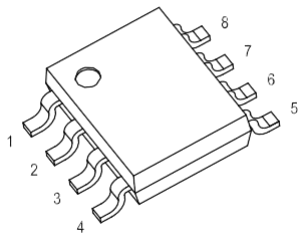
SOP8 Plastic-Encapsulate MOSFETS

$V_{(BR)DSS}$	$R_{DS(on)}$TYP	I_D
60 V	28mΩ@10V 38mΩ@4.5V	8.2A

SOP8



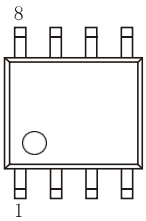
FEATURE

- TrenchFET Power MOSFET
- Low R_{DS}(on)
- Low Gate Charge

APPLICATION

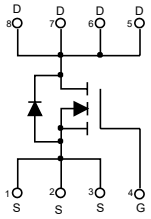
- Load Switch
- PWM applications

MARKING



4438 = Device code.
Solid dot = Green molding compound device, if none, the normal device.
XX = Code.

Equivalent Circuit



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D ①	8.2	A
Pulsed Drain Current	I_{DM} ②	40	A
Power Dissipation	P_D ⑤	2.5	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$ ⑤	50	℃/W
Operating Junction and Storage Temperature Range	T_J ,T_{stg}	-55~+150	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

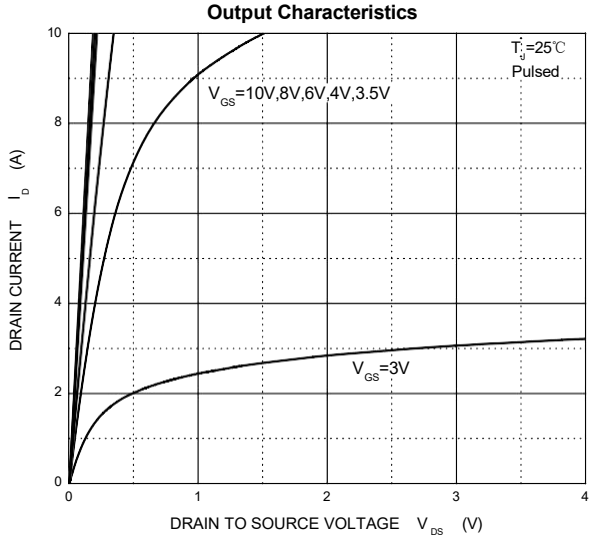
Parameter	Symbol	Test Condition		Min	Typ	Max	Unit
Off characteristics							
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA		60			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =48V, V_{GS} =0V	T_J =25℃			1.0	μA
			T_J =125℃			100	
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V				±100	nA
On characteristics ③							
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA		1.0	1.8	3.0	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =8.2A			24	28	mΩ
		V_{GS} =4.5V, I_D =7.6A			33	38	mΩ
Forward transconductance	g_{FS}	V_{DS} =5V, I_D =8.2A			15		S
Dynamic characteristics ③④							
Input capacitance	C_{iss}	V_{DS} =30V,V_{GS} =0V, f =1MHz			820	1640	pF
Output capacitance	C_{oss}				93	186	
Reverse transfer capacitance	C_{rss}				69	138	
Gate resistance	R_g	f =1MHz			3.8		Ω
Switching characteristics ③④							
Total gate charge	Q_g	V_{GS}=10V, V_{DS}=30V, I_D=6A			21	42	nC
Gate-source charge	Q_{gs}				2.0	4.0	
Gate-drain charge	Q_{gd}				6.6	13	
Turn-on delay time	$t_{d(on)}$	V_{DS}=30V,R_L=3.6Ω, V_{GS}=10V,R_G=3Ω			8.2		ns
Turn-on rise time	t_r				5.5		
Turn-off delay time	$t_{d(off)}$				30		
Turn-off fall time	t_f				5.2		
Drain-Source Diode Characteristics							
Drain-source diode forward voltage	V_{SD} ③	V_{GS} =0V, I_S=1A				1.0	V
Continuous drain-source diode forward current	I_S ①					8.2	A
Pulsed drain-source diode forward current	I_{SM} ②					40	A

Notes:

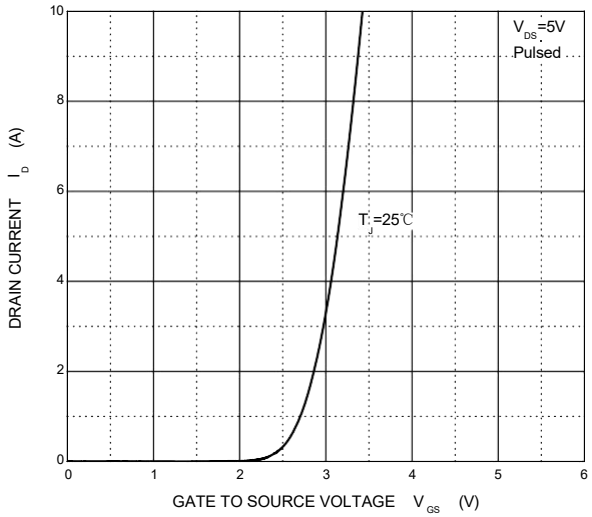
1. T_C=25℃ Limited only by maximum temperature allowed.
2. P_W≤10μs, Duty cycle≤1%.
3. Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.
4. Guaranteed by design, not subject to production.
5. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with Ta=25℃,t ≤10sec.

Typical Characteristics

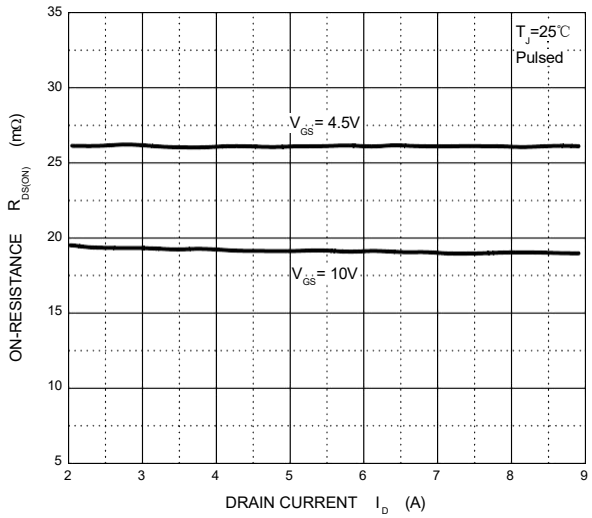
Output Characteristics



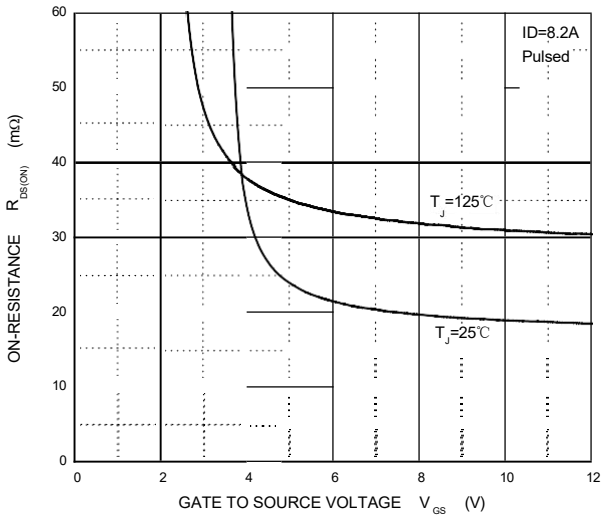
Transfer Characteristics



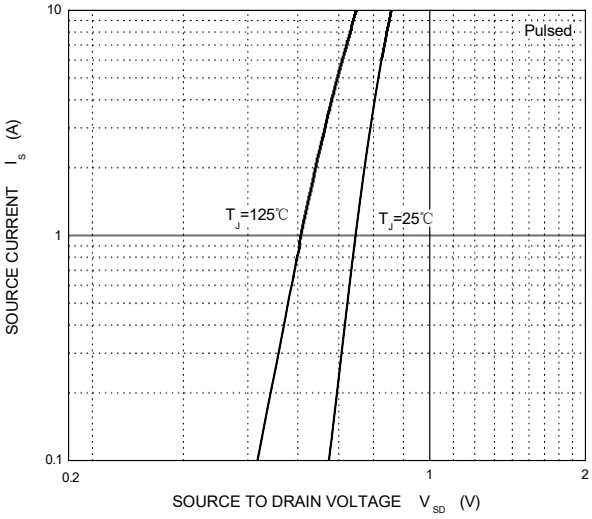
$R_{DS(ON)}$ — I_D



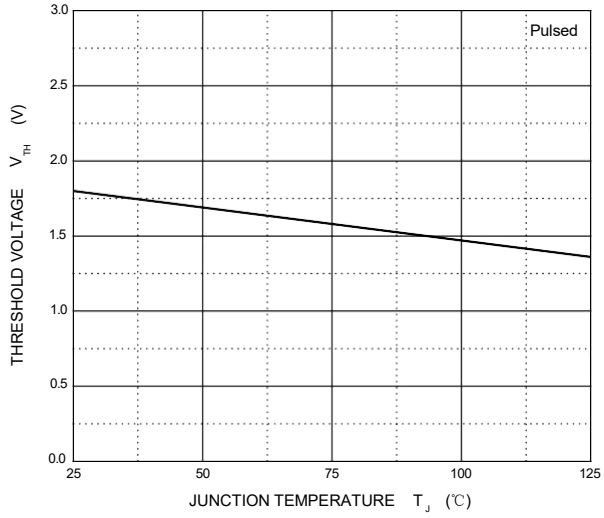
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}

