

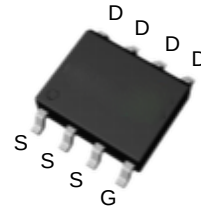
Features

- -30V/-6.5A ,
 $R_{DS(ON)} = 36m\Omega (typ.) @ V_{GS} = -10V$
 $R_{DS(ON)} = 56m\Omega (typ.) @ V_{GS} = -4.5V$
- 100% UIS Tested
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

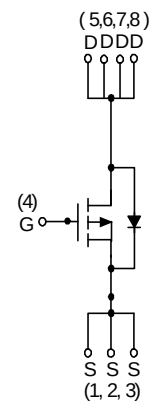
Applications

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

Pin Description



Top View of SOP 8



P-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 [*]	Continuous Drain Current	V _{GS} =-10V	-6.5	A
I _{DM} [*]	Pulsed Drain Current		-21	
I _S [*]	Diode Continuous Forward Current		-2	A
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	
P _D [*]	Maximum Power Dissipation	T _A =25°C	2.5	W
		T _A =100°C	1	
R _{θJA} [*]	Thermal Resistance-Junction to Ambient	t ≤ 10sec	50	°C/W
		Steady state	80	

Note * : Surface Mounted on 1in^2 pad area, $t \leq 10\text{sec}$.

