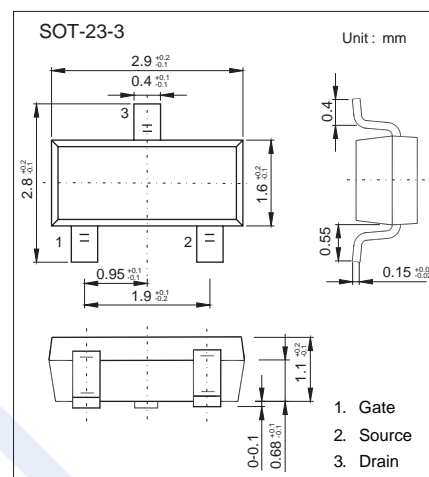
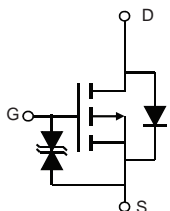


P-Channel MOSFET

2KJ7121

■ Features

- $V_{DS} (V) = -45V$
- $I_D = -2A$
- $R_{DS(ON)} < 190m\Omega @ V_{GS} = -10V$
- Low on - Resistance
- Built-in G-S Protection Diode
- Small Surface Mount Package

■ Absolute Maximum Ratings ($T_a = 25^\circ C$ Unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-45	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current (Note 1)	I_D	-2	A
Pulsed Drain Current (Note 2)	I_{DM}	-8	
Power Dissipation	(Note 3)	1	W
	(Note 4)	0.7	
Thermal Resistance, Junction- to-Ambient	(Note 3)	125	$^\circ C/W$
	(Note 4)	178	
Junction Temperature	T_J	150	$^\circ C$
Junction Storage Temperature Range	T_{stg}	-55 to 150	

Notes:

1. Limited only by maximum temperature allowed
2. $P_w \leq 10\mu s$, Duty cycle $\leq 1\%$
3. Mounted on a ceramic board (30x30x0.8mm)
4. Mounted on a FR4 (25x25x0.8mm)

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■ Electrical Characteristics ($T_a = 25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -250\mu\text{A}$, $V_{GS} = 0\text{V}$	-45			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -45\text{V}$, $V_{GS} = 0\text{V}$			-1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0\text{V}$, $V_{GS} = \pm 20\text{V}$			± 10	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = -10\text{V}$, $I_D = -1\text{mA}$	-1.0		-3.0	V
Static Drain-Source On-Resistance (Note 5)	$R_{DS(on)}$	$V_{GS} = -10\text{V}$, $I_D = -2\text{A}$		130	190	m Ω
		$V_{GS} = -4.5\text{V}$, $I_D = -2\text{A}$		180	260	
		$V_{GS} = -4\text{V}$, $I_D = -2\text{A}$		200	280	
Forward Transfer Admittance (Note 5)	$ Y_{fs} $	$V_{DS} = -10\text{V}$, $I_D = -2.0\text{A}$	1.2	4		S
Dynamic Characteristics						
Gate Resistance	R_G	$f = 1\text{MHz}$, open drain		21		Ω
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = -10\text{V}$, $f = 1\text{MHz}$		500		pF
Output Capacitance	C_{oss}			80		
Reverse Transfer Capacitance	C_{rss}			40		
Total Gate Charge	Q_g	$V_{DS} = -25\text{V}$, $I_D = -2.0\text{A}$, $V_{GS} = -4.5\text{V}$ (Note 5)		4.5		nC
Gate Source Charge	Q_{gs}			1.6		
Gate Drain Charge	Q_{gd}			1.2		
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -25\text{V}$, $I_D = -1\text{A}$, $V_{GS} = -10\text{V}$, $R_G = 10\Omega$, $R_L = 25\Omega$ (Note 5)		8		ns
Turn-On Rise Time	t_r			10		
Turn-Off Delay Time	$t_{d(off)}$			35		
Turn-Off Fall Time	t_f			10		
Drain-Source Diode Characteristics						
Maximum Body-Diode Continuous Current	I_S				-0.8	A
Diode Forward Voltage (Note 5)	V_{SD}	$I_{SD} = -2.0\text{A}$, $V_{GS} = 0\text{V}$			-1.2	V

