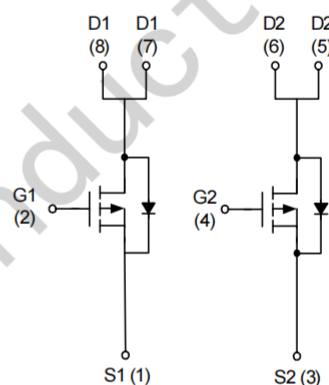
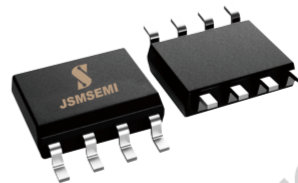


Features

- 30V/-6.5A ,
 $R_{DS(ON)} = 36m\Omega (typ.) @ V_{GS} = -10V$
 $R_{DS(ON)} = 50m\Omega (typ.) @ V_{GS} = -4.5V$
- Reliable and Rugged
- Lead Free and Green Device Available
 (RoHS Compliant)
- ESD Protection

Pin Description



P-Channel MOSFET

Applications

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

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

Symbol	Parameter	Test Condition				Unit
			Min.	Typ.	Max.	
Dynamic Characteristics ^b						
R _G	Gate Resistance	V _{GS} =0V,V _{DS} =0V,F=1MHz	-	8	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-15V, Frequency= 1.0MHz	-	625	-	pF
C _{oss}	Output Capacitance		-	100	-	
C _{rss}	Reverse Transfer Capacitance		-	60	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =-15V, R _L =15Ω, I _{DS} =-1A, V _{GEN} =-10V, R _G =6Ω	-	6	12	ns
t _r	Turn-on Rise Time		-	12	23	
t _{d(OFF)}	Turn-off Delay Time		-	25	46	
t _f	Turn-off Fall Time		-	6	12	
t _{rr}	Reverse Recovery Time	I _{DS} =-4.9A,	-	14	-	ns
Q _{rr}	Reverse Recovery Charge	dI _{SD} /dt=100A/μs	-	5	-	nC

Notes:

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

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

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		-20	
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 *	Power Dissipation for Single Operation	T _A =25°C	2	W
		T _A =100°C	0.8	
R _{θJA} *	Thermal Resistance-Junction to Ambient		62.5	°C/W

Note:

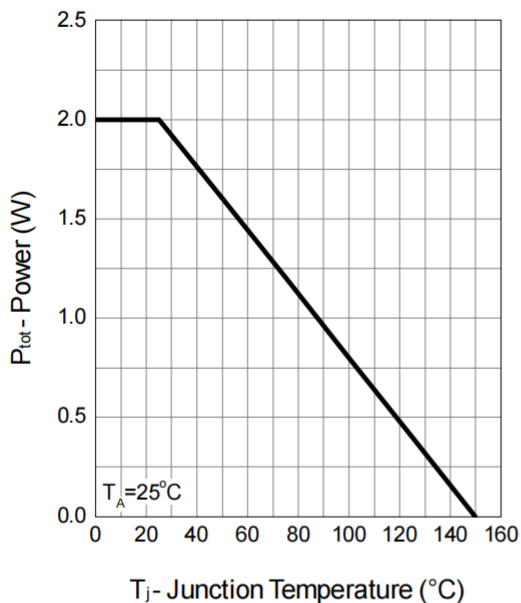
 *Surface Mounted on 1in^2 pad area, $t \leq 10\text{sec}$.

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

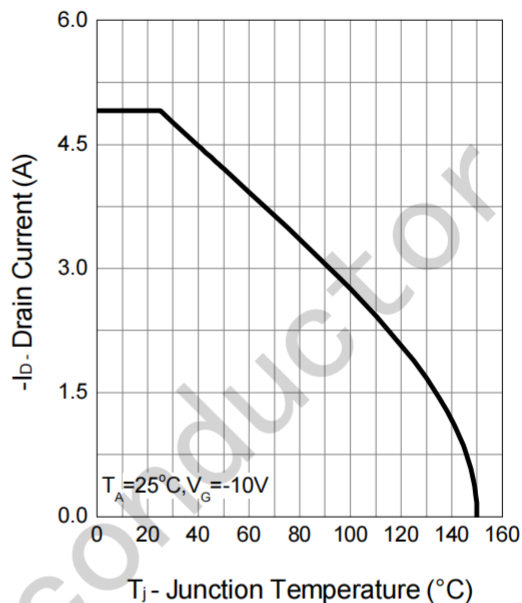
Symbol	Parameter	Test Condition				Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-24V, V _{GS} =0V	-	-	-1	μA
		T _J =85°C	-	-	-30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	-1	-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} =-6.5A	-	36	45	mΩ
		V _{GS} =-4.5V, I _{DS} =-5.6A	-	50	65	
V _{SD} ^a	Diode Forward Voltage	I _{SD} =-1.7A, V _{GS} =0V	-	-0.8	-1.3	V
Gate Charge Characteristics ^b						
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-10V, I _{DS} =-4.9A	-	11.6	16	nC
Q _{gs}	Gate-Source Charge		-	1.3	-	
Q _{gd}	Gate-Drain Charge		-	2.5	-	

