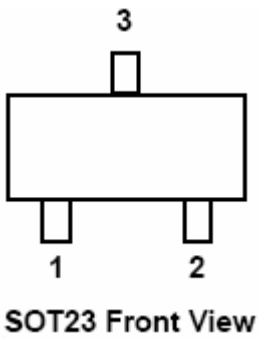
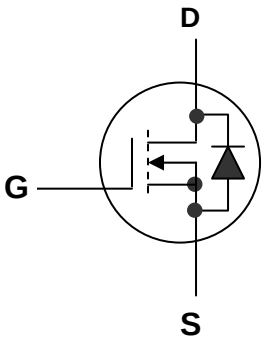
1. Features

- V_{DS}=20V,$R_{DS(ON)}$=30mΩ@ V_{GS}=10V,I_D=6.0A
- V_{DS}=20V,$R_{DS(ON)}$=40mΩ@ V_{GS}=4.5V,I_D=3.0A
- V_{DS}=20V,$R_{DS(ON)}$=55mΩ@ V_{GS}=2.5V,I_D=2.0A

2. Pin information



SOT23 Front View



Pin	Function
1	Gate
2	Source
3	Drain

3. Maximum ratings

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	20	V
Gate-source voltage	V_{GS}	±10	V
Drain current-continuous*T_J=125℃ pulsed	I_D	6.0	A
Peak drain current	I_{DM}	20	A
Power dissipation*	P_D	1.25	W
Thermal resistance,junction-ambient	R_{thJA}	100	°C /W
Operating junction and storage temperature range	T_j ,T_{stg}	-55～150	°C

*Surface Mounted on FR 4 Board,t≤10 sec.

