



Dual N-Channel Power MOSFET

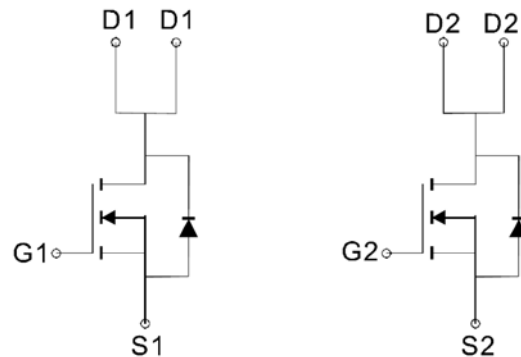
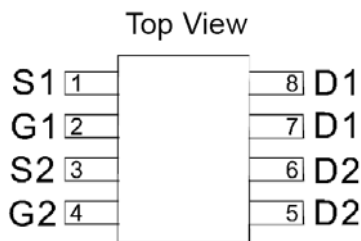
● FEATURES

- $R_{DS(ON)} \cong 16m @V_{GS}=10V$
- $R_{DS(ON)} \cong 20m @V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

● APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

● PIN CONFIGURATION (SOP8)



● Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	$T_A=25^\circ C$	10
		$T_A=70^\circ C$	8.5
Pulsed Drain Current ^C	I_{DM}	32	A
Power Dissipation ^B	P_D	$T_A=25^\circ C$	2
		$T_A=70^\circ C$	1.5
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$



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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
STATIC PARAMETERS						
BV_{DSS}	Drain-Source Breakdown Voltage	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	30			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=24\text{V}, V_{GS}=0\text{V}$			1	uA
I_{GSS}	Gate-Body leakage current	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$			± 0.1	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1	1.4	2	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS}=10\text{V}, I_D=10\text{A}$		13	16	mΩ
		$V_{GS}=4.5\text{V}, I_D=8\text{A}$		16.5	20	
V_{SD}	Diode Forward Voltage	$I_S=2.3\text{A}, V_{GS}=0\text{V}$		0.8	1.2	V
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	$V_{GS}=0\text{V}, V_{DS}=10\text{V}, f=1\text{MHz}$		680		pF
C_{oss}	Output Capacitance			120		
C_{rss}	Reverse Transfer Capacitance			32		
R_g	Gate resistance	$V_{GS}=0\text{V}, V_{DS}=0\text{V}, f=1\text{MHz}$		1		Ω
SWITCHING PARAMETERS						
Q_g	Total Gate Charge	$V_{GS}=4.5\text{V}, V_{DS}=10\text{V}, I_D=8.2\text{A}$		9.5		
Q_{gs}	Gate Source Charge			3.8		
Q_{gd}	Gate Drain Charge			3.2		
$t_{D(on)}$	Turn-On DelayTime	$V_{DD}=15\text{V}, R_L=15\Omega, I_D=1\text{A}, V_{GEN}=10\text{V}, R_G=6\Omega$		12		ns
t_r	Turn-On Rise Time			9		
$t_{D(off)}$	Turn-Off DelayTime			42		
t_f	Turn-Off Fall Time			5		

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. The power dissipation P_D is based on $T_{J(MAX)}=150^\circ\text{C}$, using $\leq 10\text{s}$ junction-to-ambient thermal resistance.

C. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}=150^\circ\text{C}$. Ratings are based on low frequency and duty cycles to keep initial $T_J=25^\circ\text{C}$.

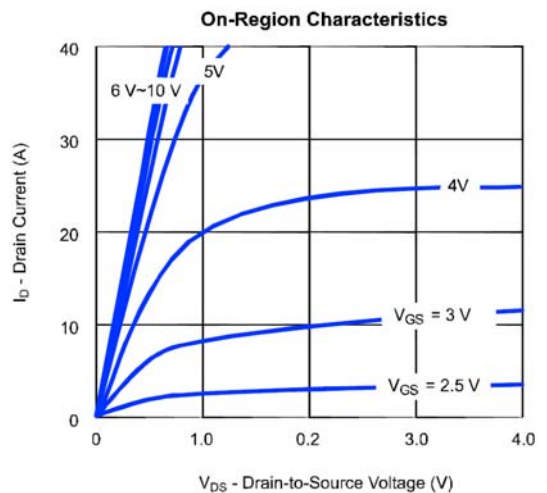
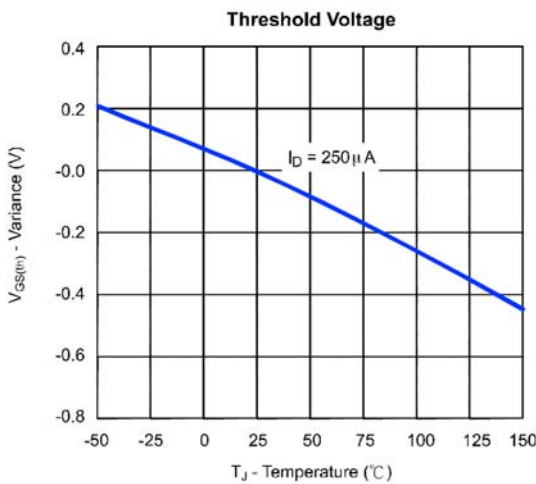
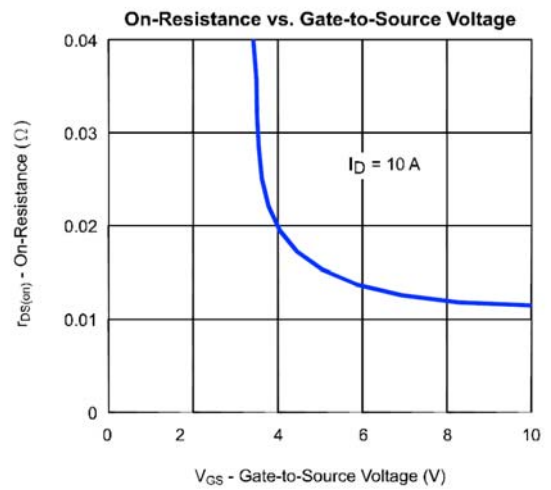
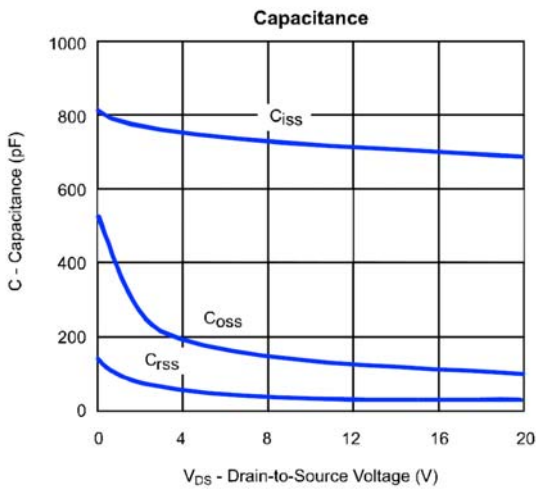
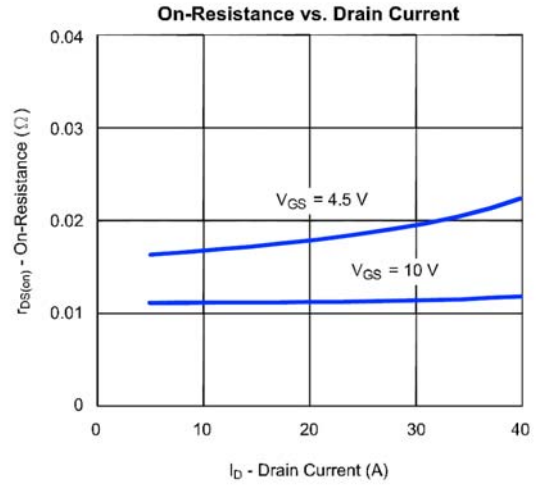
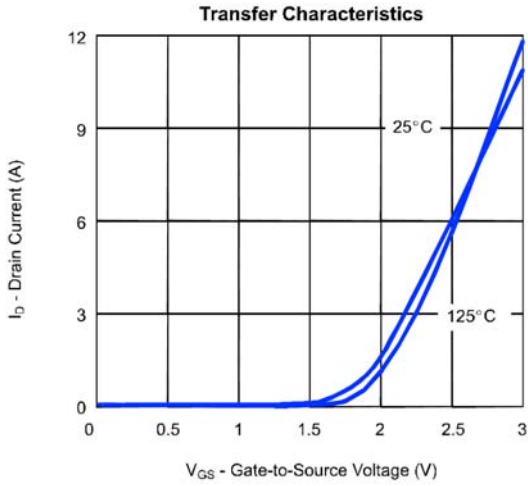
D. The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.