Typical Characteristics

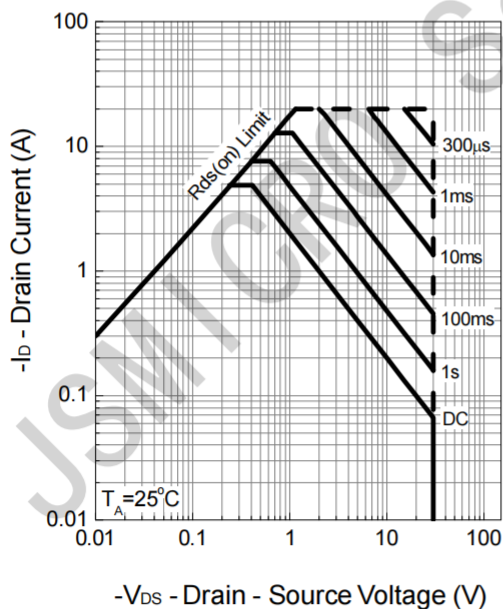
Power Dissipation



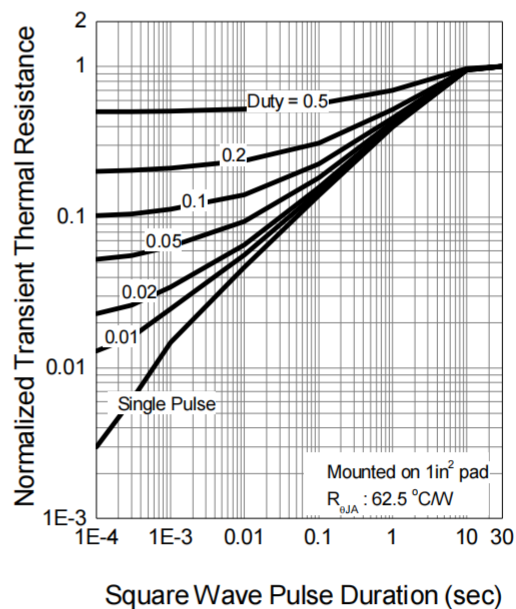
Drain Current



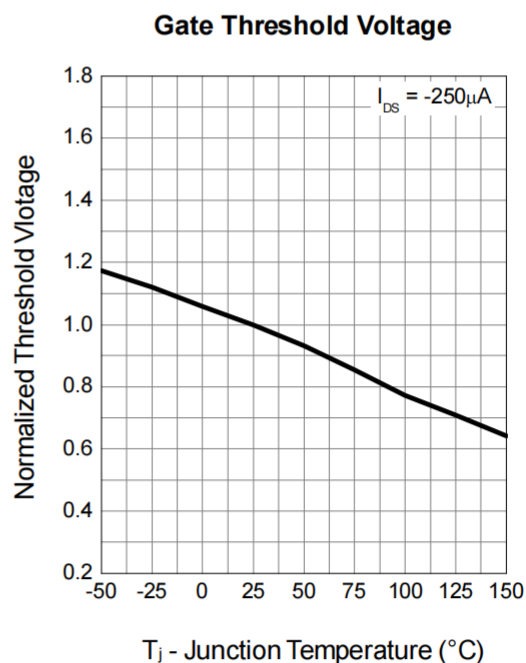
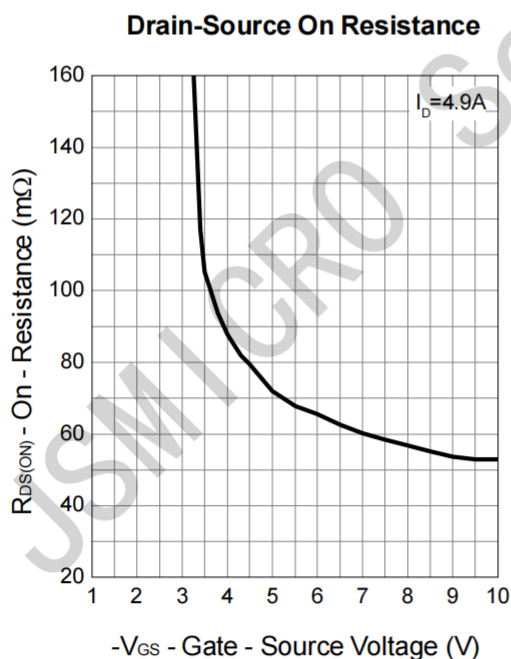
