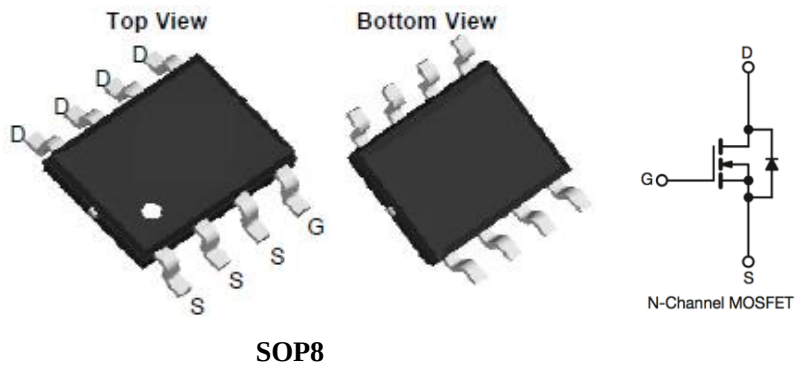


**N-Channel Enhancement Mode Power MOSFET****● Features**

$V_{DS} = 150V$,
 $I_D = 4.7A$
 $R_{DS(ON)} @ V_{GS} = 10V$, TYP 50m Ω
 $R_{DS(ON)} @ V_{GS} = 6V$, TYP 55m Ω

● General Description

- load switch
- Power Management
- DC-DC Converter

● Pin Configurations**● Absolute Maximum Ratings @ $T_A=25^{\circ}C$ unless otherwise noted**

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	150	V
Gate-Source Voltage		V_{GSS}	± 25	V
Drain Current (Continuous) *AC	$T_A=25^{\circ}C$	I_D	4.7	A
	$T_A=70^{\circ}C$		3.8	
Drain Current (Pulse) *B		I_{DM}	16	A
Power Dissipation	$T_A=25^{\circ}C$	P_D	2.5	W
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	$^{\circ}C$

● Thermal Resistance Ratings

Parameter		Symbol	Maximum	Unit
Maximum Junction-to-Ambient	Steady State	R_{thJA}	50	$^{\circ}C/W$



● **Electrical Characteristics** @ $T_A=25^{\circ}\text{C}$ unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static *D						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	150	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 150V, V _{GS} = 0V	--	--	1	μA
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _{DS} = 250μA	2	--	4	V
Gate Leakage Current	I _{GSS}	V _{GS} = ±25V, V _{DS} =0V	--	--	±100	nA
Drain-Source On-state Resistance	R _{DS(on)}	V _{GS} = 10V, I _D =4A	--	50	65	mΩ
	R _{DS(on)}	V _{GS} = 6V, I _D = 4A	--	55	72	mΩ
Diode Forward Voltage	V _{SD}	I _{SD} = 1A , V _{GS} =0V	--	--	1.2	V
Diode Forward Current *AC	I _S	T _A =25°C	--	--	2.1	A
Switching B						
Total Gate Charge	Q _g	V _{DS} = 75V, V _{GS} = 10V, I _{DS} = 4A	--	16.4	--	nC
Gate-Source Charge	Q _{gs}		--	6.2	--	nC
Gate-Drain Charge	Q _{gd}		--	2.7	--	nC
Turn-on Delay Time	t _{d (on)}	V _{DS} = 75V, V _{GEN} = 10V, R _G = 4.5Ω, R _L = 20Ω,	--	9	--	ns
Turn-on Rise Time	t _r		--	34	--	ns
Turn-off Delay Time	t _{d(off)}		--	13.6	--	ns
Turn-Off Fall Time	t _f		--	36.8	--	ns
Dynamic						
Input Capacitance	C _{iss}	V _{DS} =75V,V _{GS} =0V, f=1.0MHz	--	1041	--	pF
Output Capacitance	C _{oss}		--	67	--	pF
Reverse Transfer Capacitance	C _{rss}		--	31	--	pF

A: The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The value in any given application depends on the user's specific board design.

B: Repetitive rating, pulse width limited by junction temperature.

C: The current rating is based on the $t \leq 10s$ junction to ambient thermal resistance rating.

D: Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycles $\leq 2\%$.