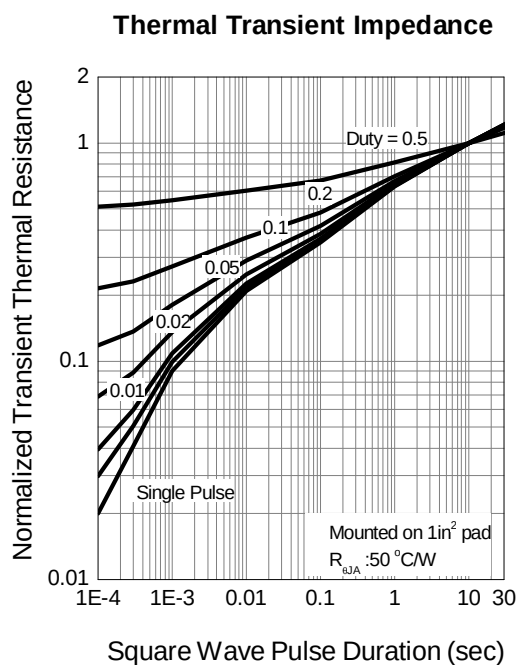
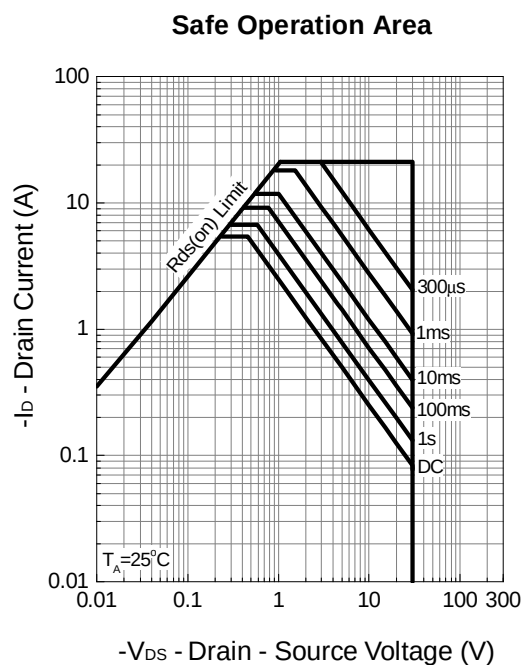
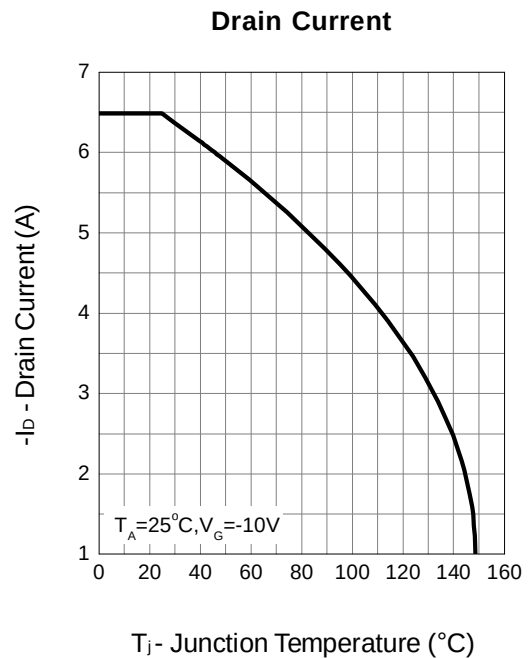
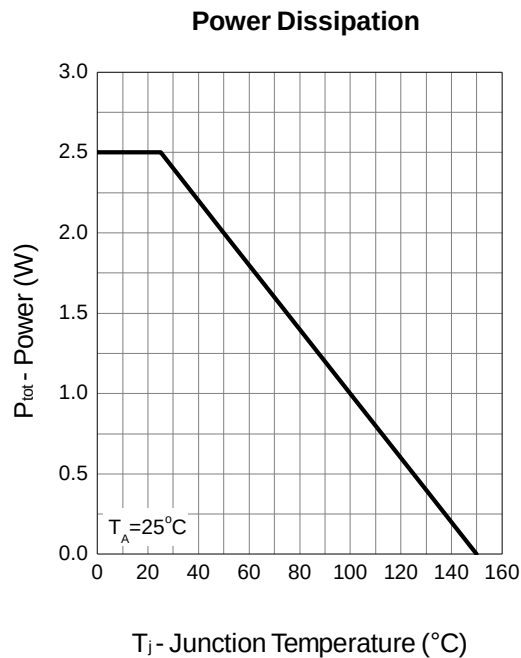
Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
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	-1.5	-2.3	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} =-5.4A	-	36	45	mΩ
		V _{GS} =-4.5V, I _{DS} =-2A	-	56	68	
V _{SD} ^a	Diode Forward Voltage	I _{SD} =-1A, V _{GS} =0V	-	-	-1.3	V
Gate Charge Characteristics ^b						
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-10V, I _{DS} =-5.4A	-	13	-	nC
Q _{gs}	Gate-Source Charge		-	1.3	-	
Q _{gd}	Gate-Drain Charge		-	3.1	-	
Dynamic Characteristics ^b						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-15V, Frequency=1.0MHz	-	642	-	pF
C _{oss}	Output Capacitance		-	76	-	
C _{rss}	Reverse Transfer Capacitance		-	66	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =-15V, R _L =15Ω, I _{DS} =-1A, V _{GEN} =-10V, R _G =6Ω	-	8	-	ns
T _r	Turn-on Rise Time		-	13	-	
t _{d(OFF)}	Turn-off Delay Time		-	26	-	
T _f	Turn-off Fall Time		-	7	-	
t _{rr}	Reverse Recovery Time	I _{DS} =-5.4A, dl _{SD} /dt=100A/μs	-	13	-	ns
Q _{rr}	Reverse Recovery Charge		-	7	-	nC

