

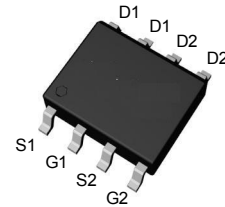
Features

- 40V/10A,
 $R_{DS(ON)} = 15m\Omega$ (typ.) @ $V_{GS} = 10V$
 $R_{DS(ON)} = 18m\Omega$ (typ.) @ $V_{GS} = 4.5V$
- 100% UIS + R_g Tested
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

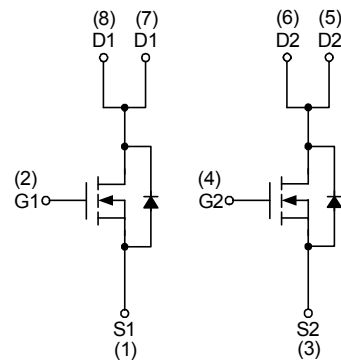
Applications

- Power Management in Note book.
- Battery Powered System.
- DC/DC Converter.
- Load Switch.

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
Common Ratings			
V_{DS}	Drain-Source Voltage	40	V
V_{GS}	Gate-Source Voltage	± 20	V
T_J	Maximum Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
I_S	Diode Continuous Forward Current	$T_A = 25^\circ\text{C}$	A
I_D	Continuous Drain Current	$T_A = 25^\circ\text{C}$	A
		$T_A = 70^\circ\text{C}$	
I_{DM}^a	Pulse Drain Current Tested	$T_A = 25^\circ\text{C}$	A
P_D	Maximum Power Dissipation	$T_A = 25^\circ\text{C}$	W
		$T_A = 70^\circ\text{C}$	
$R_{\theta JL}$	Thermal Resistance-Junction to Lead	Steady State	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	$t \leq 10\text{s}$	$^\circ\text{C/W}$
		Steady State ^b	
I_{AS}^c	Avalanche Current, Single pulse	$L = 0.5\text{mH}$	A
E_{AS}^c	Avalanche Energy, Single pulse	$L = 0.5\text{mH}$	mJ

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

Note b : Surface Mounted on 1in² pad area, $t = 999\text{sec}$.