● Typical Performance Characteristics ($T_J = 25^\circ\text{C}$, unless otherwise noted)

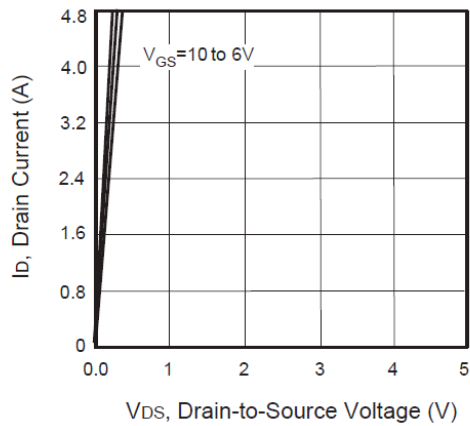


Figure 1. Output Characteristics

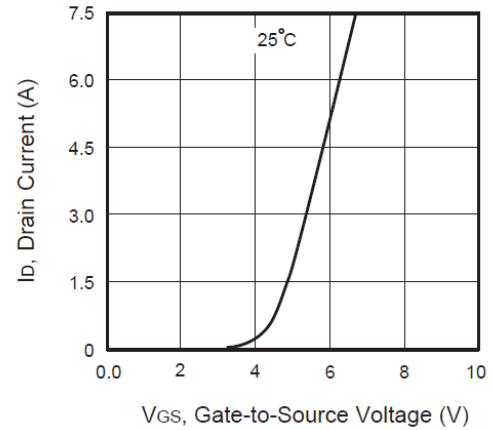


Figure 2. Transfer Characteristics

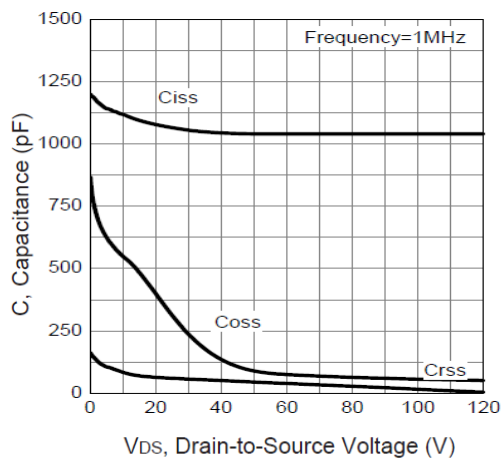


Figure 3. Capacitance

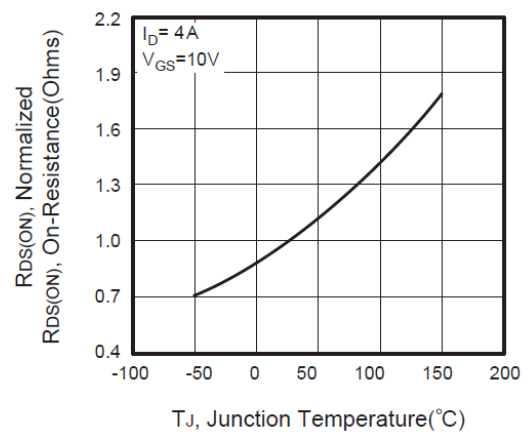


Figure 4. On-Resistance Variation with Temperature