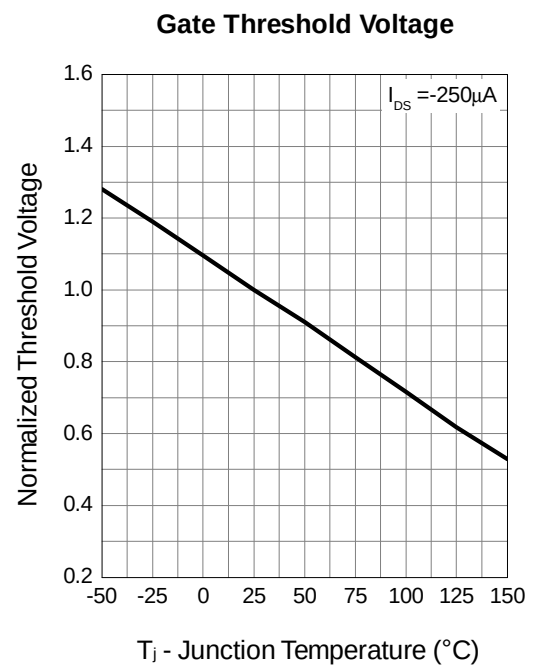
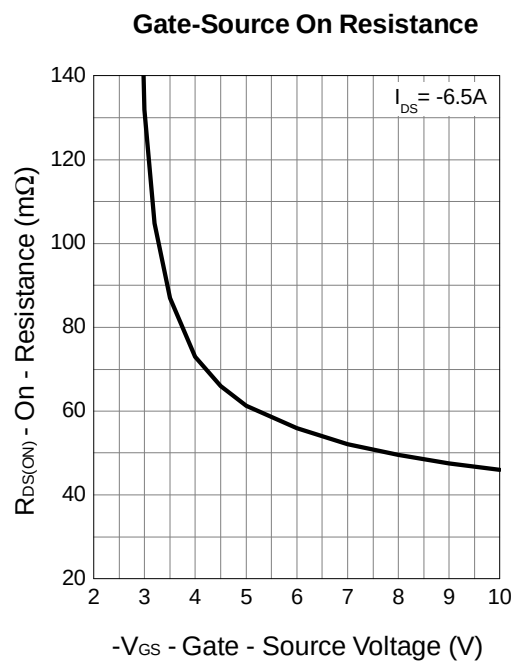
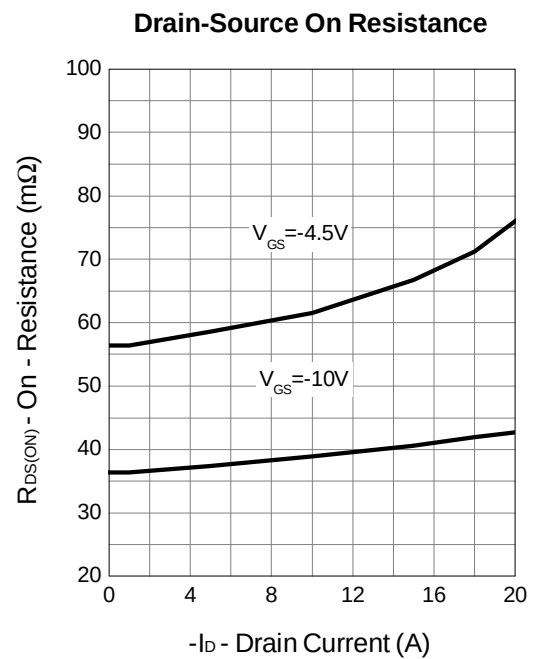
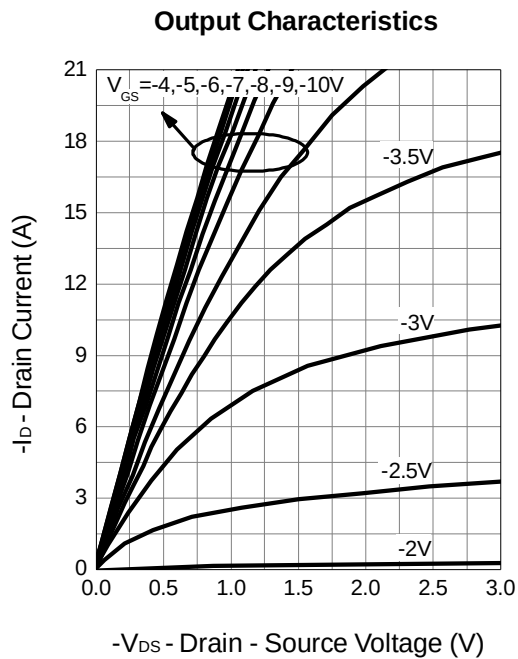
Note a : Pulse test; pulse width≤300μs, duty cycle≤2%.

