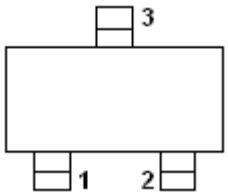
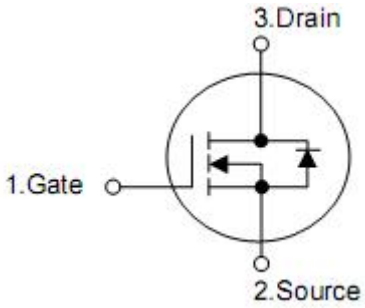
1. Features

- V_{DS}=20V,$R_{DS(on)}$=0.065Ω@V_{GS}=4.5V,I_D=3.0A
- V_{DS}=20V,$R_{DS(on)}$=0.090Ω@V_{GS}=2.5V,I_D=2.0A

2.Symbol





Pin	Function
1	Gate
2	Source
3	Drain

3. Absolute maximum ratings

Parameter		Symbol	Rating	Units
Drain-source voltage		V_{DS}	20	V
Gate-source voltage		V_{GS}	±8	V
Drain current continuous (T_J=150 ºC) [b]	T_A=25°C	I_D	3.0	A
	T_A=70°C		2.0	
Pulsed drain current [a]		I_{DM}	10	
Continuous source current (diode conduction)[b]		I_S	1.6	
Power dissipation [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	Rating	Units
Maximum junction-ambient [b]	R_{thJA}	100	ºC/W
Maximum junction-ambient [c]		166	

Notes
a. Pulse width limited by maximum junction temperature.
b. Surface mounted on FR4 board, t≤5 sec.
c. Surface mounted on FR4 board.

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4. Electrical characteristics

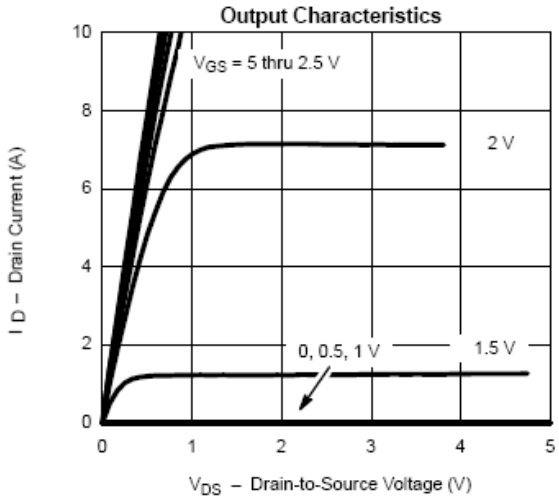
(T_A=25°C,unless otherwise noted)

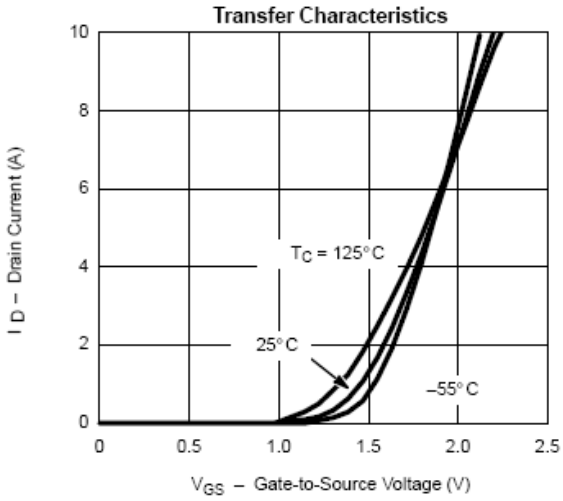
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	20	-	-	V
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.5	-	1.0	V
Gate- body leakage	I_{GSS}	V_{GS}=±8V, V_{DS}=0V	-	-	±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS}=16V, V_{GS}=0V	-	-	50	nA
On-state drain current [a]	$I_{D(on)}$	V_{DS}≥5V, V_{GS}=4.5V	6	-	-	A
		V_{DS}≥5V, V_{GS}=2.5V	4	-	-	
Static drain-source on-resistance [a]	$R_{DS(on)}$	V_{GS}=4.5V,I_D=3.0A	-	0.06	0.065	Ω
		V_{GS}=2.5V,I_D=2.0A	-	0.085	0.09	
Forward transconductance [a]	gfs	V_{DS}=5V, I_D=-3.0A	-	10	-	S
Diode forward voltage	V_{SD}	V_{GS}=0V,I_S=1.0A	-	-	1.28	V
Total gate charge	Q_g	V_{DS}=10V, V_{GS}=4.5V I_D=3.6A	-	5.4	10	nC
Gate-source charge	Q_{gs}		-	0.65	-	
Gate-drain charge	Q_{gd}		-	1.6	-	
Input capacitance	C_{iss}	V_{DS}=10V,V_{GS}=0V, f=1MHz	-	340	-	pF
Output capacitance	C_{oss}		-	115	-	
Reverse transfer capacitance	C_{rss}		-	33	-	
Turn-on delay time	$t_{d(on)}$	V_{DD}=10V, I_D =3.6A, R_L=5.5Ω, R_G=6Ω, V_{GEN}=4.5V	-	12	25	ns
Rise time	t_r		-	36	60	
Turn-off delay time	$t_{d(off)}$		-	34	60	
Fall time	t_f		-	10	25	