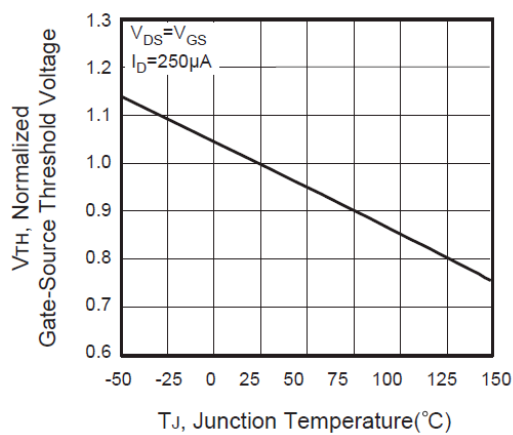


Figure 5. Gate Threshold Variation with Temperature

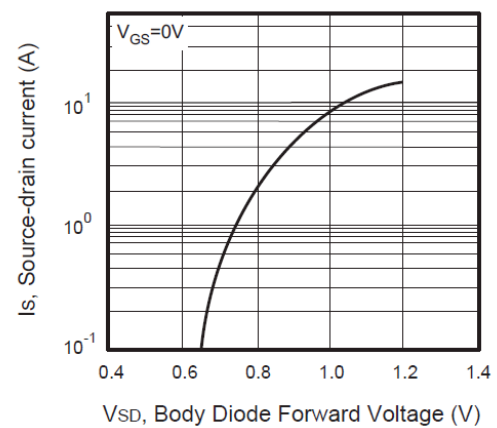
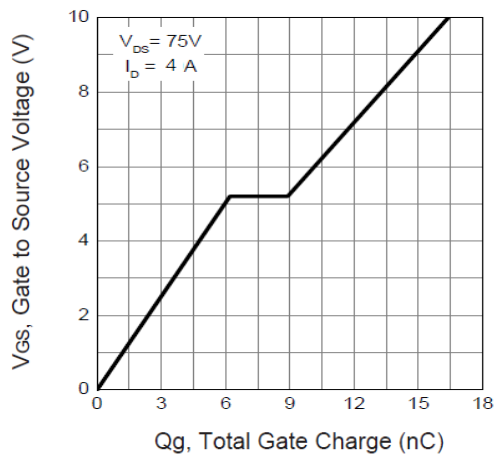
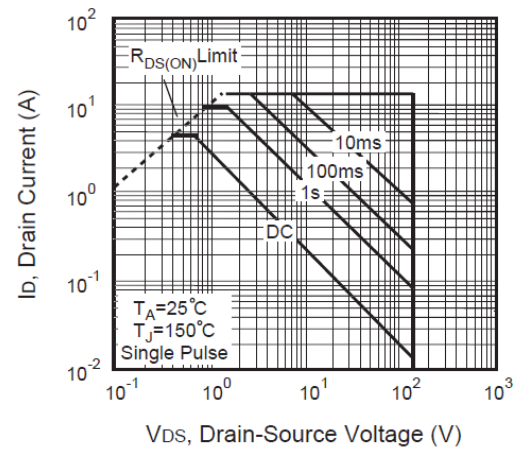
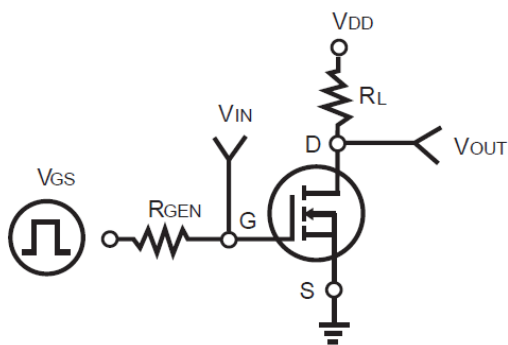
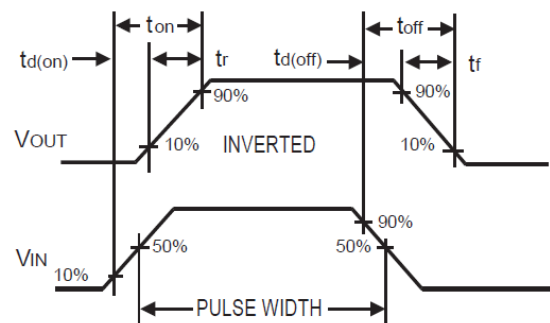
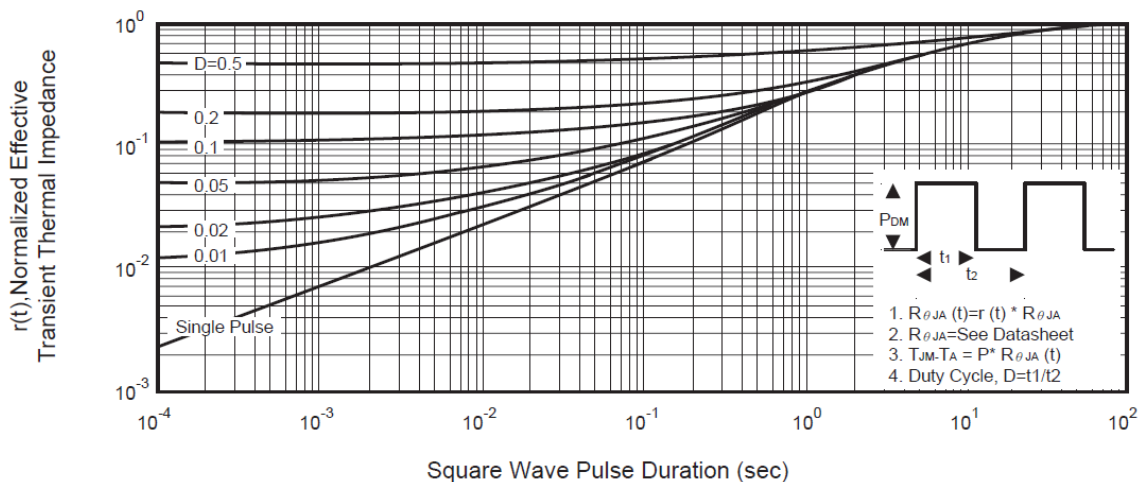
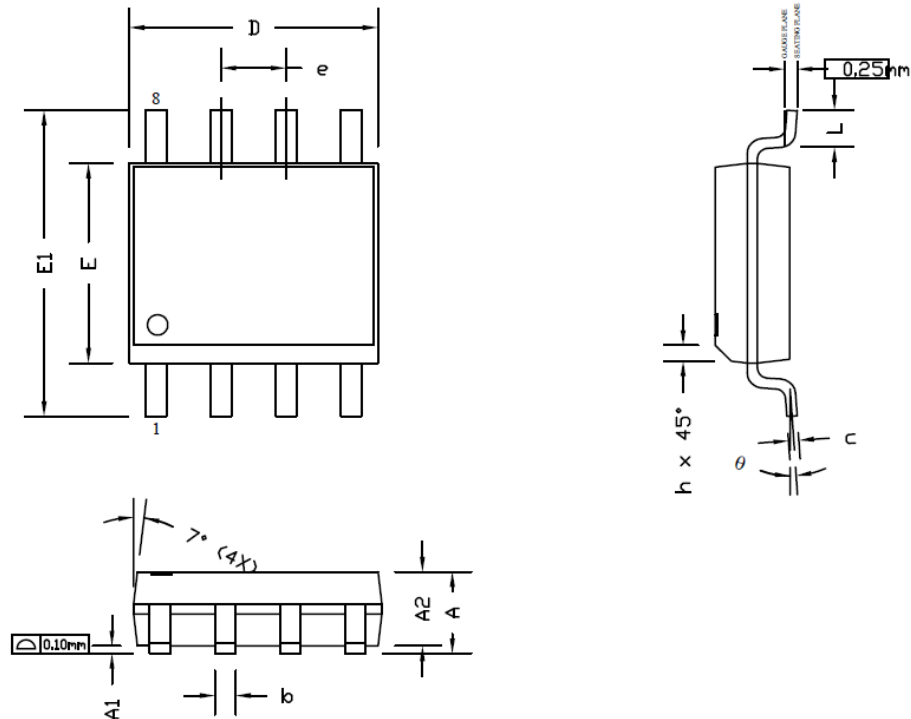


Figure 6. Body Diode Forward Voltage Variation with Source Current

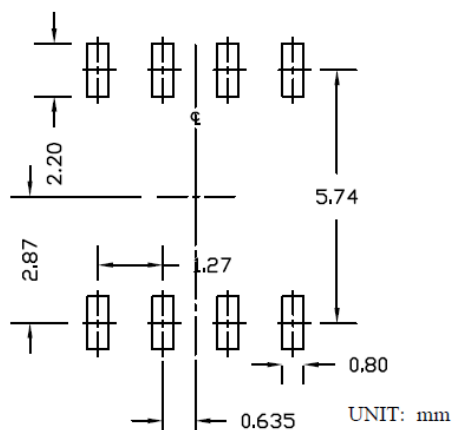
**Figure 7. Gate Charge****Figure 8. Maximum Safe Operating Area****Figure 9. Switching Test Circuit****Figure 10. Switching Waveforms****Figure 11. Normalized Thermal Transient Impedance Curve**



● Package Information



RECOMMENDED LAND PATTERN



SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.35	1.65	1.75	0.053	0.065	0.069
A1	0.10	0.15	0.25	0.004	0.006	0.010
A2	1.25	1.50	1.65	0.049	0.059	0.065
b	0.31	0.41	0.51	0.012	0.016	0.020
c	0.17	0.20	0.25	0.007	0.008	0.010
D	4.80	4.90	5.00	0.189	0.193	0.197
E	3.80	3.90	4.00	0.150	0.154	0.157
e	1.27 BSC			0.050 BSC		
E1	5.80	6.00	6.20	0.228	0.236	0.244
h	0.25	0.30	0.50	0.010	0.012	0.020
L	0.40	0.69	1.27	0.016	0.027	0.050
θ	0°	4°	8°	0°	4°	8°

NOTE

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONS ARE INCLUSIVE OF PLATING.
3. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
MOLD FLASH AT THE NON-LEAD SIDES SHOULD BE LESS THAN 6 MILS EACH.
4. DIMENSION L IS MEASURED IN GAUGE PLANE.
5. CONTROLLING DIMENSION IS MILLIMETER.
CONVERTED INCH DIMENSIONS ARE NOT NECESSARILY EXACT.

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