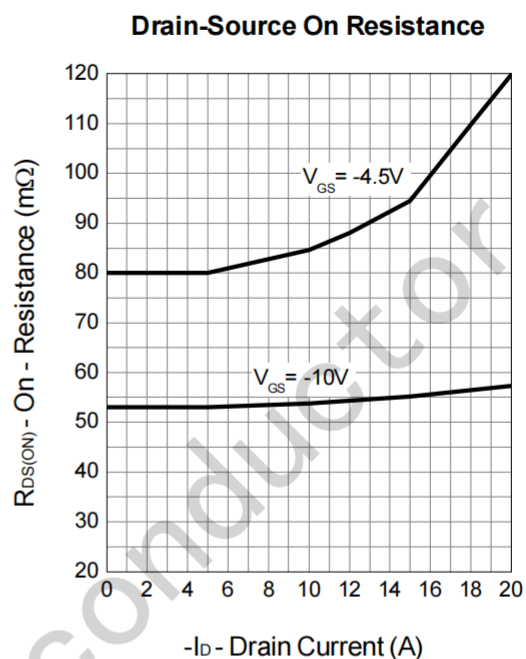
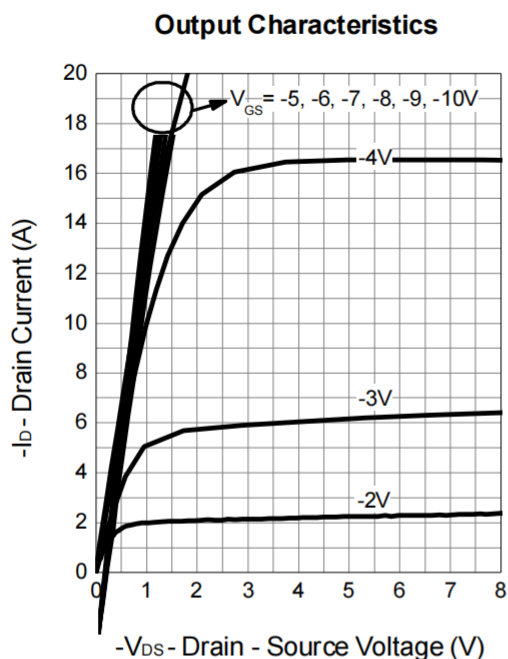
Safe Operation Area



Thermal Transient Impedance

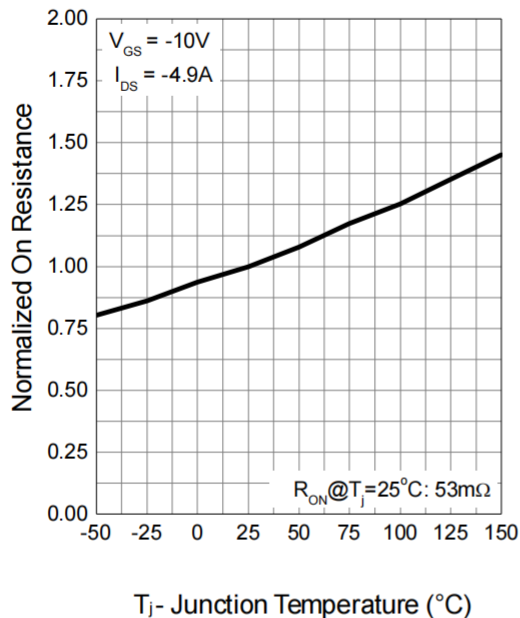


Typical Characteristics (Cont.)