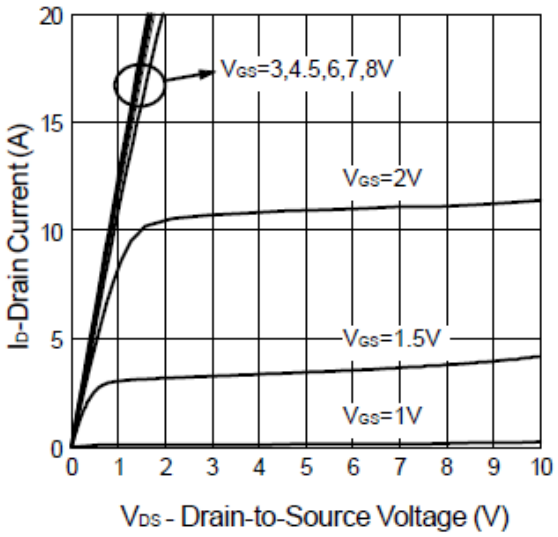
6. Electrical characteristics

（unless otherwise noted，Ta=25°C）

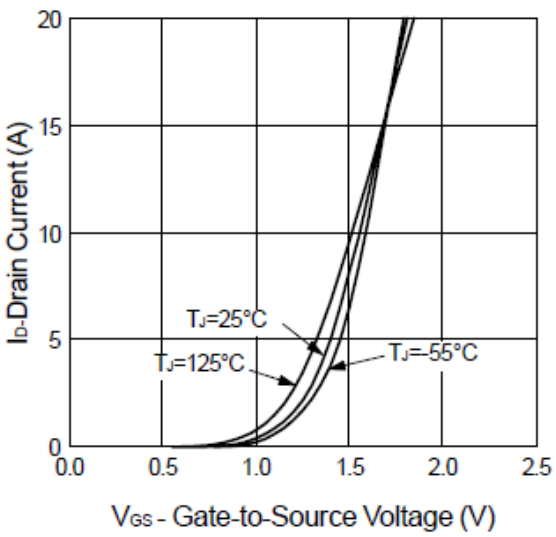
Characteristic	Symbol	Test condition	Min	Typ	Max	Unit
Drain-source breakdown voltage	V_{DSS}	V_{GS}=0V, I_D =250μA	20	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=16V, V_{GS}=0V	-	-	1.0	μA
Gate-body leakage	I_{GSS}	V_{GS}=±10V, V_{GS}=0V	-	-	±100	nA
Gate threshold voltage*	$V_{GS(th)}$	V_{DS}= V_{GS} ,I_D=250μA	0.5	0.78	1.0	V
Drain-source on-state resistance*	$R_{DS(on)}$	V_{GS}=10V, I_D=6.0A V_{GS}=2.5V, I_D=3.0A V_{GS}=1.8V, I_D=2.0A	-	28 38 52	30 40 55	mΩ
On-state drain current*	$I_{D(on)}$	V_{DS}=5V,V_{GS}=4.5V	5	-	-	A
Forward transconductance*	g_{fs}	V_{DS}=15$V_{DS(on)}$,I_D=5A	30	-	-	S
Input capacitance	C_{iss}	V_{DS}=15V, V_{GS}=0V,f=1MHz	-	888	-	pF
Output capacitance	C_{oss}		-	144	-	
Reverse transfer capacitance	C_{rss}		-	115	-	
Total gate charge	Q_g	V_{DS}=10V, I_D=3.5A, V_{GS}=4.5V		16.8	-	nC
Gate-source charge	Q_{gs}			2.5	-	
Gate-drain charge	Q_{gd}			5.4	-	
Turn-on delay time	$t_{d(on)}$	V_{DD}=10V,I_D=1A,R_G=6Ω, R_L=10Ω	-	31.8	-	ns
Rise time	t_r		-	14.5	-	
Turn-off delay time	$t_{d(off)}$		-	50.3	-	
Fall time	t_f		-	31.9	-	
Drain-source diode forward current*	I_S		-	-	1.25	A
Diode forward voltage	V_{SD}	V_{GS}=0V, I_S=1.25A	-	0.825	1.3	V

7. Package outline

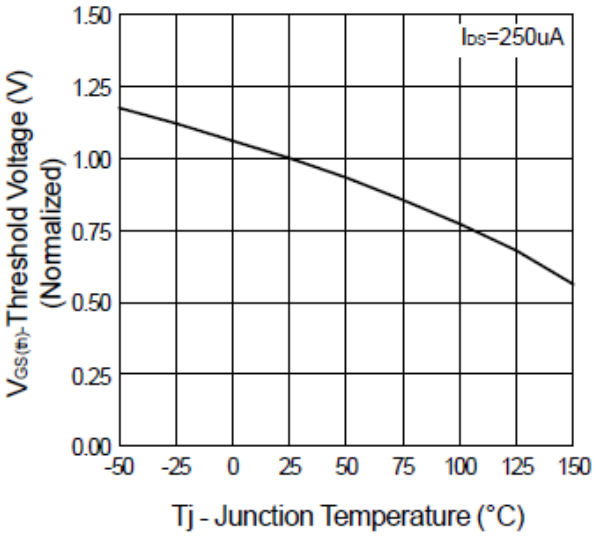
Output Characteristics



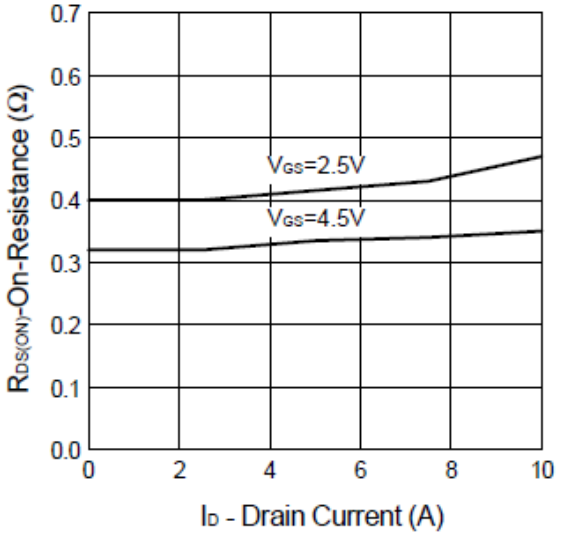
Transfer Characteristics



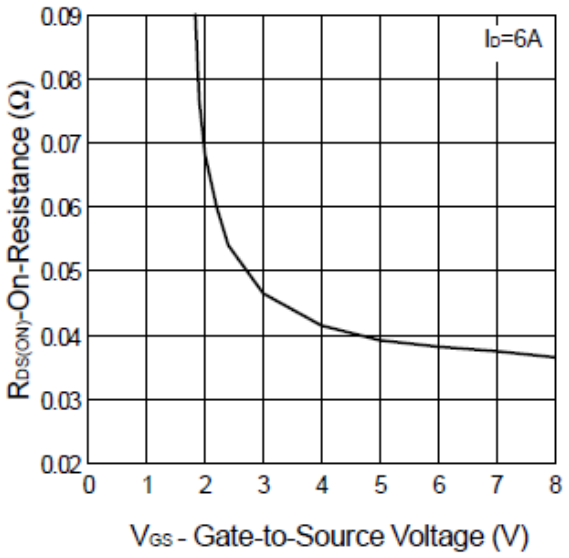
Threshold Voltage vs. Junction Temperature



