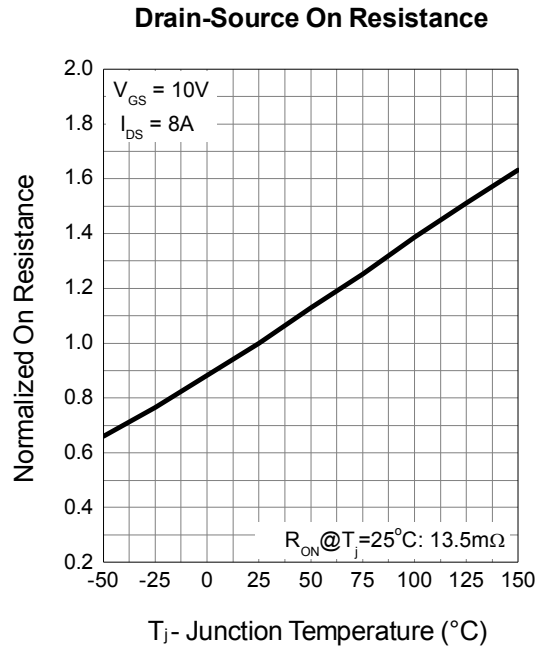
Typical Operating Characteristics



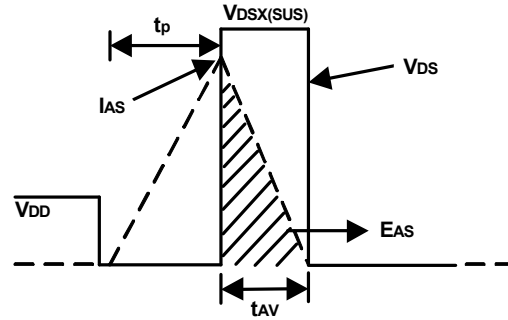
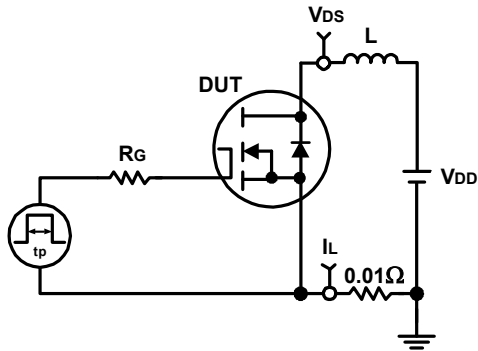
Typical Operating Characteristics (Cont.)



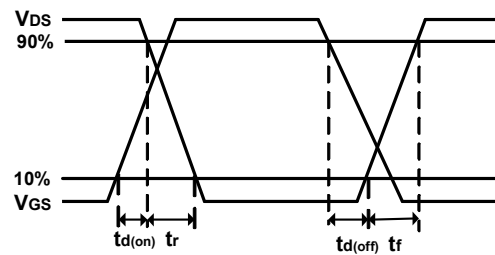
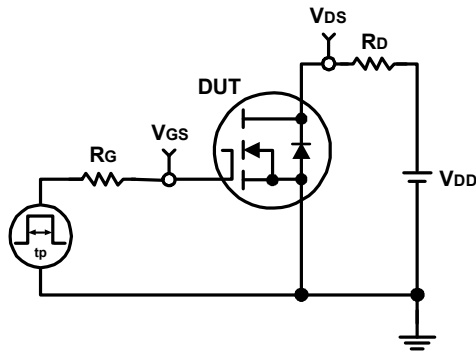
Typical Operating Characteristics (Cont.)



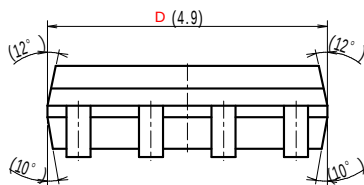
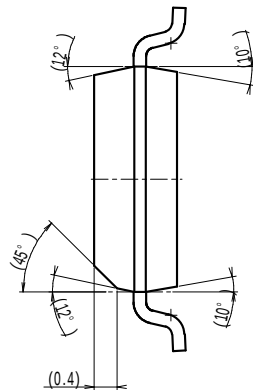
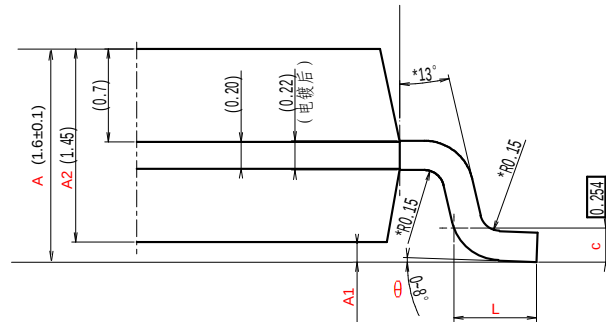
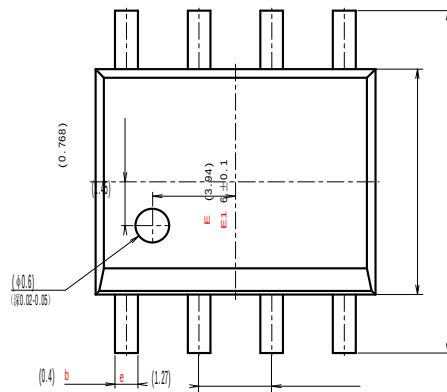
Avalanche Test Circuit and Waveforms



Switching Time Test Circuit and Waveforms



SOP8 PACKAGE OUTLINE



字符	Dimension millimeters		
	Min	Standard	Max
A	1.500	1.600	1.700
A1	0.040	0.080	0.150
A2	1.350	1.450	1.550
b	0.300	0.400	0.500
c	0.220	0.254	0.280
D	4.800	4.900	5.000
E	3.840	3.940	4.040
E1	5.900	6.000	6.100
e		1.27 (BSC)	
L	0.400	0.550	0.700
θ	0°		8°