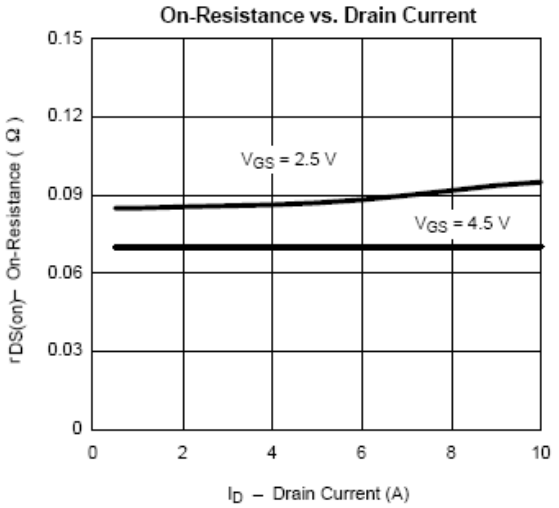
Notes

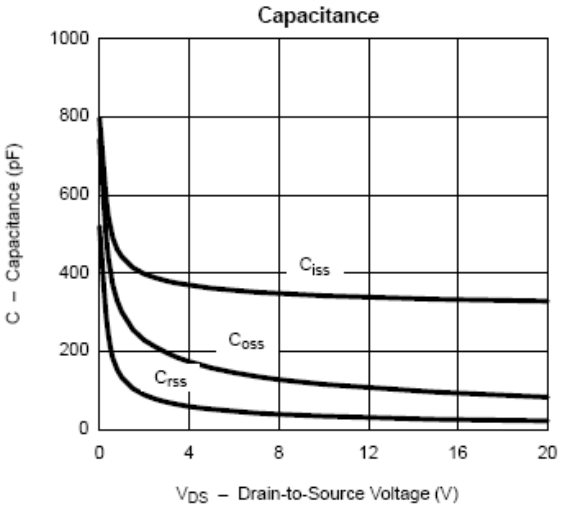
a. Pulse test:pulse width≤300μs,duty cycle≤2%