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

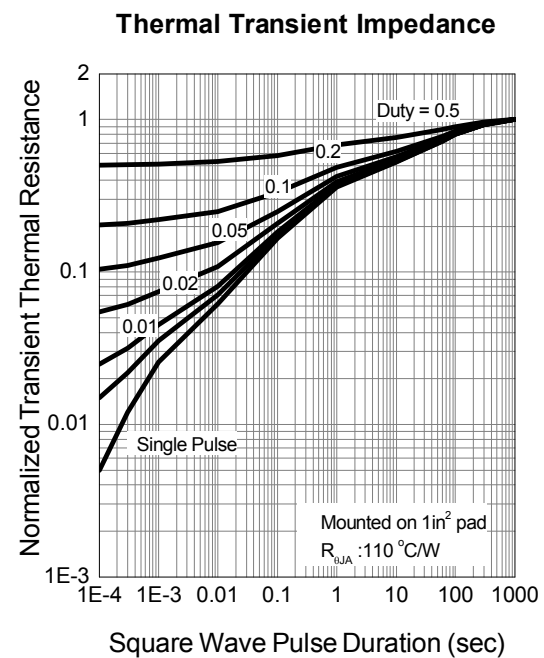
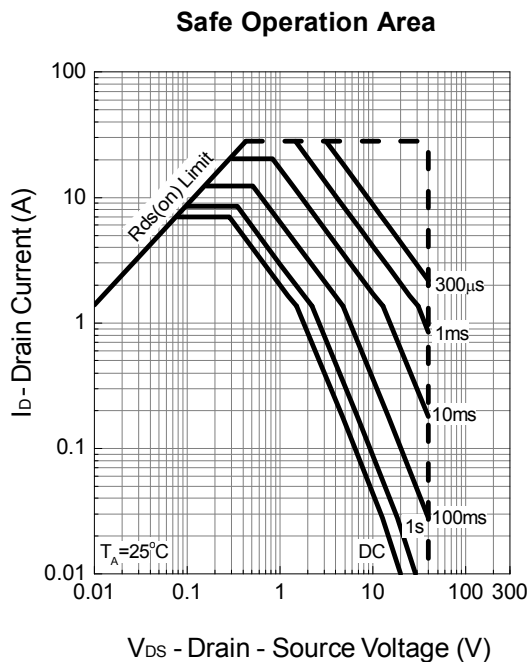
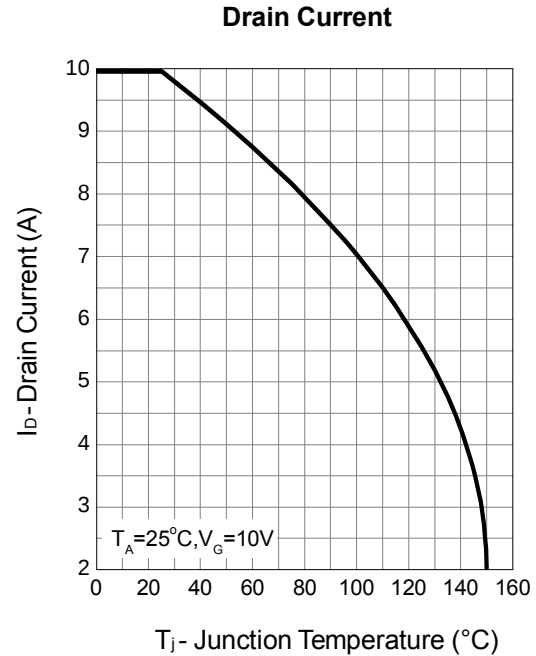
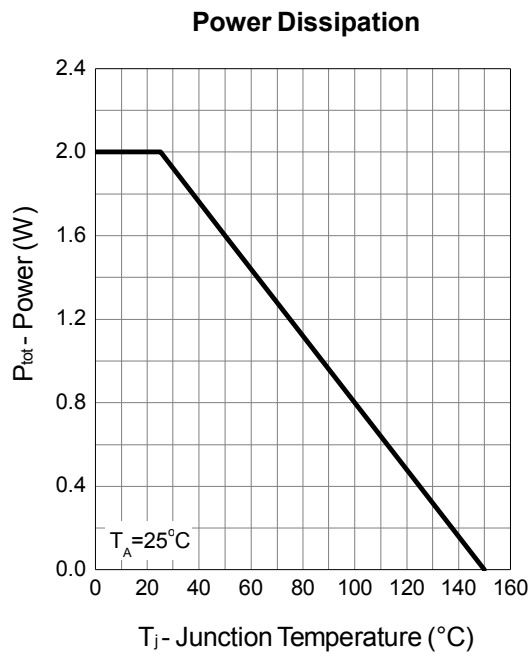
Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	40	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =32V, V _{GS} =0V T _J =85°C	-	-	1 30	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	1.5	2	2.5	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^c	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =6A V _{GS} =4.5V, I _{DS} =5A	-	15 18	18 21	mΩ
Diode Characteristics						
V _{SD} ^c	Diode Forward Voltage	I _{SD} =1A, V _{GS} =0V	-	0.75	1.1	V
t _{rr}	Reverse Recovery Time	I _{DS} =6A, dI _{SD} /dt=100A/μs	-	13	-	ns
Q _{rr}	Reverse Recovery Charge		-	8.7	-	nC
Dynamic Characteristics ^d						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	-	2.5	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =20V, Frequency=1.0MHz	-	815	-	pF
C _{oss}	Output Capacitance		-	95	-	
C _{rss}	Reverse Transfer Capacitance		-	60	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =20V, R _L =20Ω, I _{DS} =1A, V _{GEN} =10V, R _G =6Ω	-	7.8	-	ns
t _r	Turn-on Rise Time		-	6.9	-	
t _{d(OFF)}	Turn-off Delay Time		-	22.4	-	
t _f	Turn-off Fall Time		-	4.8	-	
Gate Charge Characteristics ^d						
Q _g	Total Gate Charge	V _{DS} =20V, V _{GS} =10V, I _{DS} =6A	-	15.7	22	nC
Q _g	Total Gate Charge	V _{DS} =20V, V _{GS} =4.5V, I _{DS} =6A	-	7.5	10.5	
Q _{gth}	Threshold Gate Charge		-	1.85	-	
Q _{gs}	Gate-Source Charge		-	3.24	-	
Q _{gd}	Gate-Drain Charge		-	2.75	-	

