

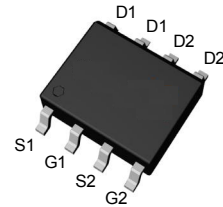
Features

- 30V/8A,
 $R_{DS(ON)} = 18m\Omega(\text{typ.}) @ V_{GS} = 10V$
 $R_{DS(ON)} = 23m\Omega(\text{typ.}) @ V_{GS} = 4.5V$
- 100% UIS + R_g Tested
- Reliable and Rugged
- Lead Free and Green Devices Available
(RoHS Compliant)

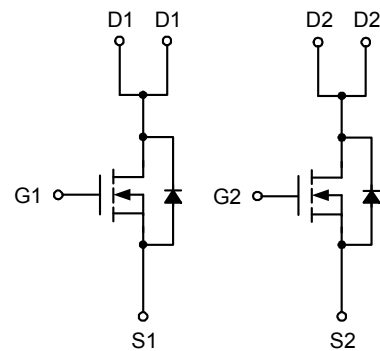
Applications

- 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 ($V_{GS}=10V$)	$T_A=25^\circ\text{C}$ 8	A
		$T_A=70^\circ\text{C}$ 6	
I_{DM}^a	300 μs Pulsed Drain Current ($V_{GS}=10V$)	24	
I_S^a	Diode Continuous Forward Current	8	
I_{AS}^b	Avalanche Current (Single Pulse)	9	mJ
E_{AS}^b	Avalanche Energy, Single Pulse ($L=0.5mH$)	20	
T_J	Maximum Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	
P_D^a	Maximum Power Dissipation	$T_A=25^\circ\text{C}$ 1.7	W
		$T_A=70^\circ\text{C}$ 1.08	
$R_{\theta JA}^a$	Thermal Resistance-Junction to Ambient	$t \leq 10s$ 48	$^\circ\text{C/W}$
		Steady State 74	
$R_{\theta JL}$	Thermal Resistance-Junction to Lead	Steady State 32	

Note a : Surface Mounted on 1in² pad area, $t \leq 10\text{sec}$. Maximum Power dissipation is calculated from $R_{\theta JA}$ (worst) = 62.5 $^\circ\text{C/W}$ under $t \leq 10s$.

Note b : UIS tested and pulse width limited by maximum junction temperature 150 $^\circ\text{C}$ (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	-	18	21	mΩ
		V _{GS} =4.5V, I _{DS} =8A	-	23	26	
Gfs	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, dl _{SD} /dt=100A/μs	-	15.5	-	ns
Q _{rr} ^b	Reverse Recovery Charge		-	6.5	-	nC

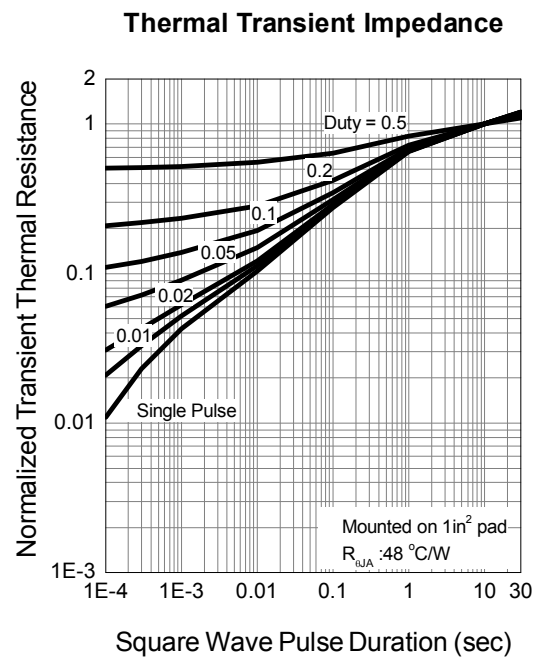
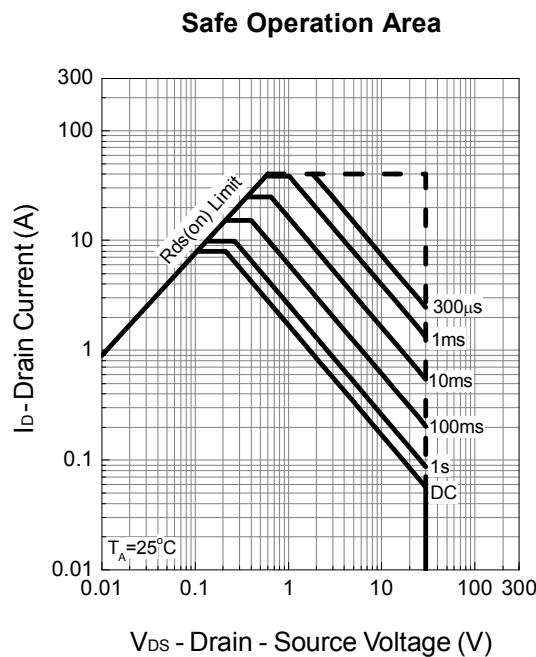
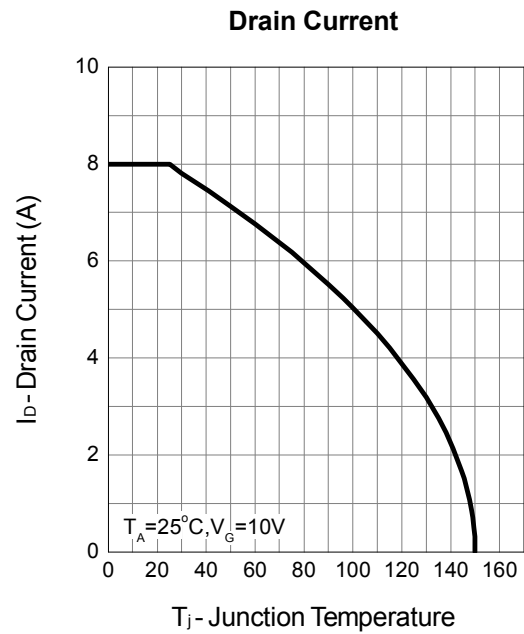
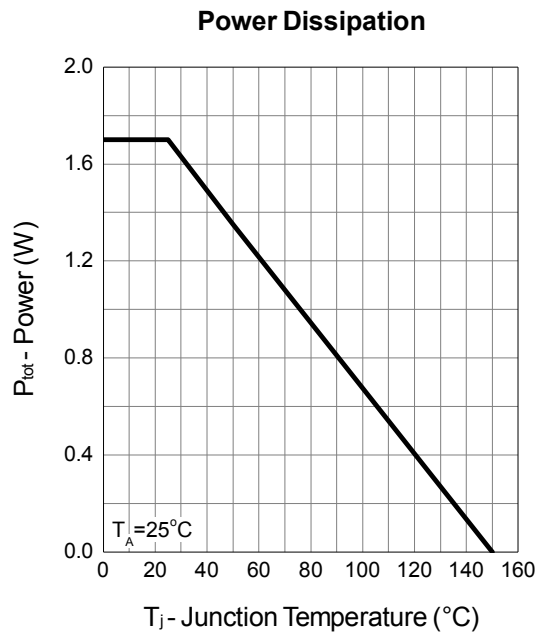
Electrical Characteristics (Cont.) ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

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	-	

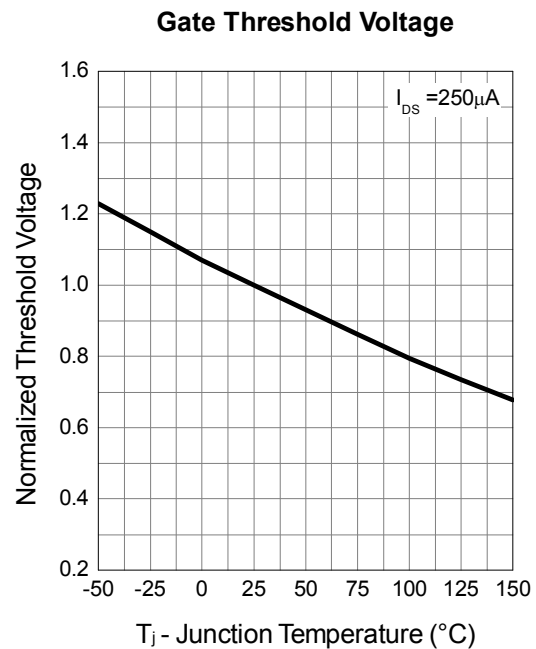
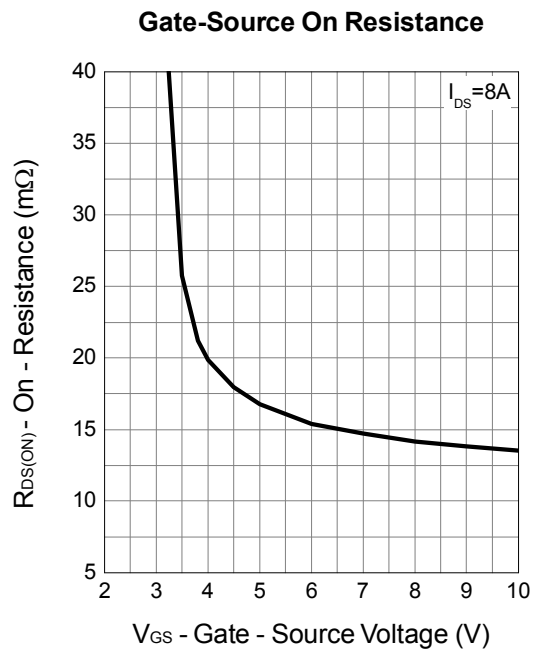
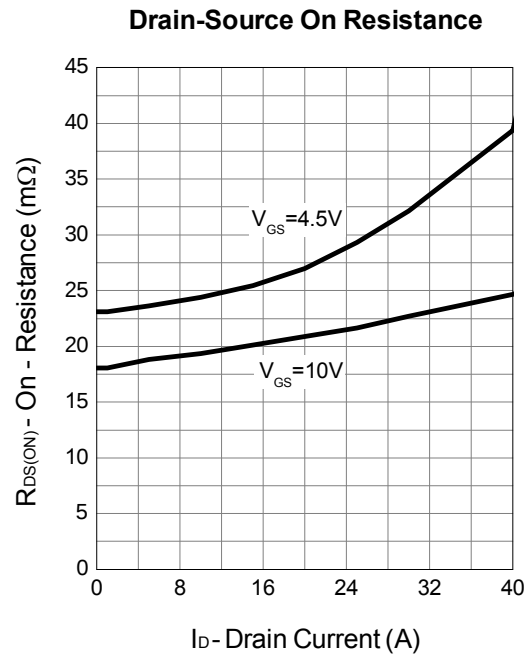
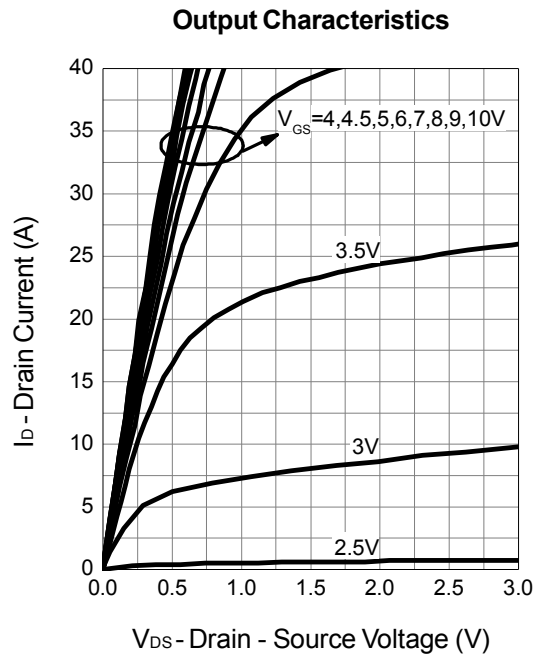
Note a : Pulse test ; pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.

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

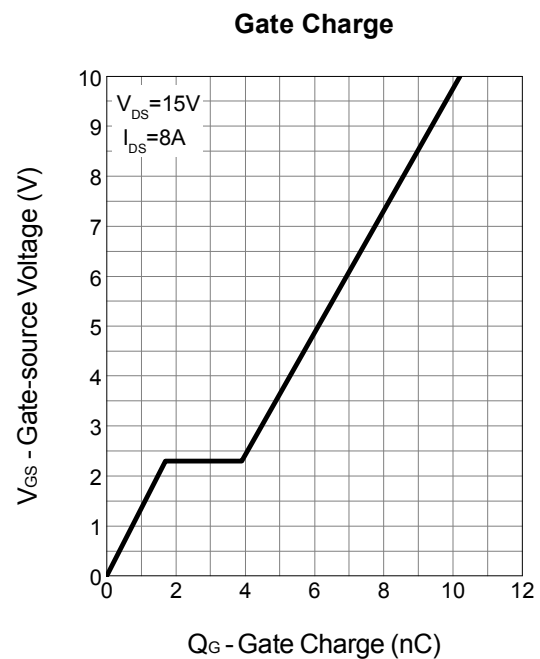
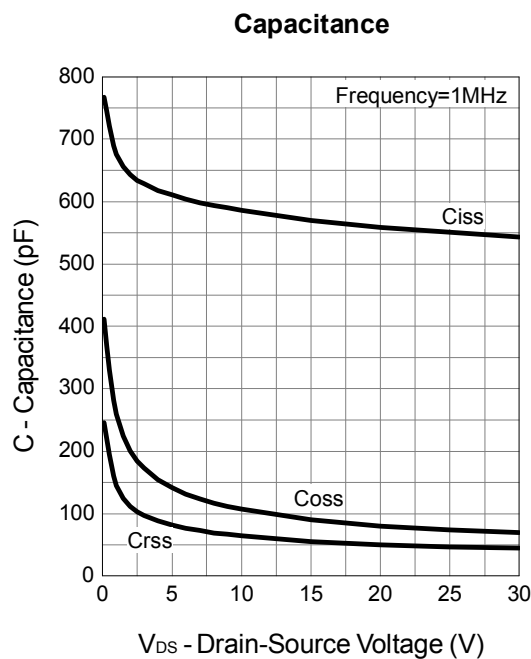
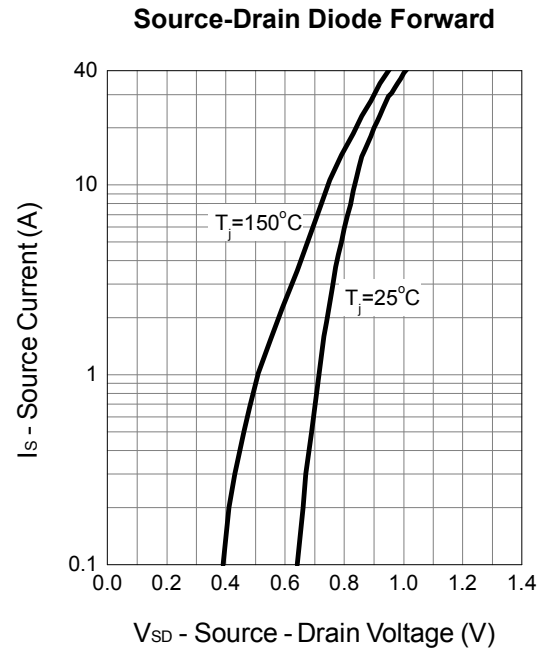
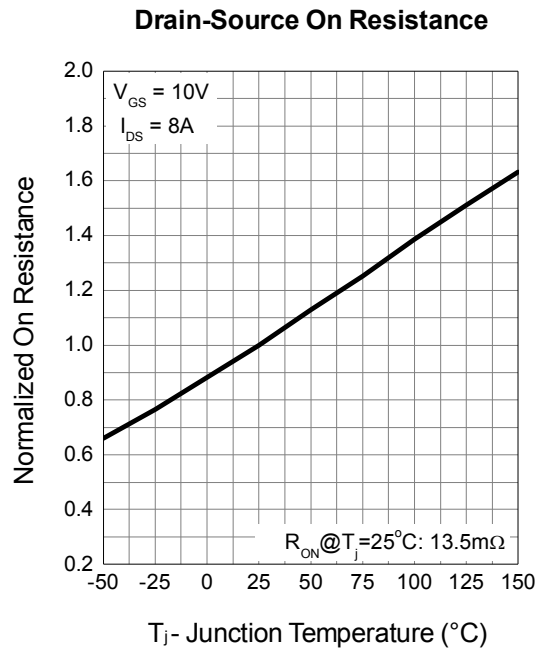
Typical Operating Characteristics



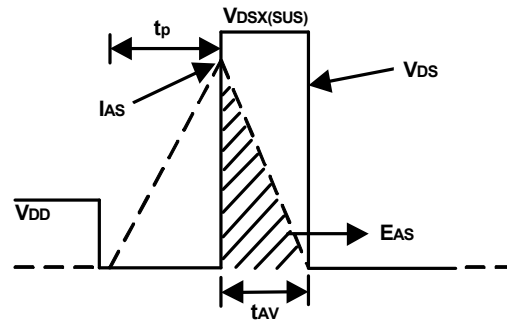
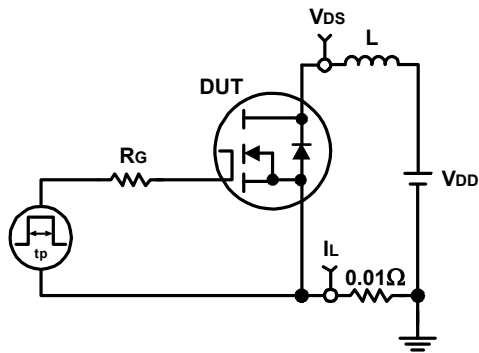
Typical Operating Characteristics (Cont.)



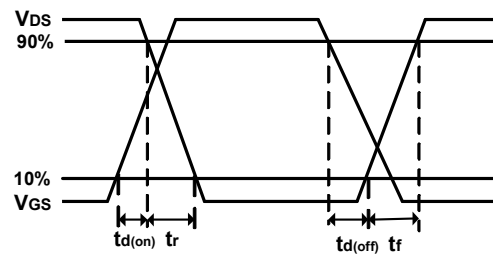
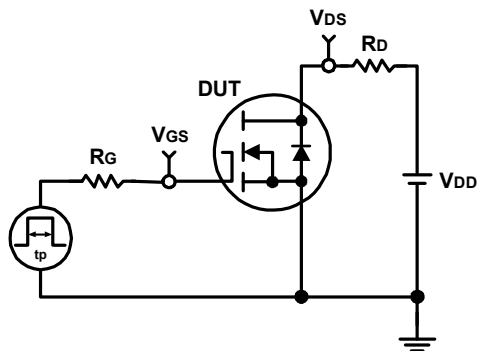
Typical Operating Characteristics (Cont.)



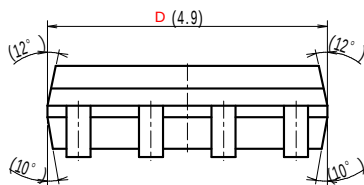
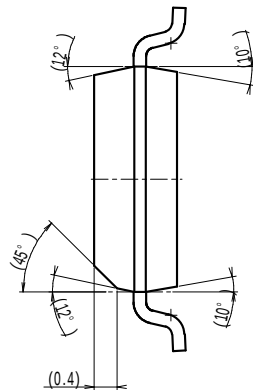
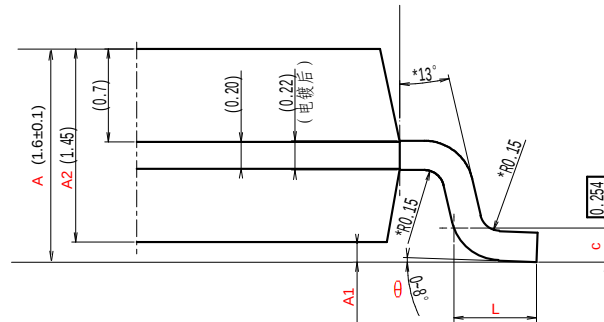
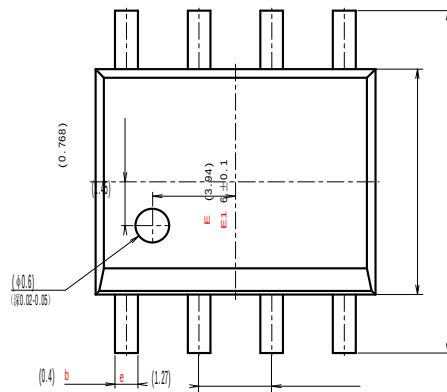
Avalanche Test Circuit and Waveforms



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°