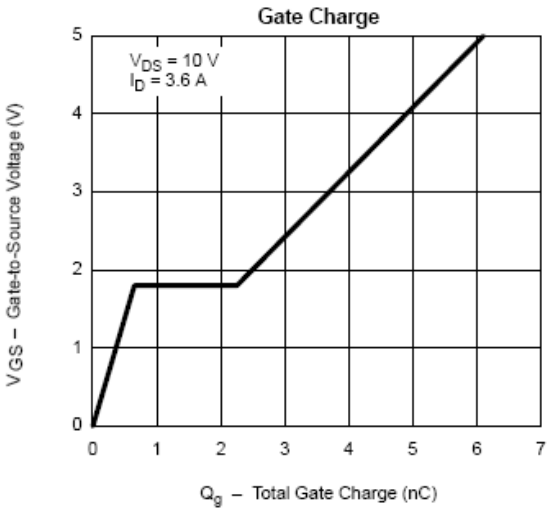
5. Test circuits and waveforms

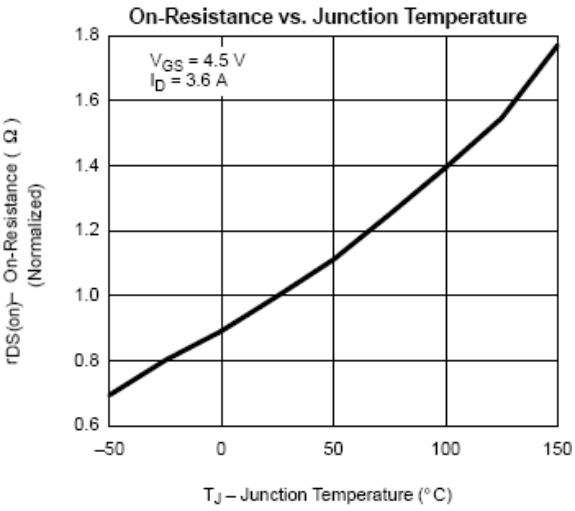




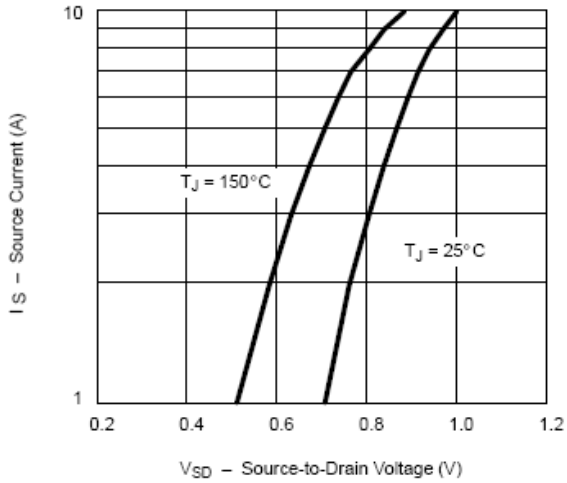




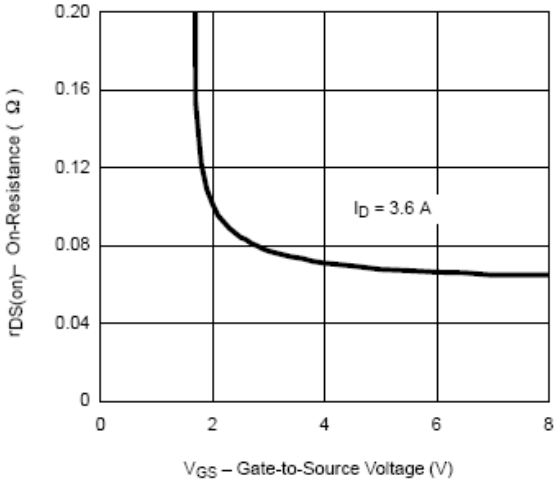




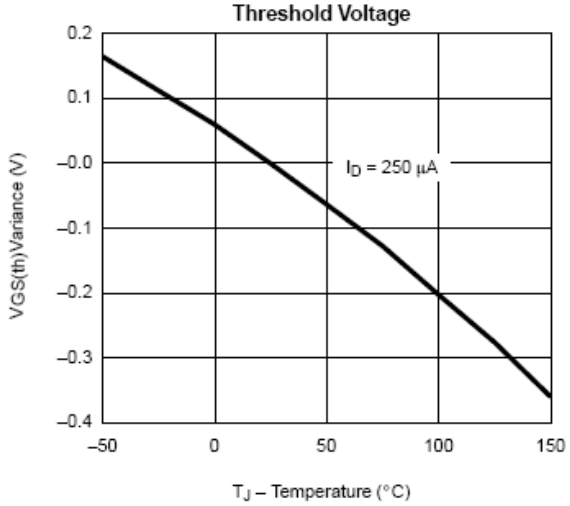
Source-Drain Diode Forward Voltage



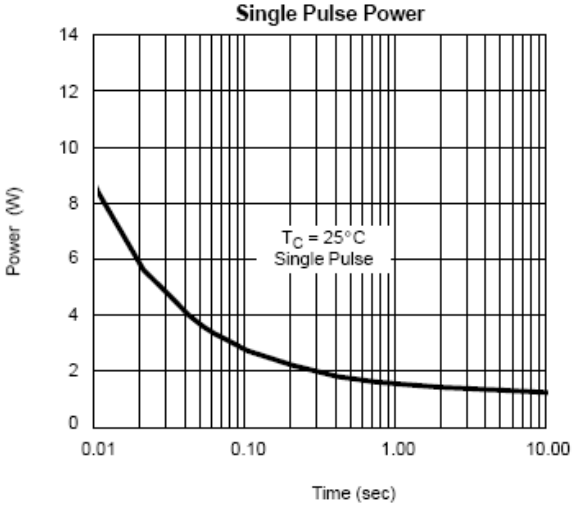
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient