

TSSOP-8 Plastic-Encapsulate MOSFETS

FS8205A MOSFET(N-Channel)

FEATURES

$V_{DS}=19.5V, I_D=4A$

$R_{DS(ON)} < 37m\Omega @ V_{GS}=2.5V$

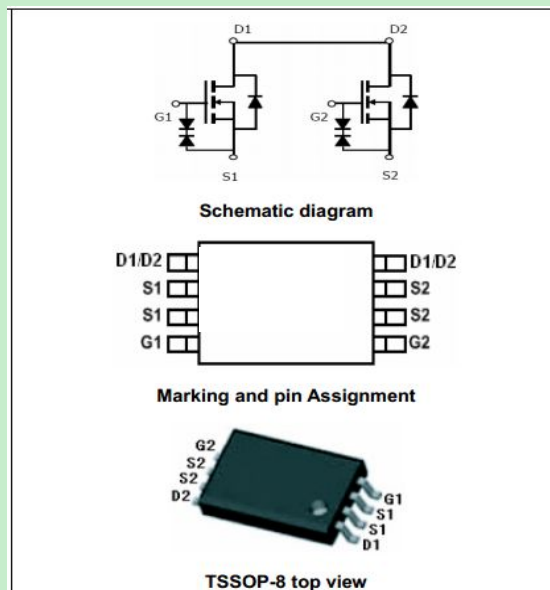
$R_{DS(ON)} < 27m\Omega @ V_{GS}=4.5V$

High Power and current handling capability

Lead free product is acquired

Surface Mount Package

MARKING: FS8205A CS078



MAXIMUM RATINGS (TA=25°C unless otherwise noted)

Symbol (符号)	Parameter (参数名称)	Value (额定值)	Units (单位)
V_{DS}	Drain-Source voltage	19.5	V
V_{GS}	Gate-Source voltage	± 10	V
I_D	Drain current-Continuous	4	A
I_{DM}	Pulsed Drain Current(Note1)	25	A
P_D	Maximum Power Dissipation	1.25	W
T_J, T_{stg}	Operating Junction and Storage Temperature Range	-55-150	°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Case(Note2)	100	°C/W

ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	19.5	21		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=19V, V_{GS}=0V$			1	μA
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 10V$			± 100	nA
On Characteristics(Note3)						
Gate-Threshold Voltage	$V_{th(GS)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.7	1.2	V
Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=4.0A$		20	27	$m\Omega$
		$V_{GS}=2.5V, I_D=3.0A$		25	37	$m\Omega$
Forward Trans conductance	g_{fs}	$V_{DS}=5V, I_D=4.0A$	4	8		S
Dynamic Characteristics(Note4)						

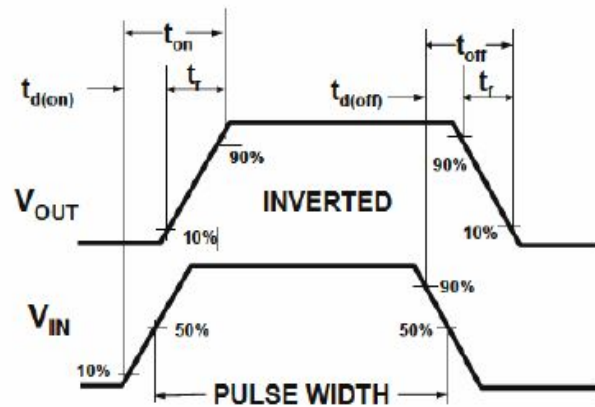
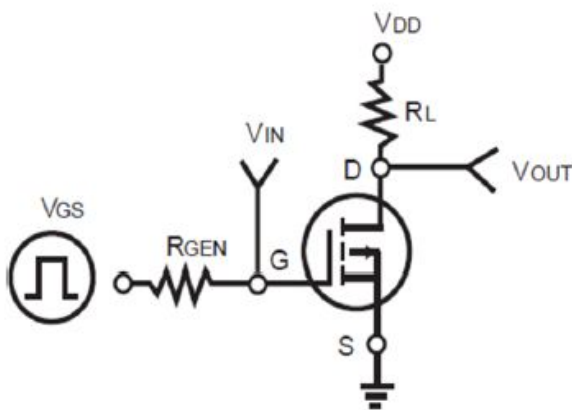
Input Capacitance	Ciss	V _{DS} =8V, V _{GS} =0V, f=1MHz		605		pF
Output Capacitance	Coss			315		
Reverse Transfer Capacitance	Crss			132		
Switching Capacitance(Note4)						
Turn-on Delay Time	td(on)	V _{DD} =10V, I _D =1A, V _{GS} =4.5V R _{GEN} =6 Ω		11		nS
Turn-on Rise Time	tr			12		nS
Turn-off Delay Time	td(off)			36		nS
Turn-off Fall Time	tr			32		nS
Total Gate Charge	Qg	V _{DS} =10V, I _D =4A, V _{GS} =4.5V,		10		nC
Gate-Source Charge	Qgs			2.8		nC
Gate-Drain Charge	Qgd			1.8		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage(Note3)	VSD	V _{GS} =0V, I _D =1.7A		0.8	1.2	V
Diode Forward Current(Note2	Is				1.7	A