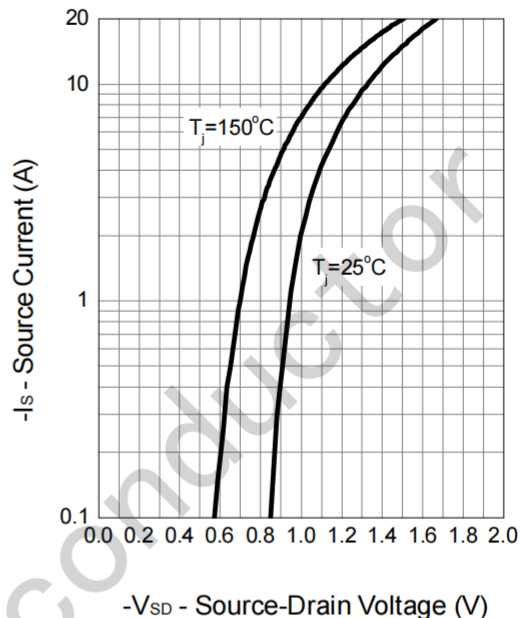


Typical Characteristics (Cont.)

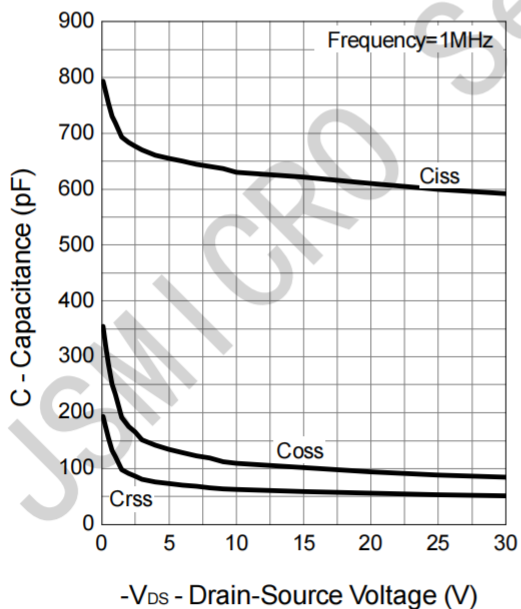
Drain-Source On Resistance



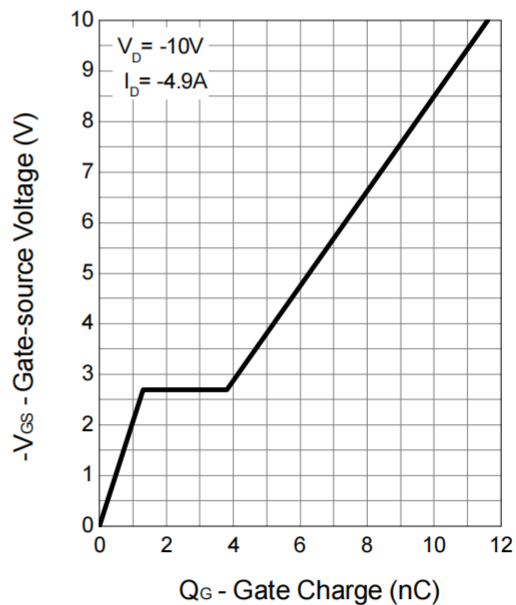
Source-Drain Diode Forward



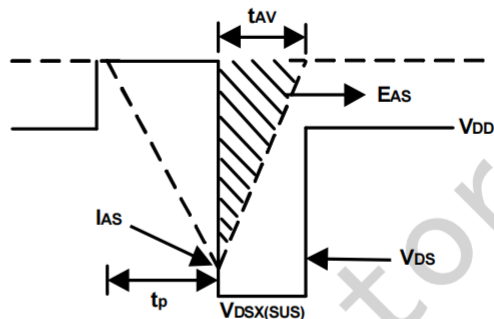
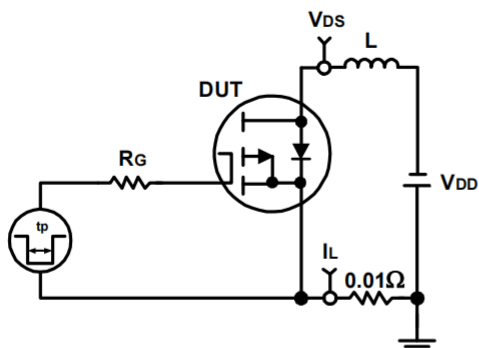
Capacitance