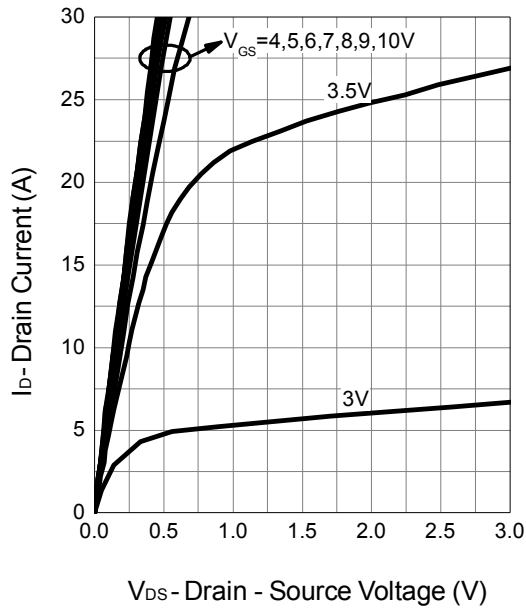
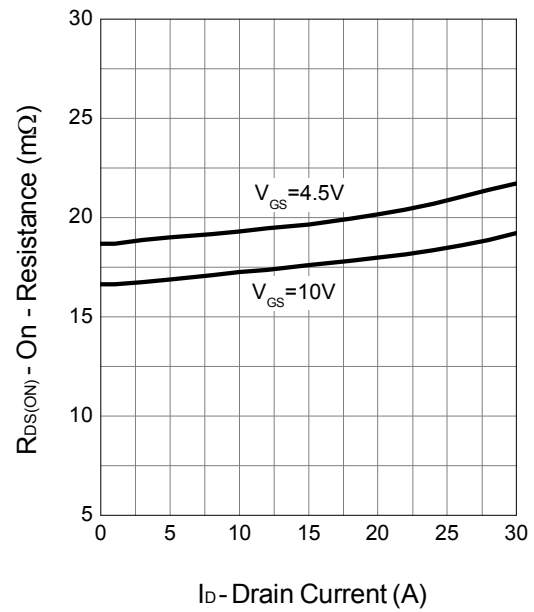
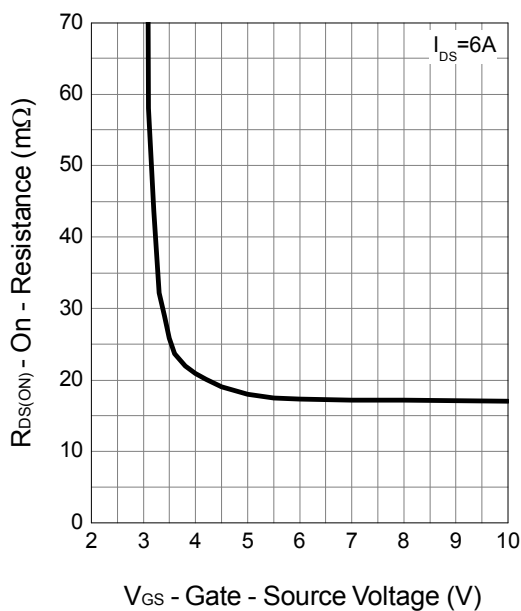
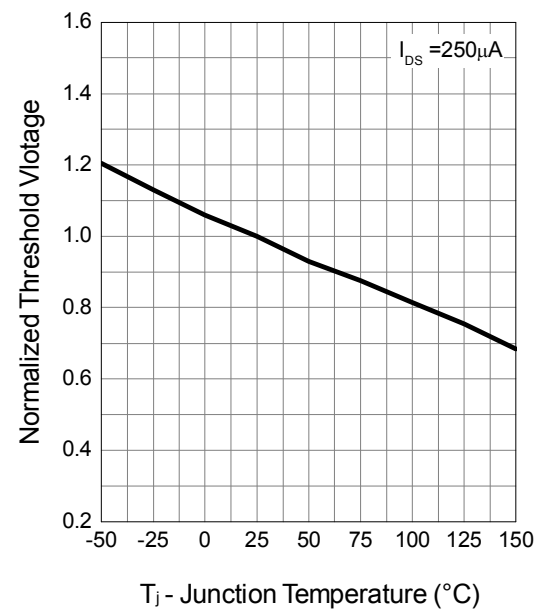
Note c : Pulse test ; pulse width≤300μs, duty cycle≤2%.

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

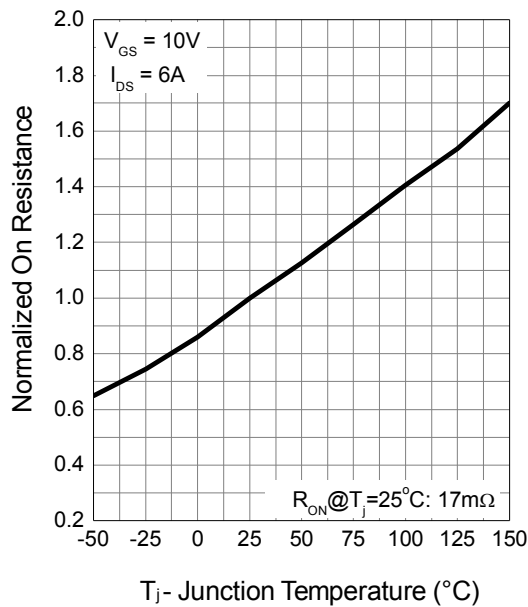
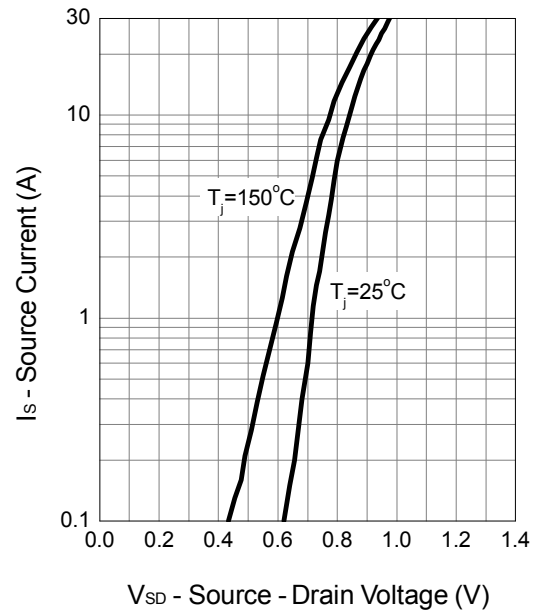
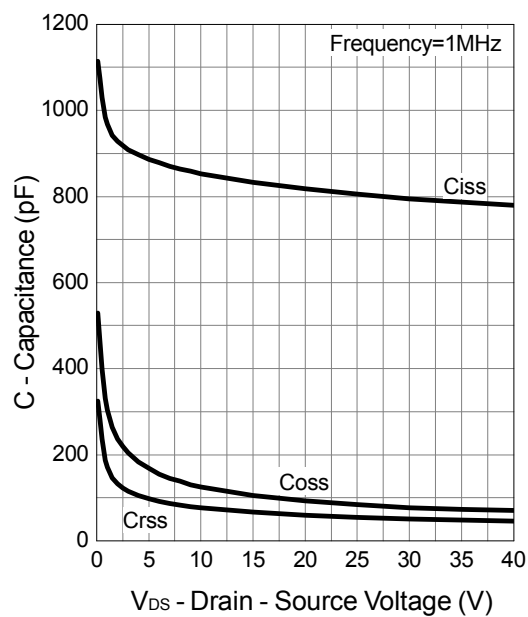
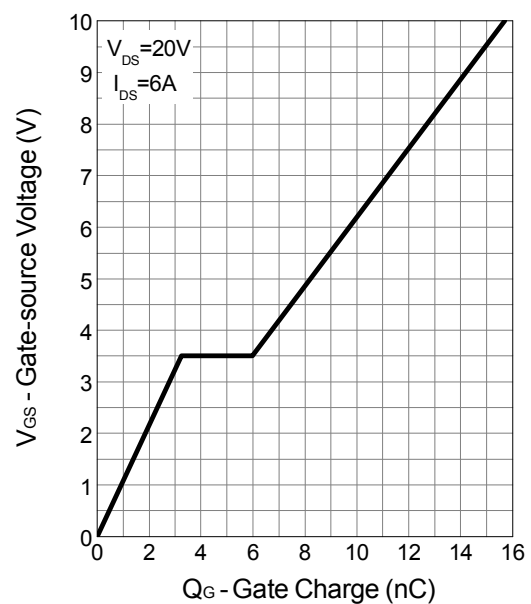
Typical Operating Characteristics