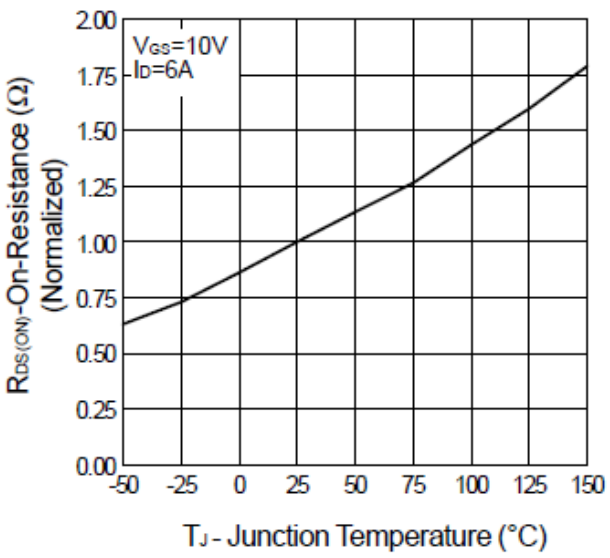
On-Resistance vs. Drain Current



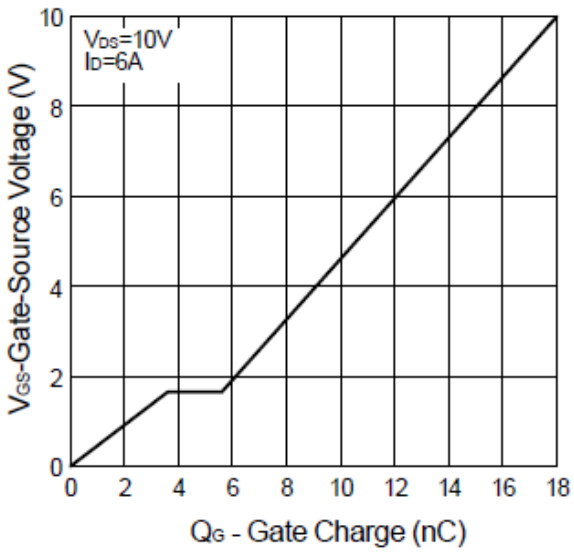
On-Resistance vs. Gate-to-Source Voltage