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

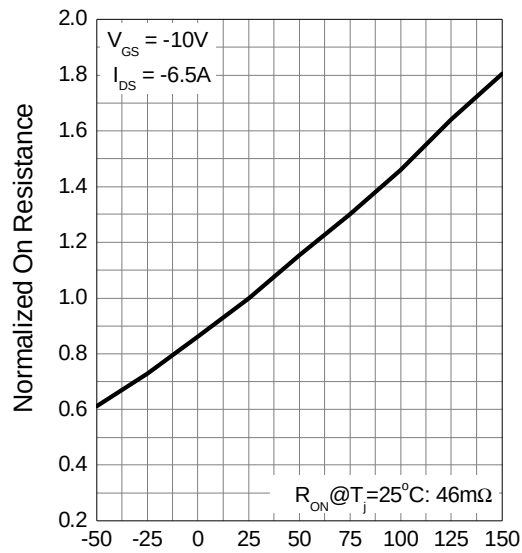
Typical Characteristics



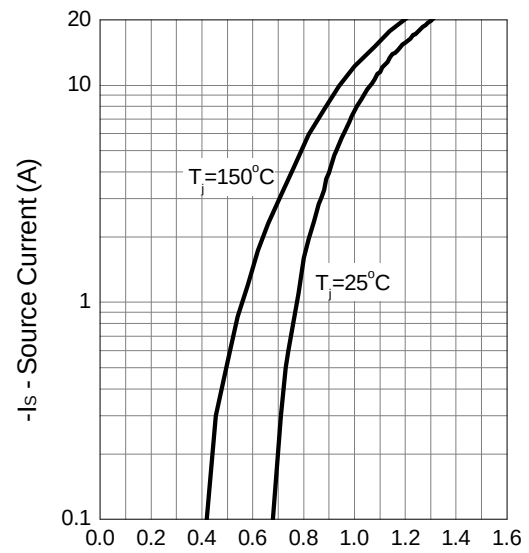
Typical Characteristics (Cont.)



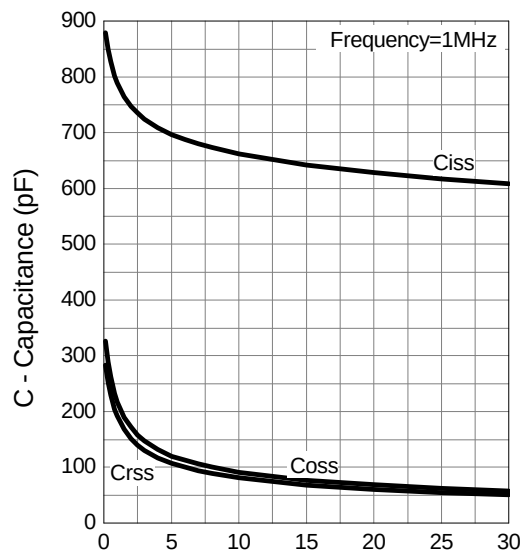
Typical Characteristics (Cont.)

Drain-Source On Resistance


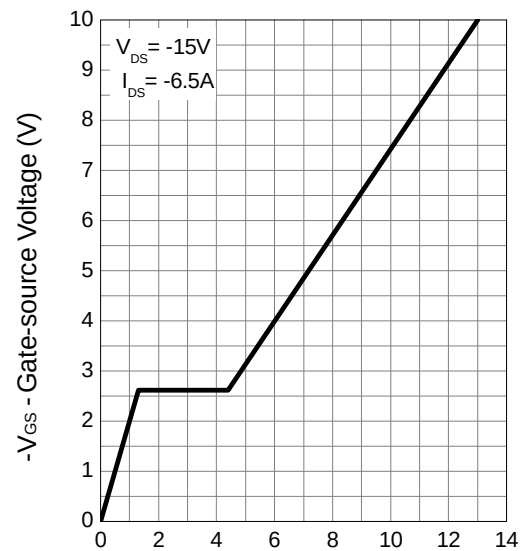
T_J - Junction Temperature ($^{\circ}\text{C}$)

Source-Drain Diode Forward


$-V_{SD}$ - Source - Drain Voltage (V)

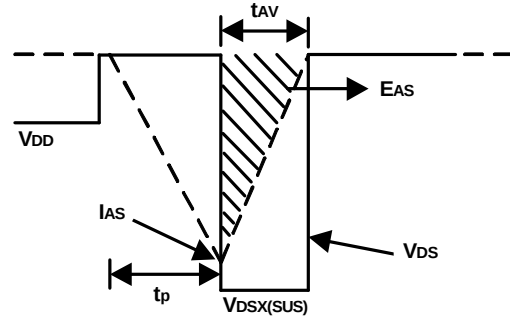
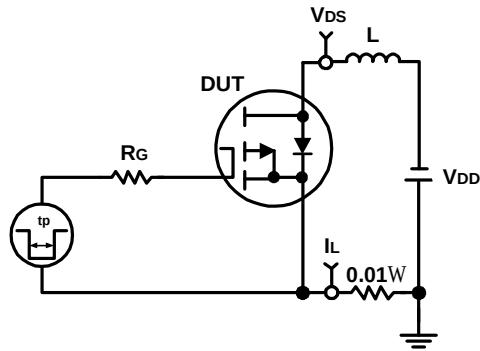
Capacitance