Notes:

- 1.Repetitive Rating:Pulse width limited by maximum junction temperature
- 2.Surface Mounted on FR4 Board,t<10sec
- 3.Pulse Test :Pulse Width <300us,Duty Cycle <2%
- 4.Guaranteed by design,not subject to production

FS8205A

Switch Time Test Circuit and Switching Waveforms:



TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS (Curves)

Figure1. Power Dissipation

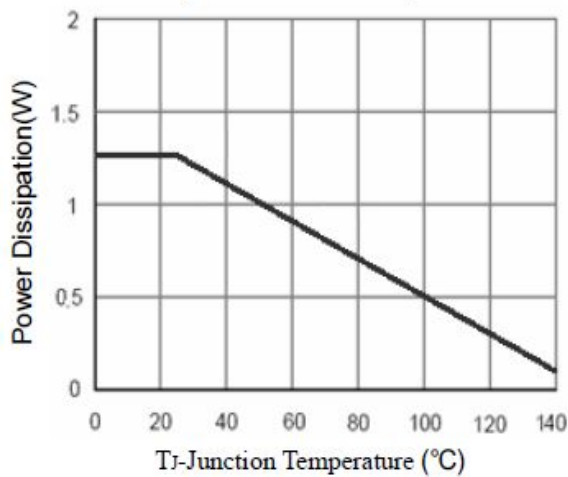


Figure2. Drain Current

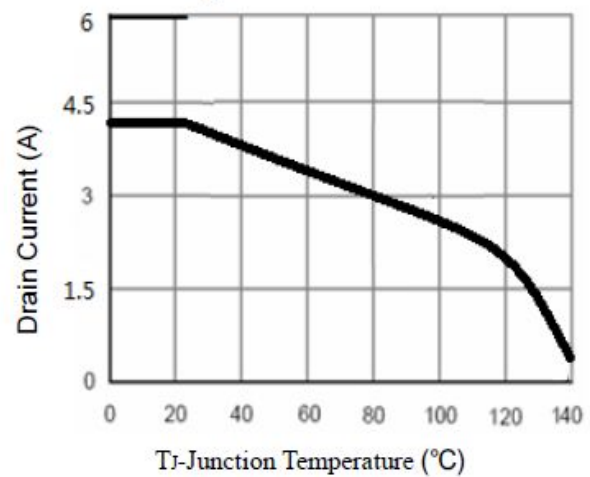


Figure3. Output Characteristics

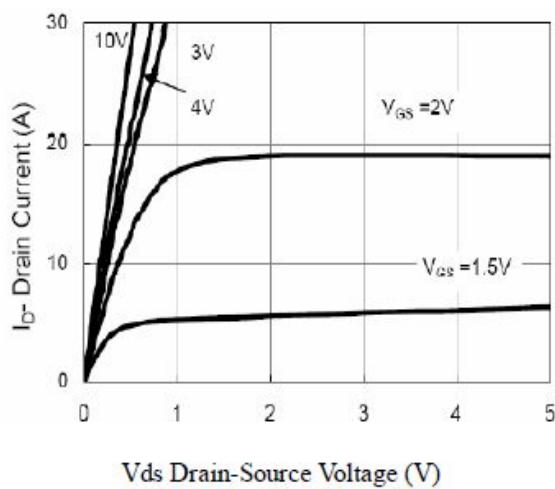


