

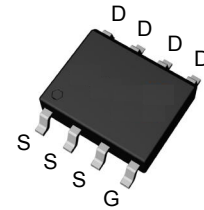
Features

- 200V/4A,
 $R_{DS(ON)} = 260m\Omega(\text{typ.}) @ V_{GS} = 10V$
- Reliable and Rugged
- Lead Free and Green Devices Available
 (RoHS Compliant)

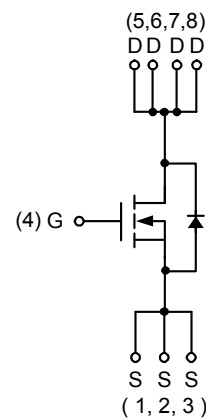
Applications

- Power Management in TV Inverter.

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		200	V
V _{GSS}	Gate-Source Voltage		±20	
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	
I _S ^a	Diode Continuous Forward Current		4	A
I _{DP} ^a	300μs Pulse Drain Current Tested	T _C =25°C	4	
		T _C =100°C	1.6	
I _D ^a	Continuous Drain Current	T _C =25°C	1.9	
		T _C =100°C	1.2	
P _D ^a	Maximum Power Dissipation	T _C =25°C	2.5	W
		T _C =100°C	1	
R _{θJA} ^{a,b}	Thermal Resistance-Junction to Ambient		50	°C/W

Notes a : Surface Mounted on 1in2 pad area, $t \leq 10\text{sec}$.

Notes b : Maximum under Steady State conditions is 75°C/w .