Note 5. Pulsed

■ Marking

Marking	J7121
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P-Channel MOSFET

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Electrical characteristic curves

Fig.1 Power Dissipation Derating Curve

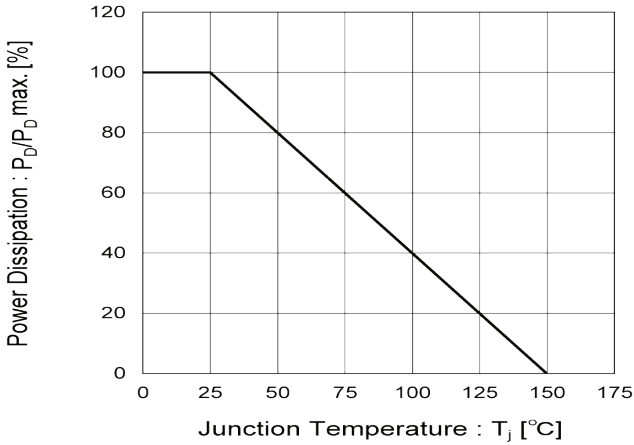


Fig.2 Maximum Safe Operating Area

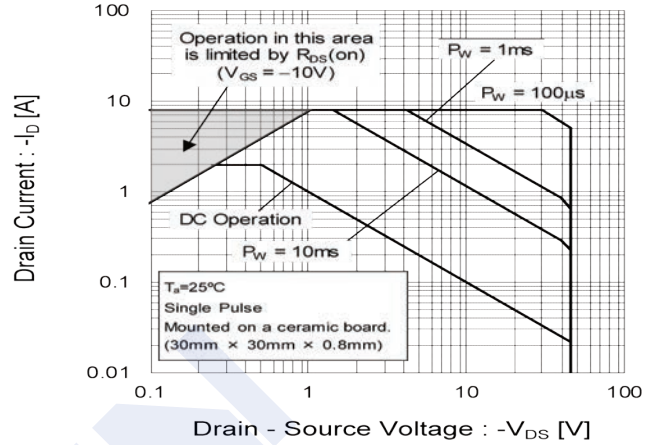


Fig.3 Normalized Transient Thermal Resistance vs. Pulse Width

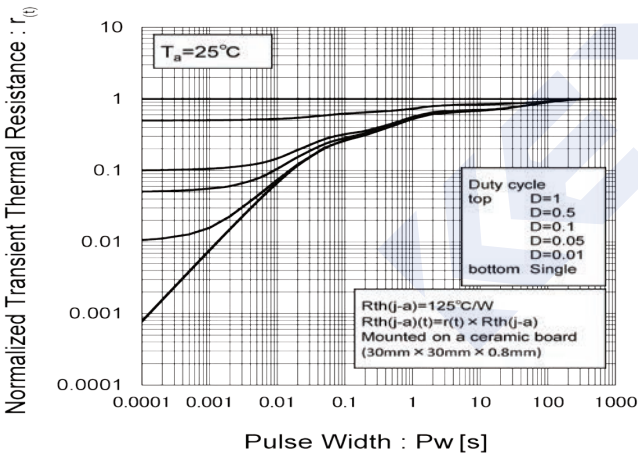


Fig.4 Single Pulse Maximum Power dissipation

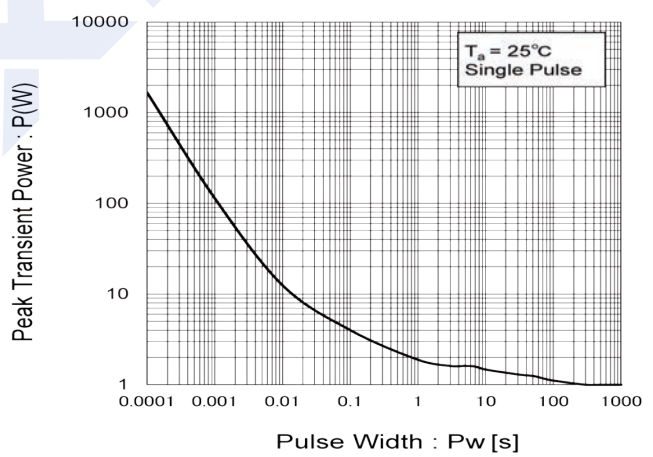


Fig.5 Typical Output Characteristics(I)