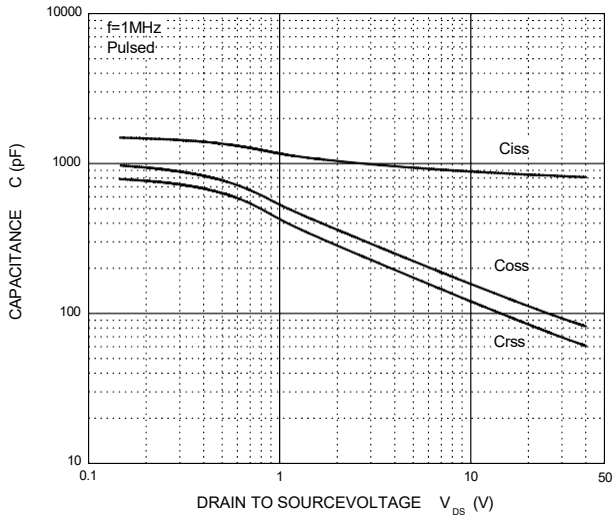


Threshold Voltage

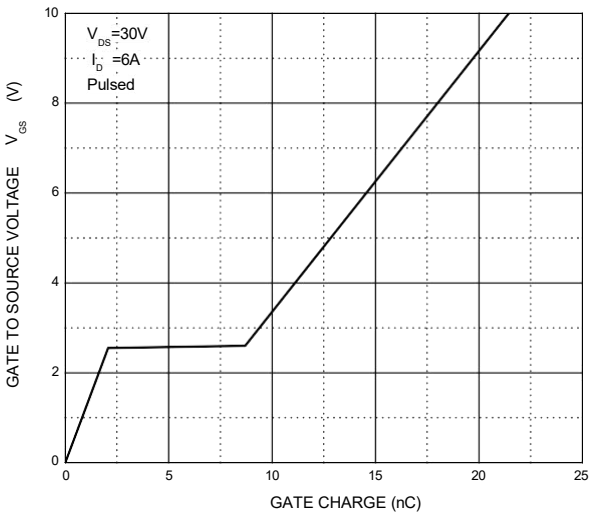


Typical Characteristics

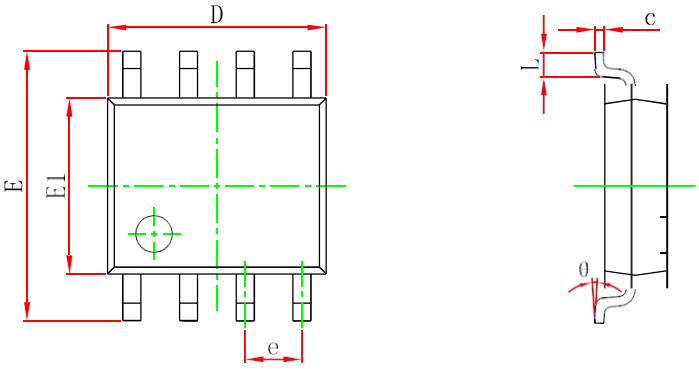
Capacitances



Gate Charge

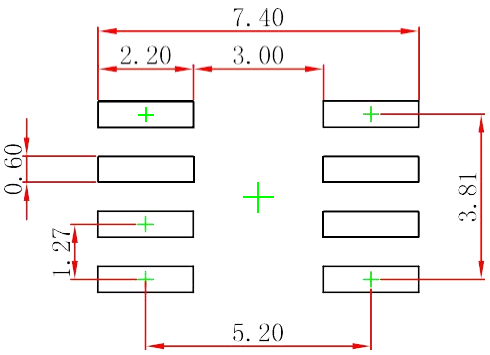


SOP8 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	**Max**	**Min**	**Max**
A	1.450	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	0.007	0.010
D	4.700	5.100	0.185	0.201
e	1.270（BSC）		0.050（BSC）	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

SOP8 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.