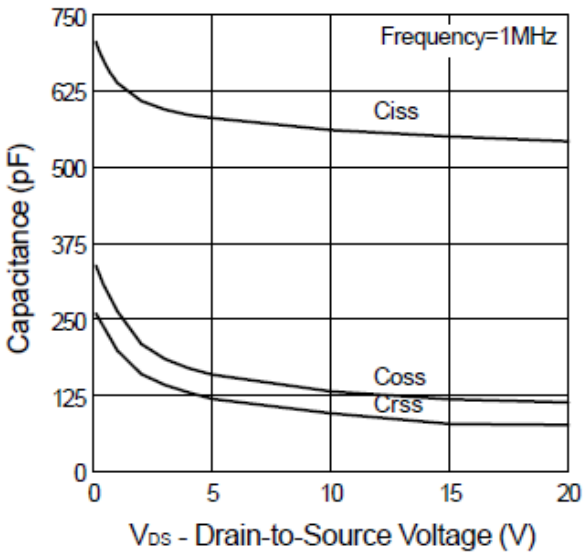
On-Resistance vs. Junction Temperature



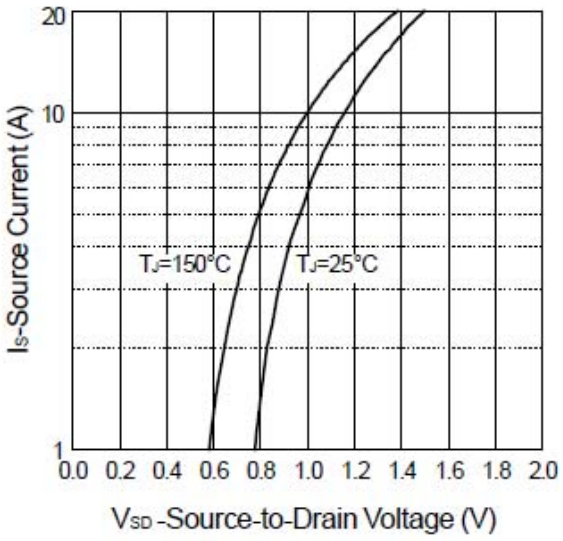
Gate Charge



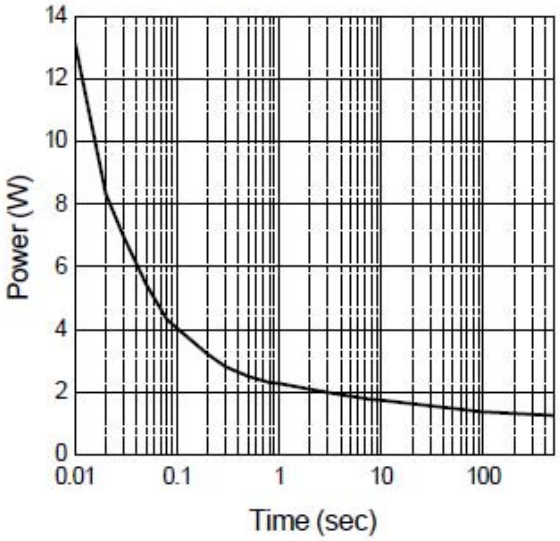
Capacitance



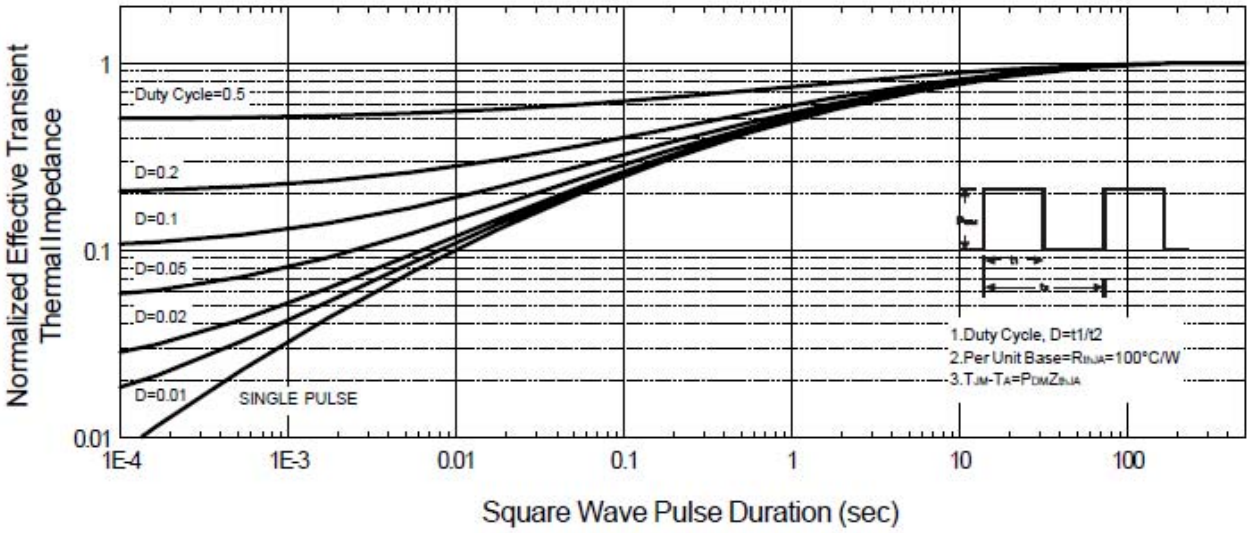
Source-Drain Diode Forward Voltage



Single Pulse Power



Normalized Thermal Transient Impedence, Junction to Ambient



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