$-V_{DS}$ - Drain - Source Voltage (V)

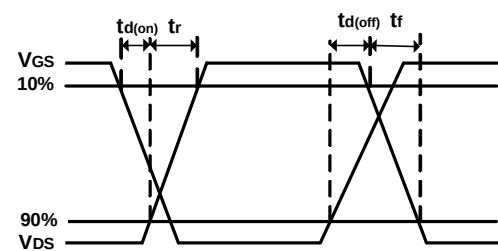
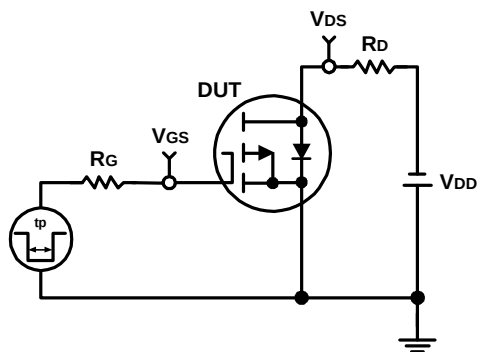
Gate Charge


Q_G - Gate Charge (nC)

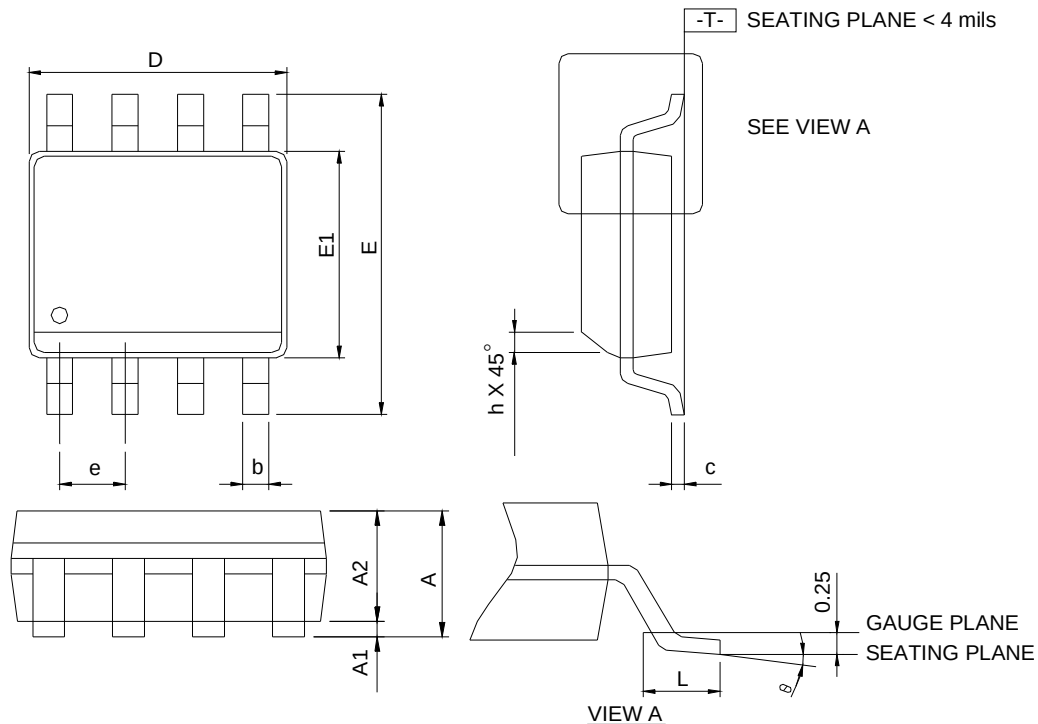
Avalanche Test Circuit and Waveforms



Switching Time Test Circuit and Waveforms



Package Information



DIMENSIONS	SOP8			
	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.
2. Dimension "D" does not include mold flash, protrusions or gate burrs. Mold flash, protrusion or gate burrs shall not exceed 6 mil per side.
3. 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