E. The static characteristics in Figures 1 to 6 are obtained using $<300\mu\text{s}$ pulses, duty cycle 0.5% max.

F. These curves are based on the junction-to-ambient thermal impedance which is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, assuming a maximum junction temperature of $T_{J(MAX)}=150^\circ\text{C}$. The SOA curve provides a single pulse rating.

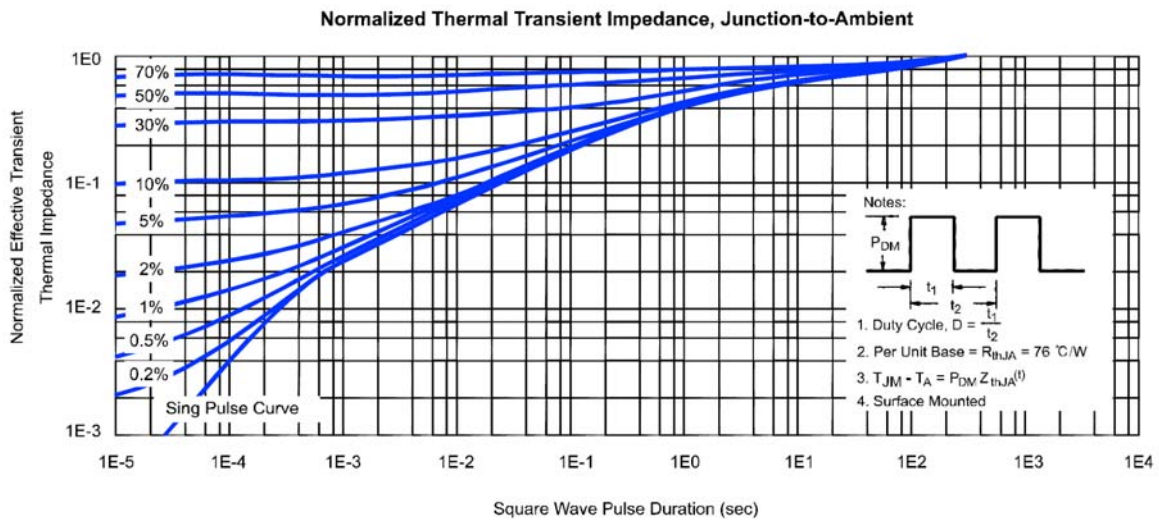
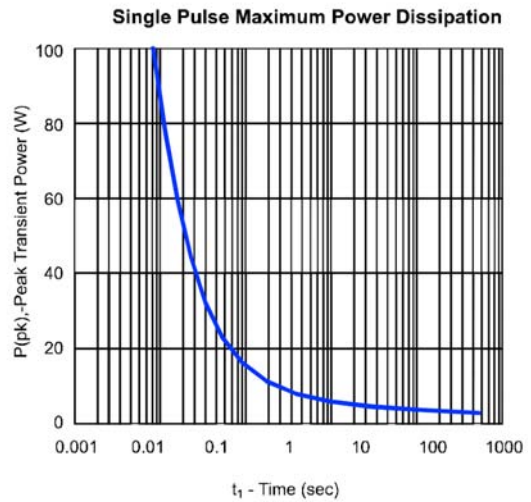
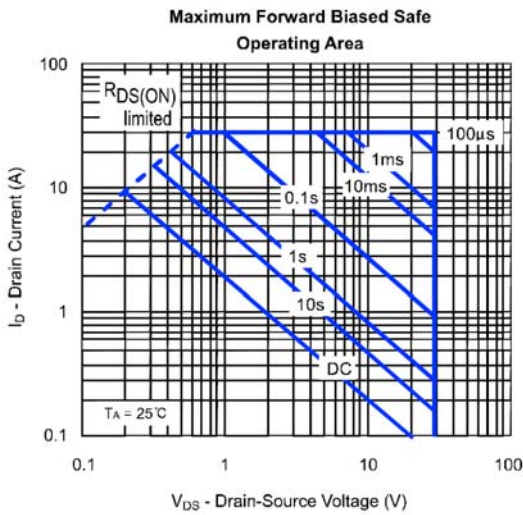
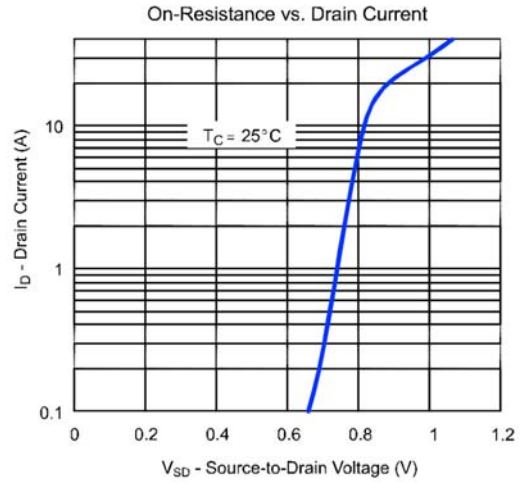
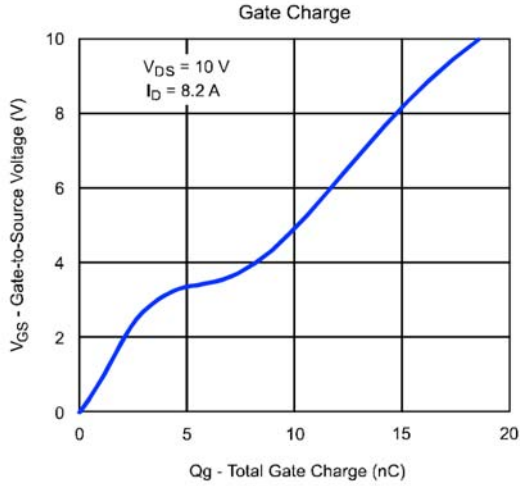


● TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS





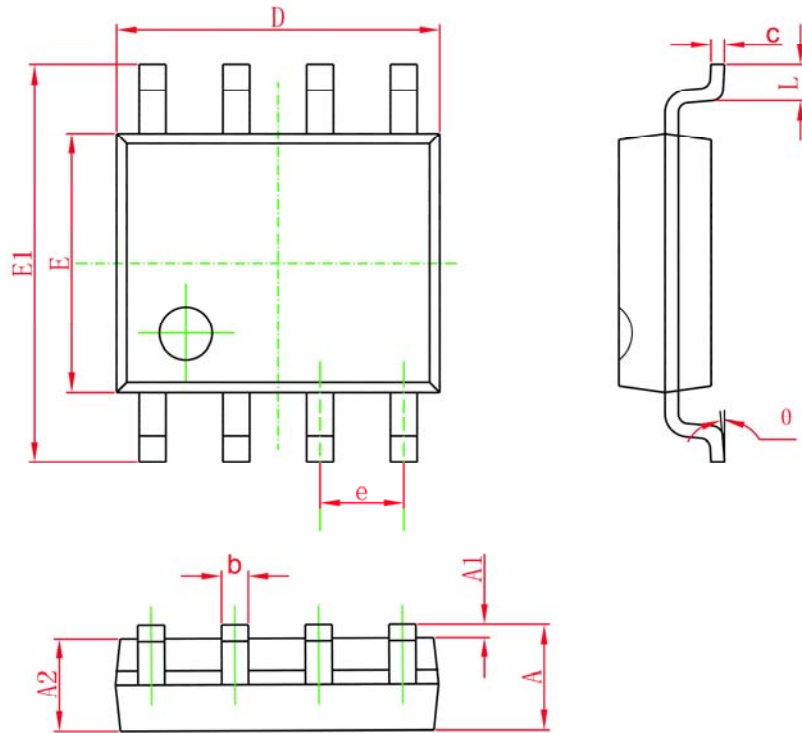
TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS





● Package Information

SOP8 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°