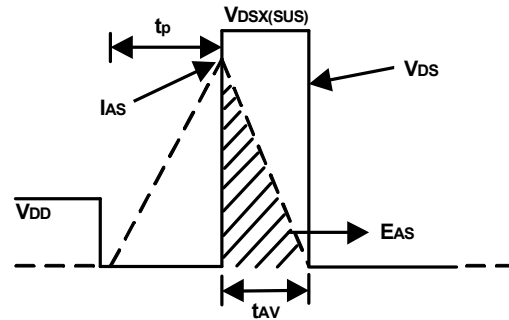
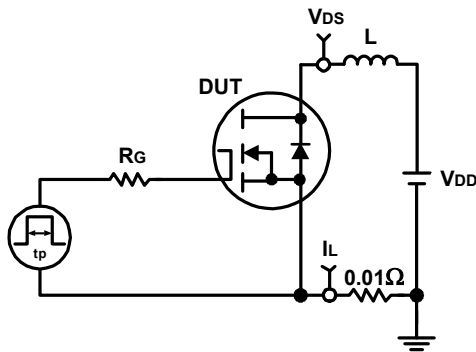
Typical Operating Characteristics (Cont.)

Output Characteristics

Drain-Source On Resistance

Gate-Source On Resistance

Gate Threshold Voltage


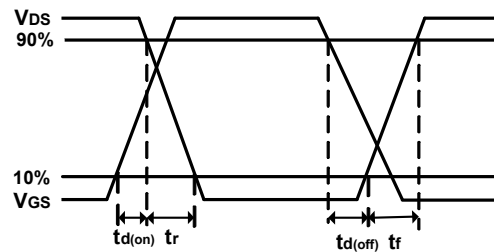
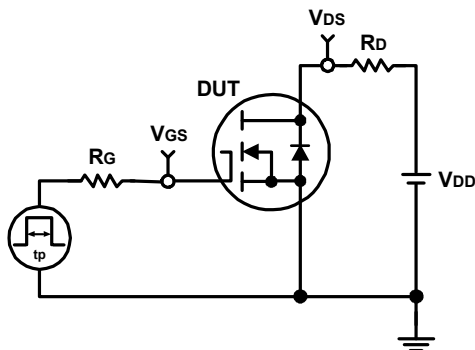
Typical Operating Characteristics (Cont.)

Drain-Source On Resistance

Source-Drain Diode Forward

Capacitance

Gate Charge


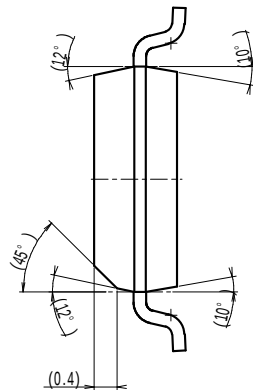
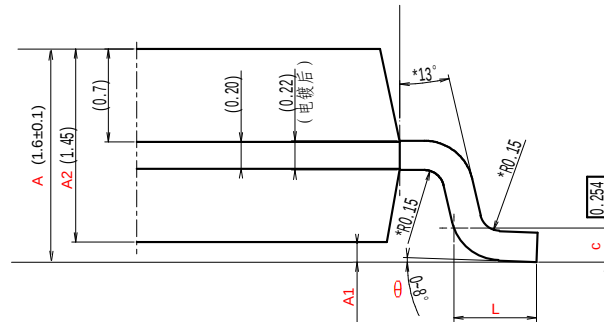
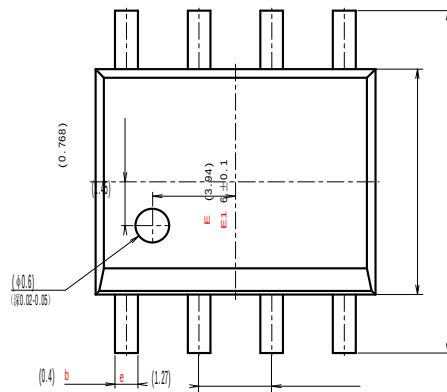
Avalanche Test Circuit and Waveforms



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°

