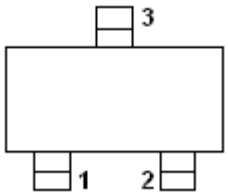
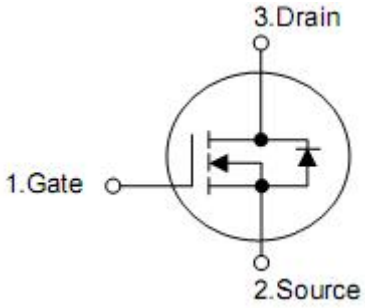
1. Features

- V_{DS}=30V,$R_{DS(on)}$=0.055Ω@V_{GS}=10V,I_D=2.5A
- V_{DS}=30V,$R_{DS(on)}$=0.080Ω@V_{GS}=4.5V,I_D=2.0A
- Power MOSFET
- 100% R_g tested

2.Symbol





Pin	Function
1	Gate
2	Source
3	Drain

3. Absolute maximum ratings

(T_A=25°C,unless otherwise noted)

Parameter		Symbol	Rating	Units
Drain-source voltage		V_{DS}	30	V
Gate-source voltage		V_{GS}	±12	V
Drain current continuous (T_J=150 ºC) [a, b]	T_A=25°C	I_D	2.5	A
	T_A=70°C		2.0	
Pulsed drain current [a]		I_{DM}	10	
Continuous source current (diode conduction) [a, b]		I_S	1.25	
Power dissipation [a, b]	T_A=25°C	P_D	1.25	W
	T_A=70°C		0.8	
Junction and storage temperature range		T_J,T_{STG}	-55 to150	ºC

Parameter		Symbol	Typ	Max	Units
Maximum junction-ambient [a]	t≤5 sec	R_{thJA}	-	100	ºC/W
	steady state		166	-	

Notes
a. Surface mounted on FR4 board,
b. t≤5 sec.

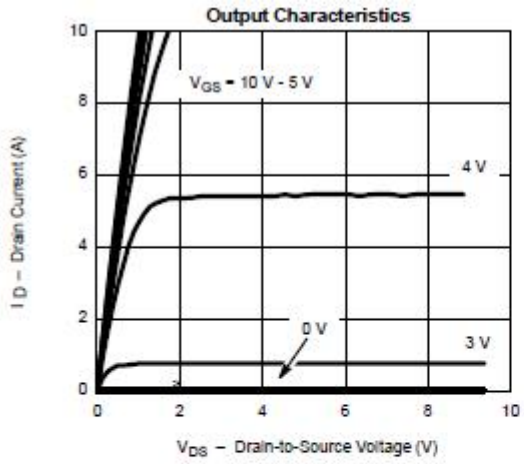
4. Electrical characteristics

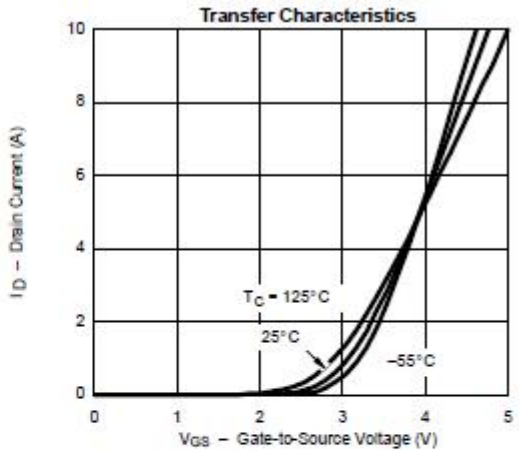
(T_A=25°C,unless otherwise noted)

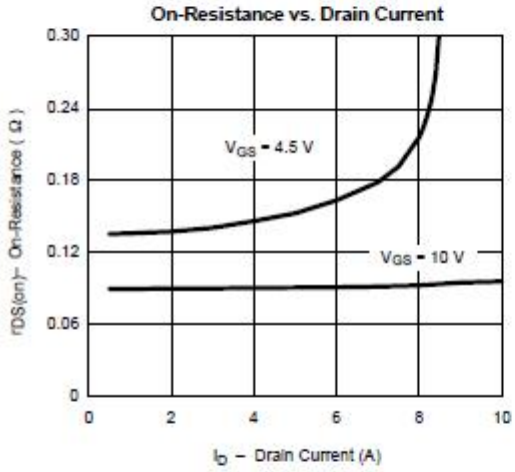
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{DS}=0V,I_D=250μA	30	-	-	V
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1	-	-	V
Gate- body leakage	I_{GSS}	V_{GS}=±12V, V_{DS}=0V	-	-	±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS}=25V, V_{GS}=0V	-	-	1	μA
On-state drain current [a]	$I_{D(on)}$	V_{DS}≥4.5V, V_{GS}=10V	6	-	-	A
		V_{DS}≥4.5V, V_{GS}=4.5V	4	-	-	
Static drain-source on-resistance [a]	$R_{DS(on)}$	V_{GS}=10V,I_D=2.5A	-	-	0.055	Ω
		V_{GS}=4.5V,I_D=2.0A	-	-	0.080	
Forward transconductance [a]	gfs	V_{DS}=4.5V, I_D=2.5A	-	4.8	-	S
Diode forward voltage	V_{SD}	V_{GS}=0V,I_S=1.25A	-	0.77	1.2	V
Dynamic[b]						
Total gate charge	Q_g	V_{DS}=15V, V_{GS}=5V,I_D=2.5A	-	2.4	4	nC
Total gate charge	Q_{gt}	V_{DS}=15V, V_{GS}=10V I_D=2.5A		4.5	10	
Gate-source charge	Q_{gs}		-	0.8		
Gate-drain charge	Q_{gd}		-	1.0	-	
Input capacitance	C_{iss}	V_{DS}=15V,V_{GS}=0V, f=1MHz	-	240	-	pF
Output capacitance	C_{oss}		-	110	-	
Reverse transfer capacitance	C_{rss}		-	17	-	
Switching						
Turn-on delay time	$t_{d(on)}$	V_{DD}=15V, I_D =1A, R_L=15Ω, R_G=6Ω, V_{GEN}=10V	-	8	20	ns
Rise time	t_r		-	12	30	
Turn-off delay time	$t_{d(off)}$		-	17	35	
Fall time	t_f		-	8	20	