Figure4. Transfer Characteristics

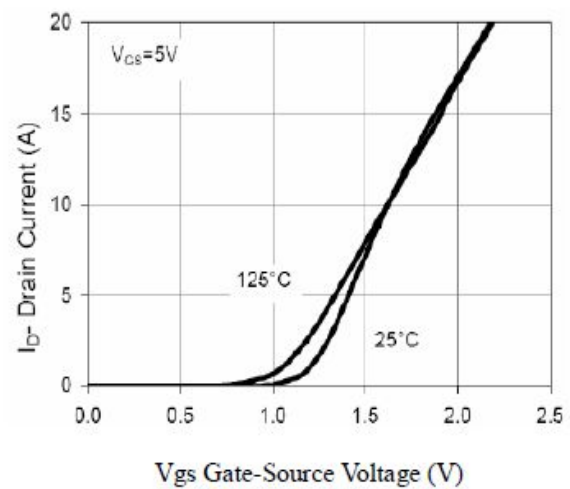


Figure5. Capacitance

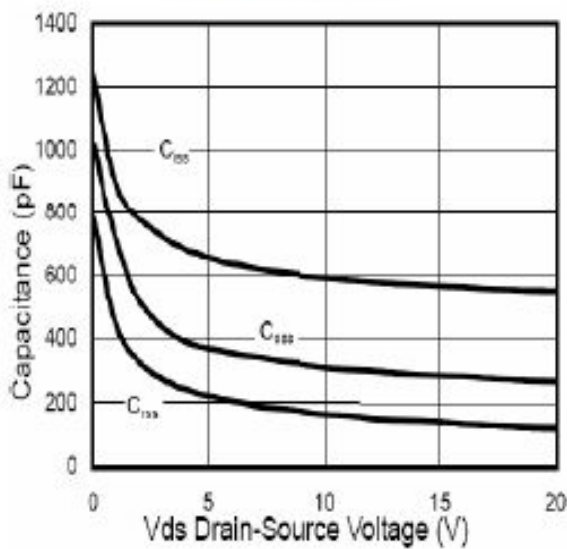


Figure6. $R_{DS(ON)}$ vs Junction Temperature

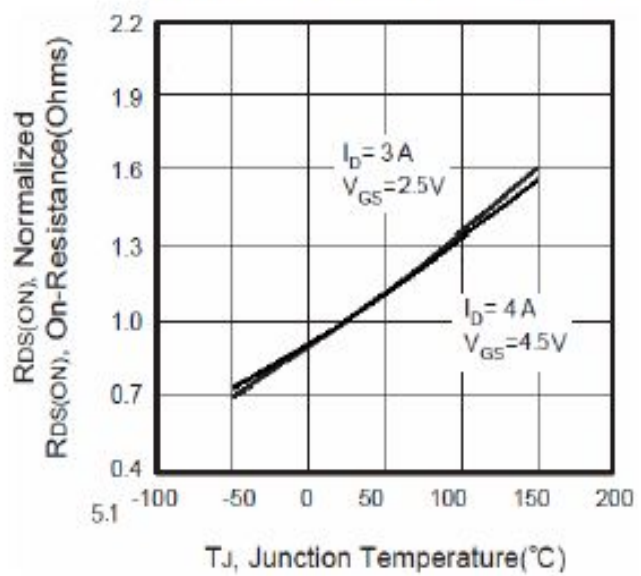


Figure7. Max BV_{DSS} vs Junction Temperature

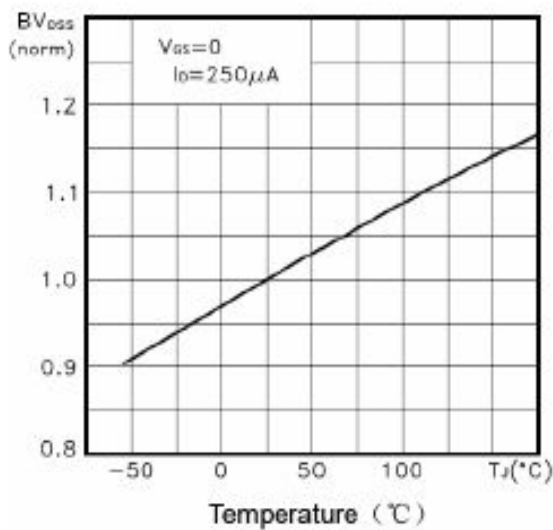


Figure8. $V_{GS(th)}$ vs Junction Temperature

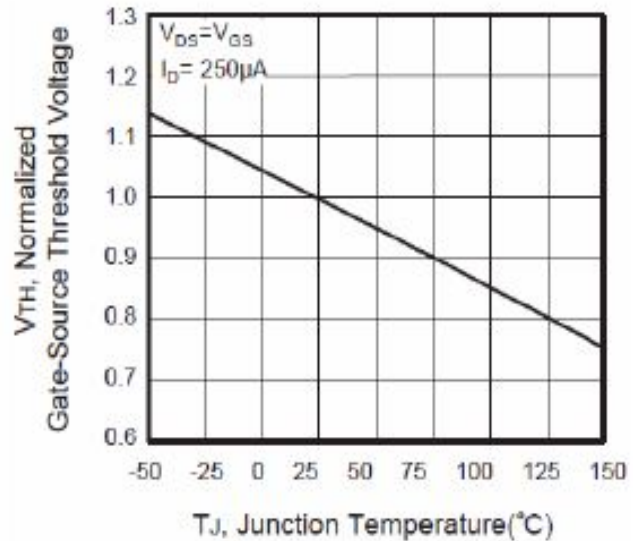


Figure9. Gate Charge Waveforms

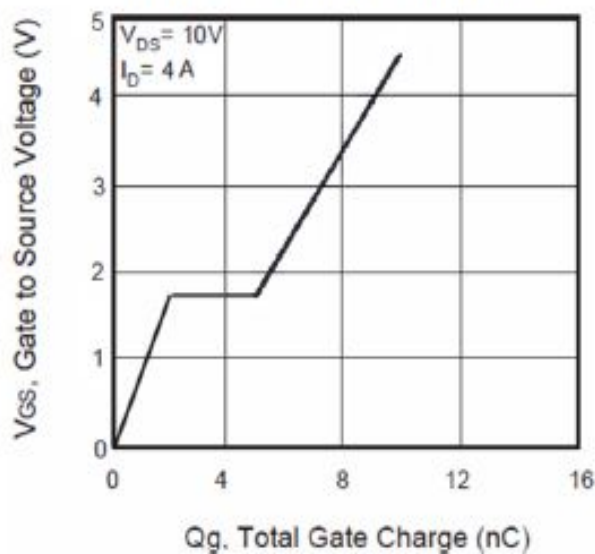


Figure10. Maximum Safe Operating Area