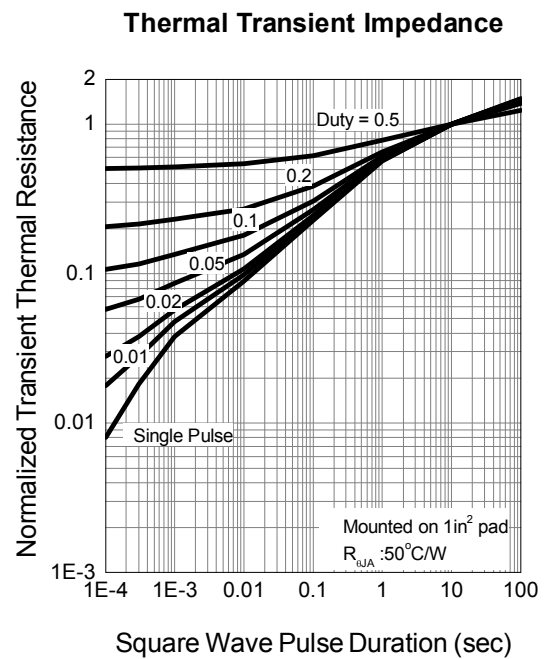
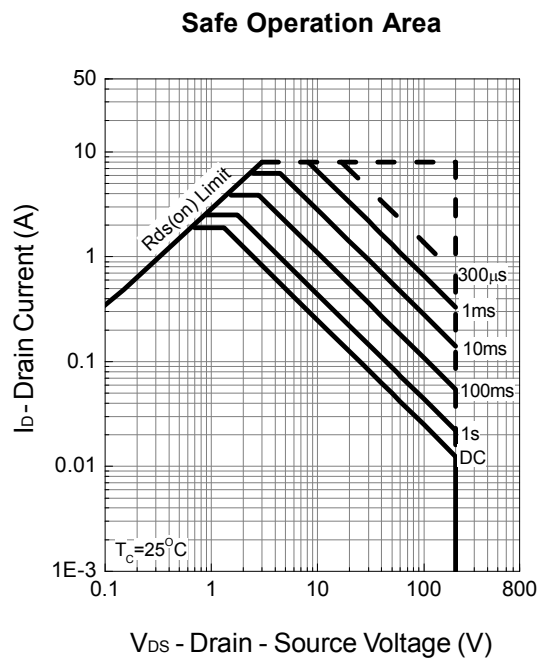
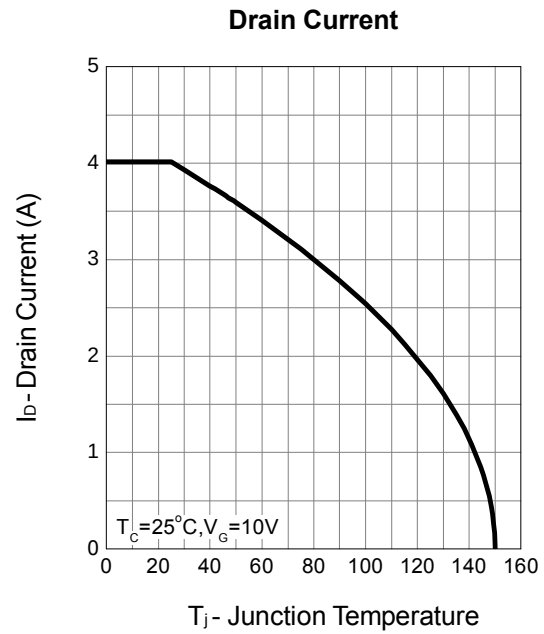
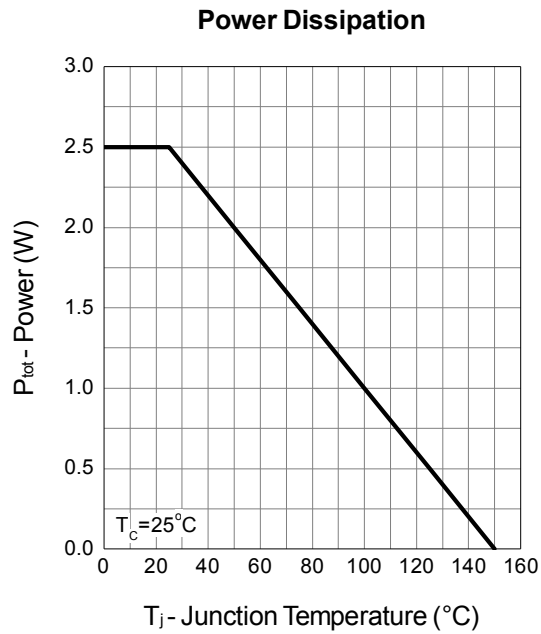
Electrical Characteristics (T_A = 25°C Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	200	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =160V, V _{GS} =0V	-	-	1	μA
		T _J =85°C	-	-	30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	2	3	4	V
I _{GSS}	Gate Leakage Current	V _{GS} =±25V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^c	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =1.9A	-	260	300	mΩ
Diode Characteristics						
V _{SD} ^c	Diode Forward Voltage	I _{SD} =1.2A, V _{GS} =0V	-	0.8	1.3	V
t _{rr} ^d	Reverse Recovery Time	I _{SD} =1.9A, dI _{SD} /dt=100A/μs	-	67	-	ns
Q _{rr} ^d	Reverse Recovery Charge		-	114	-	nC
Dynamic Characteristics ^d						
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	-	500	-	pF
C _{oss}	Output Capacitance		-	41	-	
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	-	9	16	ns
t _r	Turn-on Rise Time		-	8	15	
t _{d(OFF)}	Turn-off Delay Time		-	18	33	
t _f	Turn-off Fall Time		-	3	6	
Gate Charge Characteristics ^d						
Q _g	Total Gate Charge	V _{DS} =100V, V _{GS} =10V, I _{DS} =1.9A	-	10	14	nC
Q _{gs}	Gate-Source Charge		-	2.6	-	
Q _{gd}	Gate-Drain Charge		-	2.5	-	