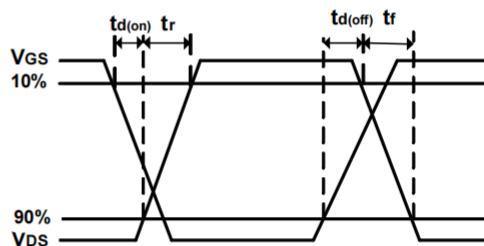
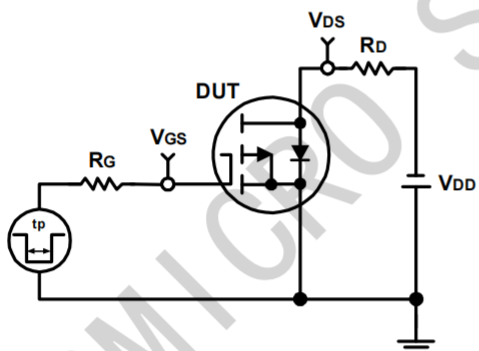
Gate Charge



Avalanche Test Circuit and Waveforms

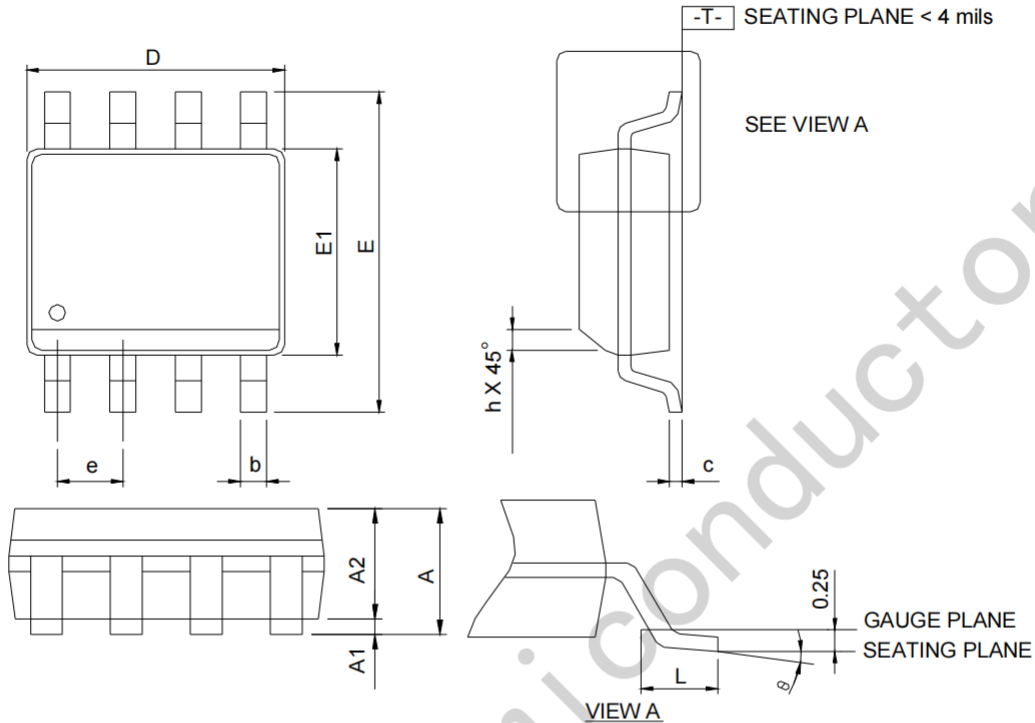


Switching Time Test Circuit and Waveforms



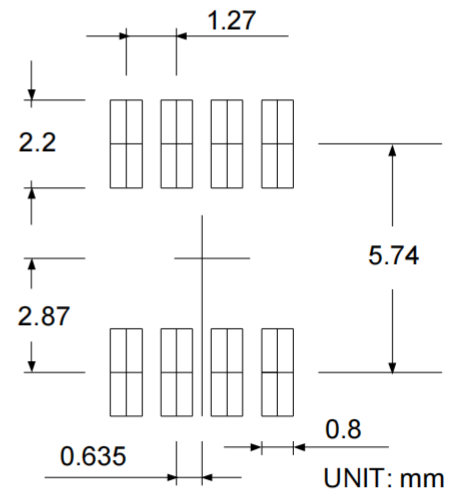
Package Information

SOP-8



SYMBOL	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.