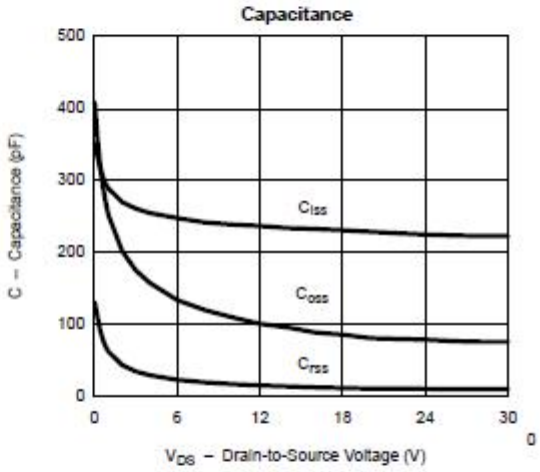
Notes
a. Guaranteed by design, not subject to production testing.
b. Pulse test; pulse width≤300μs, duty cycle≤2%.

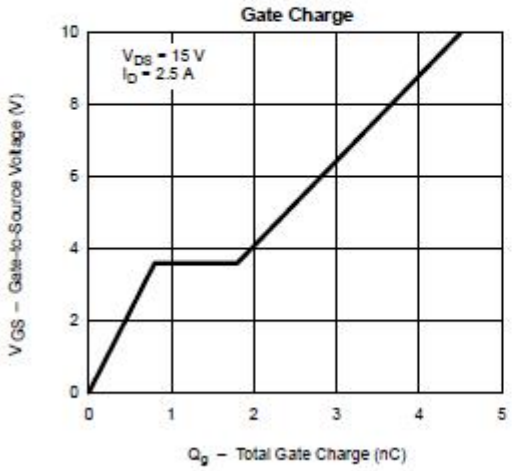
5. Test circuits and waveforms

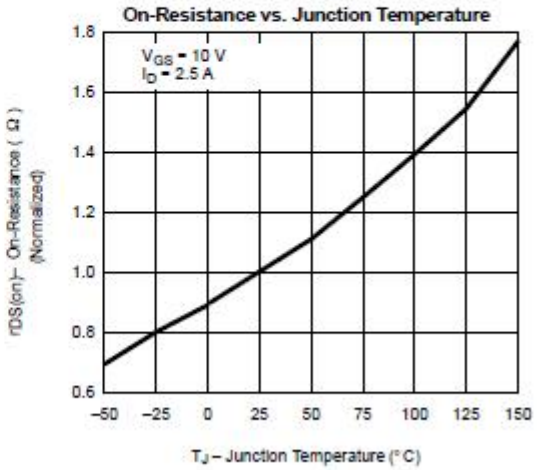


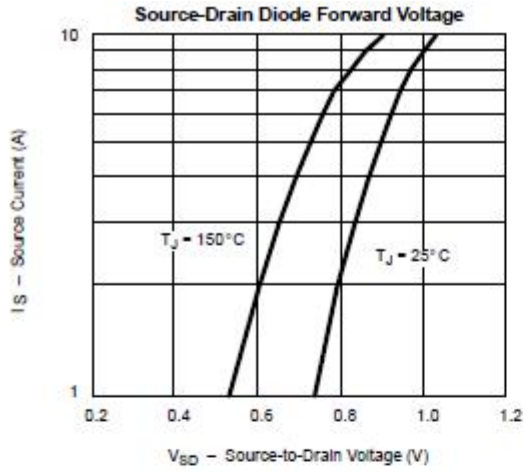


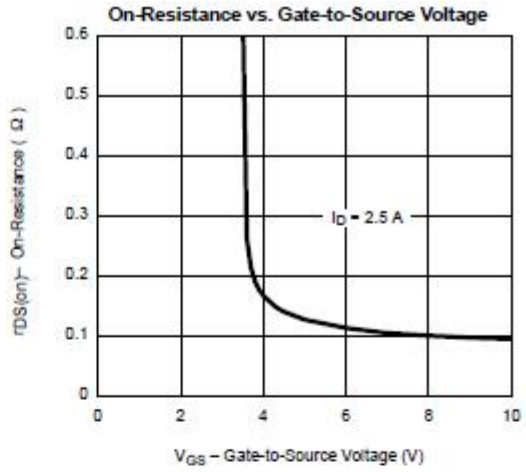


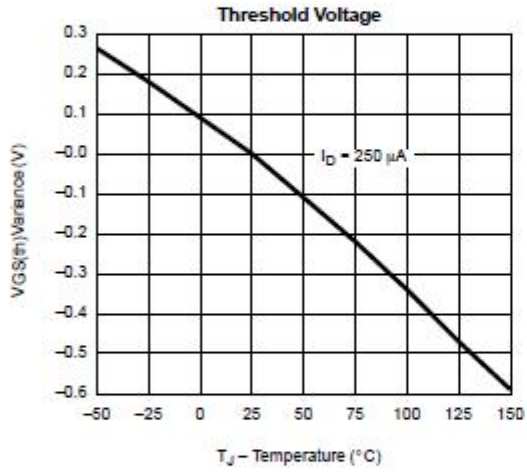


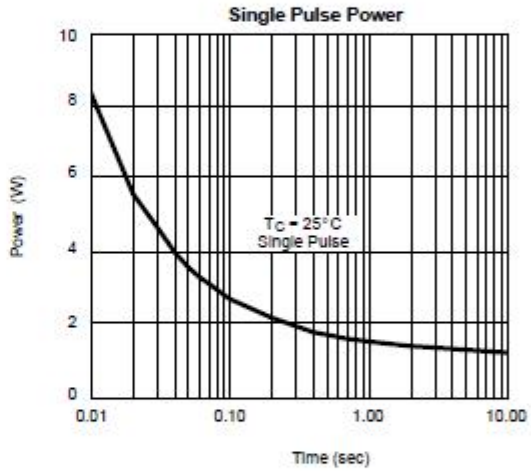


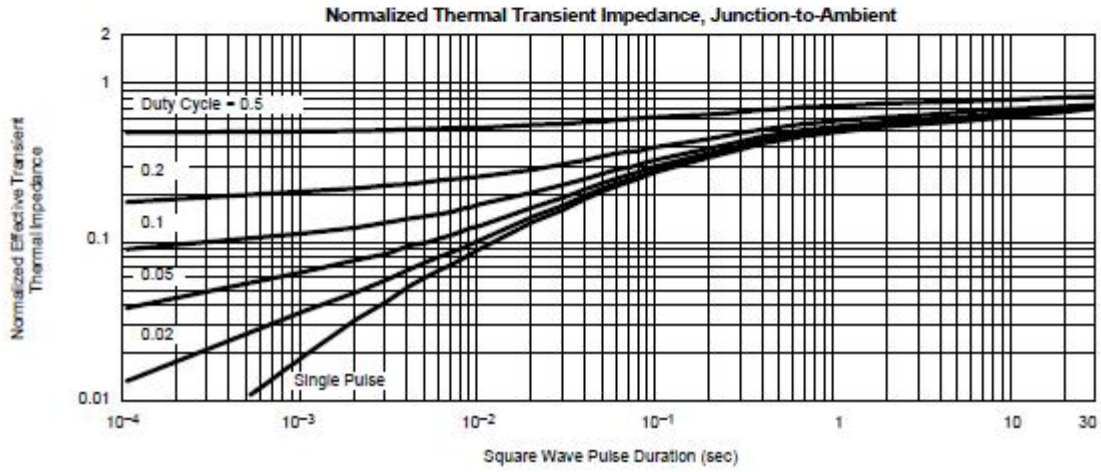



Source-Drain Diode Forward Voltage
IS – Source Current (A)
10
1
TJ = 150°C
TJ = 25°C
0.2
0.4
0.6
0.8
1.0
1.2
VSD – Source-to-Drain Voltage (V)


On-Resistance vs. Gate-to-Source Voltage
rDS(on) – On-Resistance (Ω)
0.6
0.5
0.4
0.3
0.2
0.1
0
ID = 2.5 A
0
2
4
6
8
10
VGS – Gate-to-Source Voltage (V)


Threshold Voltage
VGS(th) Variance (V)
0.3
0.2
0.1
–0.0
–0.1
–0.2
–0.3
–0.4
–0.5
–0.6
ID = 250 µA
–50
–25
0
25
50
75
100
125
150
TJ – Temperature (°C)


Single Pulse Power
Power (W)
10
8
6
4
2
0
TC = 25°C
Single Pulse
0.01
0.10
1.00
10.00
Time (sec)


Normalized Thermal Transient Impedance, Junction-to-Ambient
Normalized Effective Transient Thermal Impedance
2
1
0.1
0.01
Duty Cycle = 0.5
0.2
0.1
0.05
0.02
Single Pulse
10–4
10–3
10–2
10–1
1
10
30
Square Wave Pulse Duration (sec)