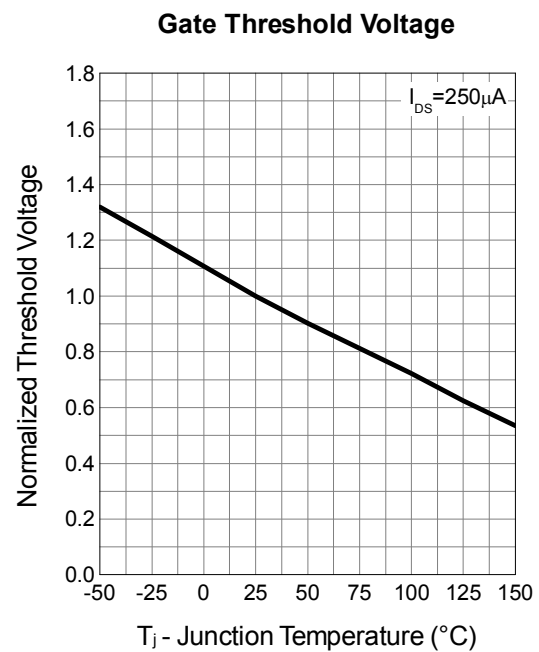
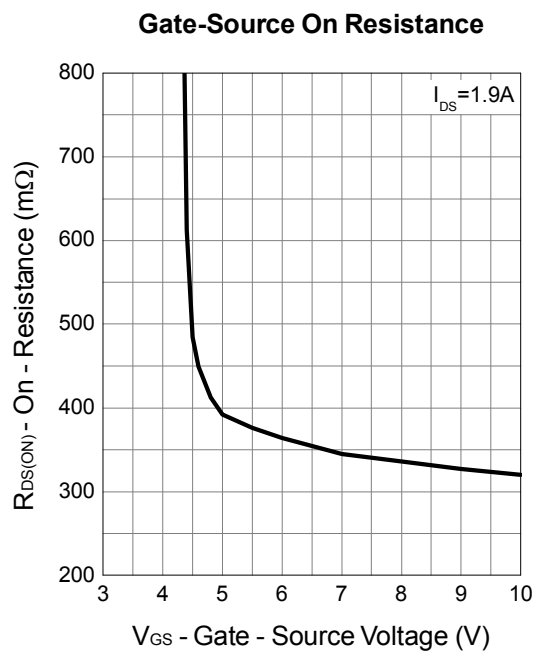
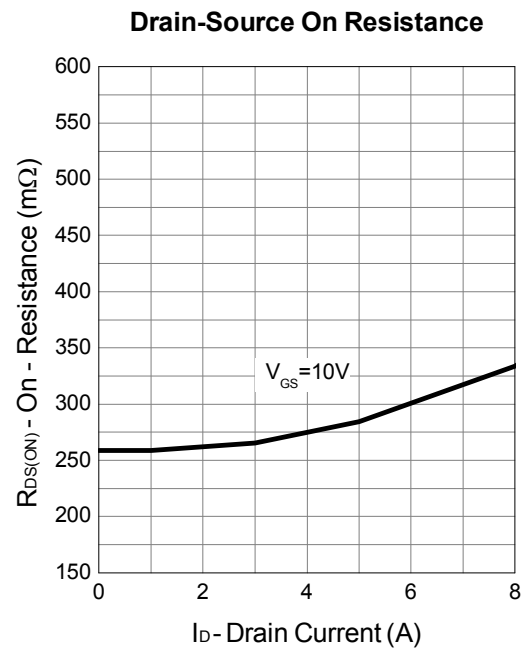
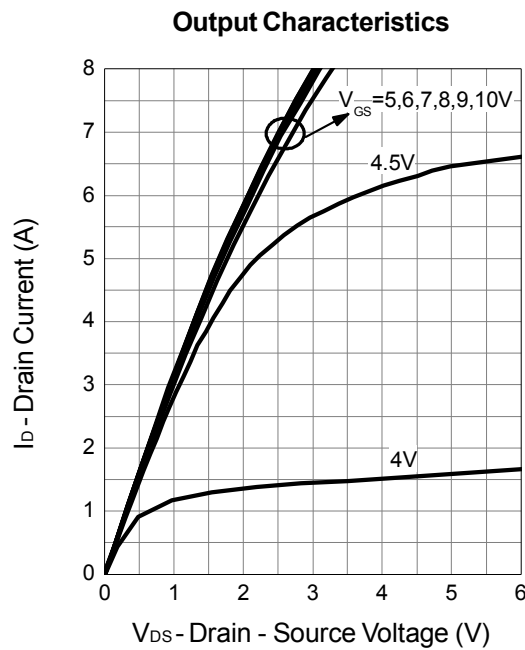
Note c : Pulse test ; pulse width ≤ 300 μs, duty cycle ≤ 2%.

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

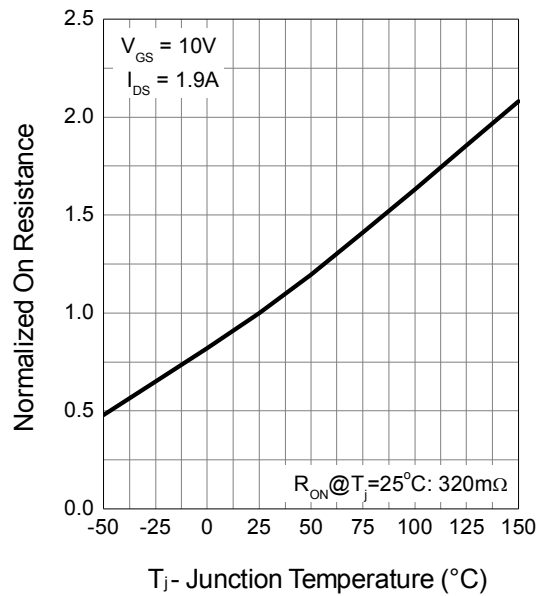
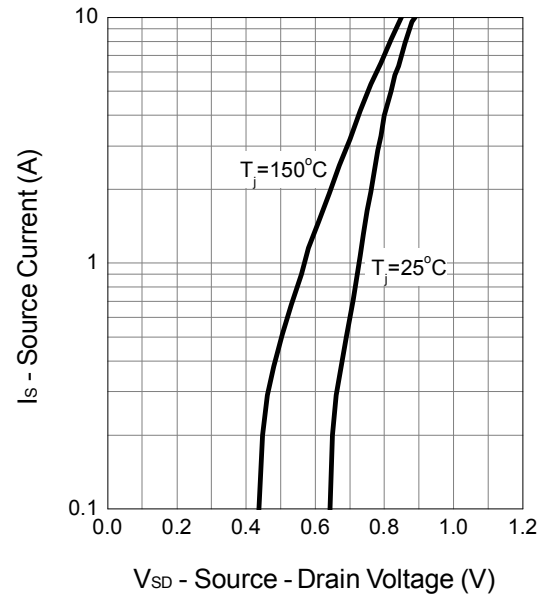
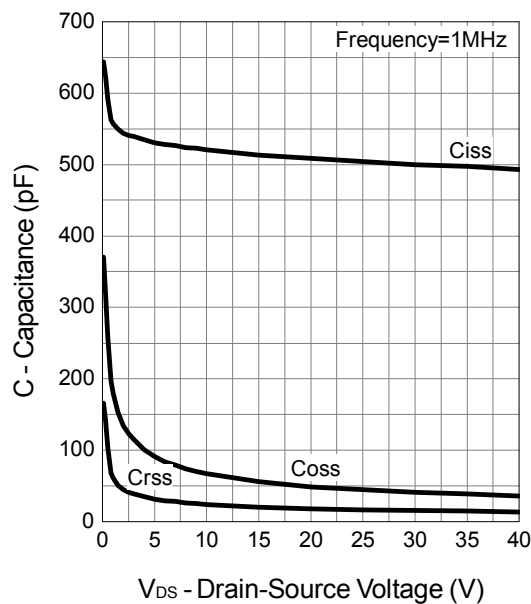
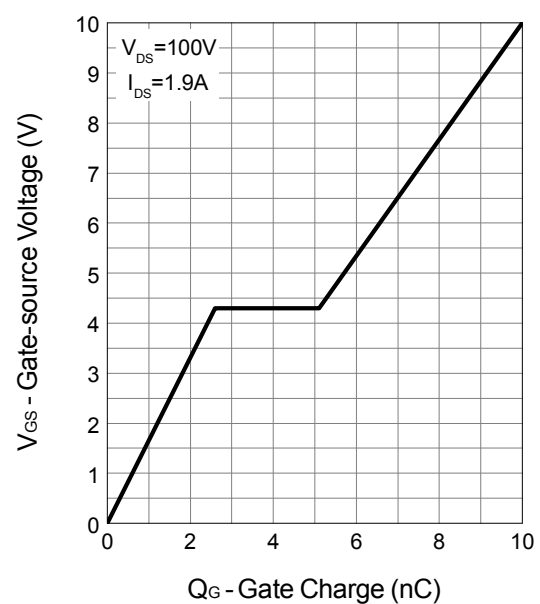
Typical Operating Characteristics



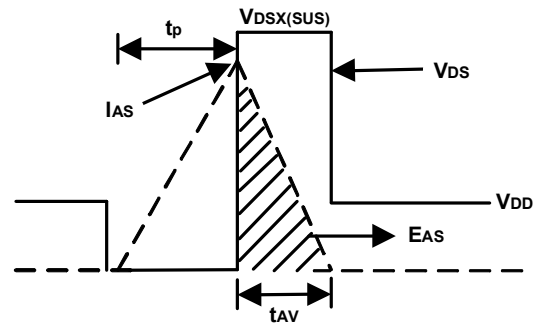
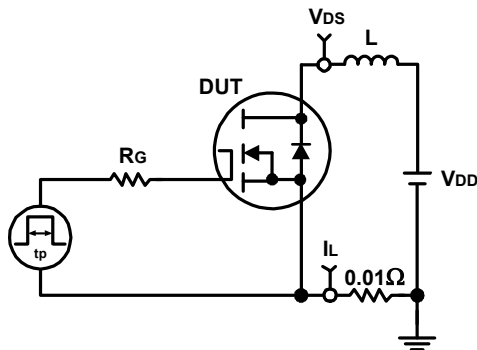
Typical Operating Characteristics (Cont.)



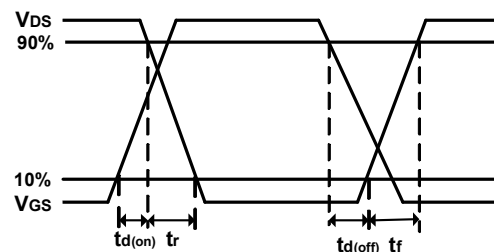
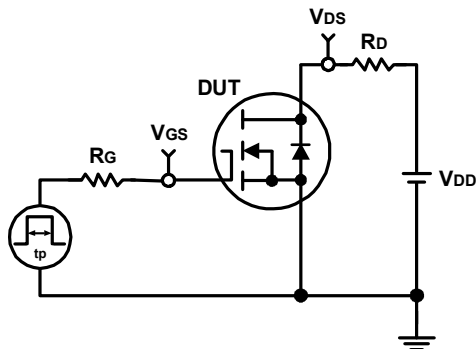
Typical Operating Characteristics (Cont.)

Drain-Source On Resistance

Source-Drain Diode Forward

Capacitance

Gate Charge


Avalanche Test Circuit and Waveforms

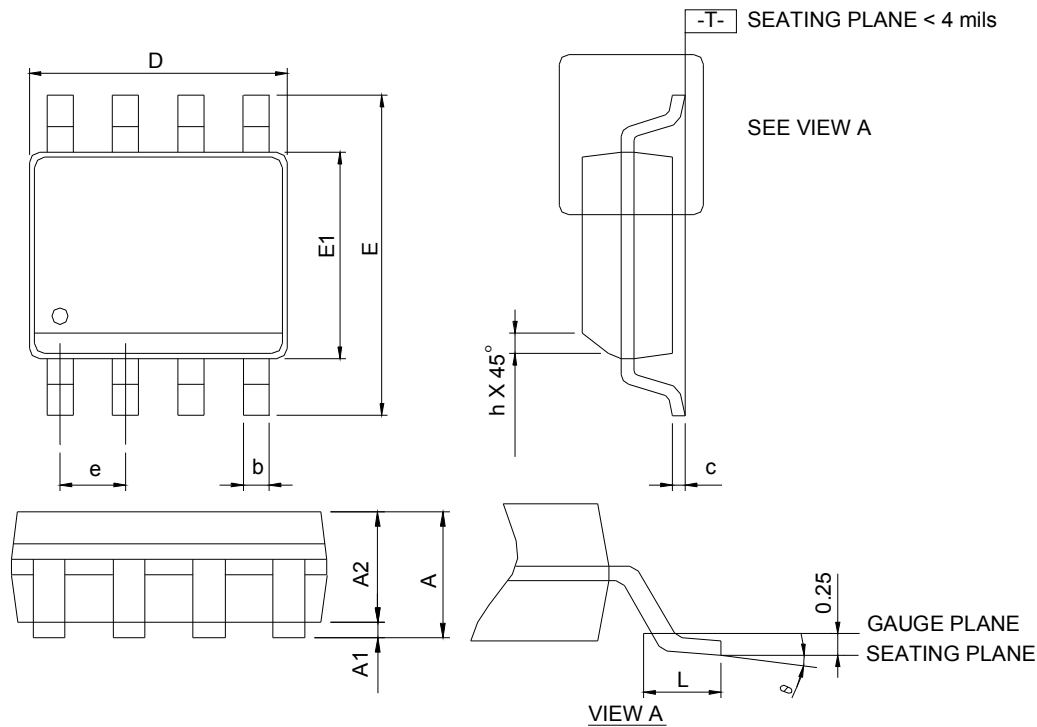


Switching Time Test Circuit and Waveforms



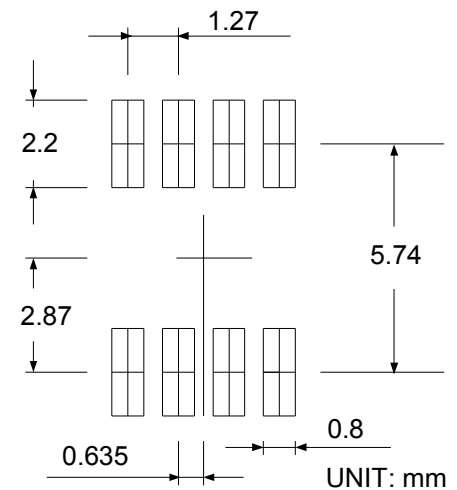
Package Information

SOP-8



DIMENSIONS	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°

RECOMMENDED LAND PATTERN



- 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.