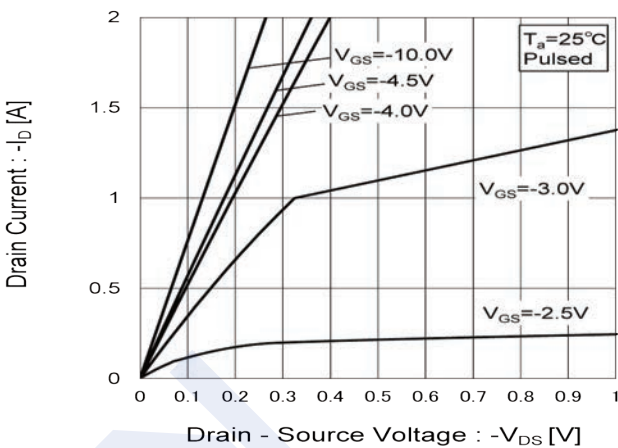
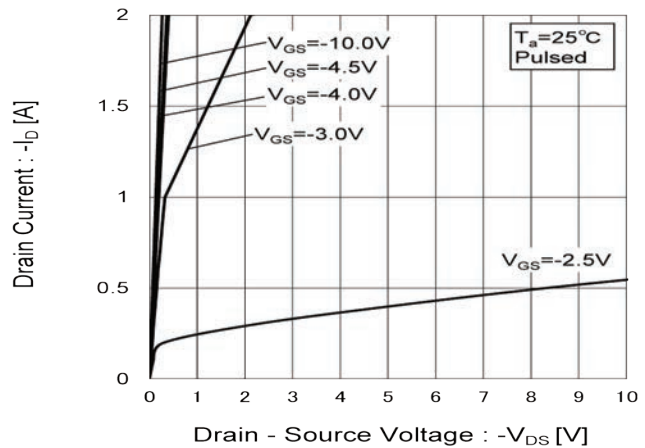


Fig.6 Typical Output Characteristics(II)



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Fig.7 Breakdown Voltage vs. Junction Temperature

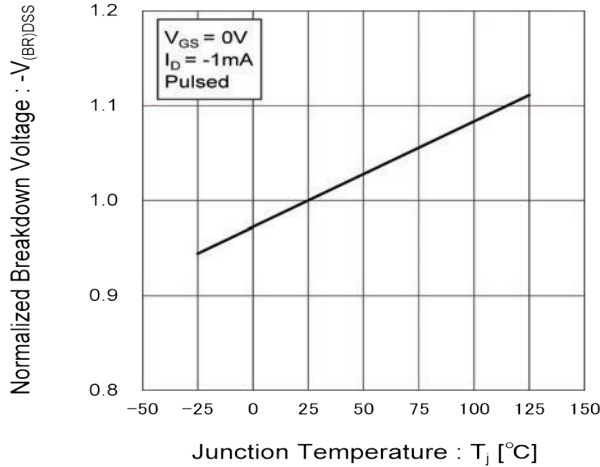


Fig.8 Typical Transfer Characteristics

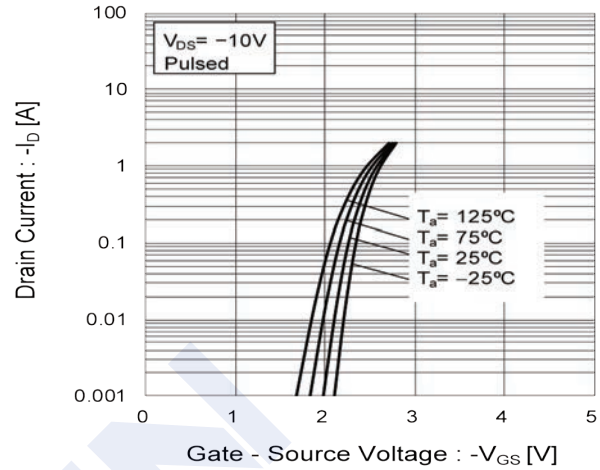


Fig.9 Gate Threshold Voltage vs. Junction Temperature

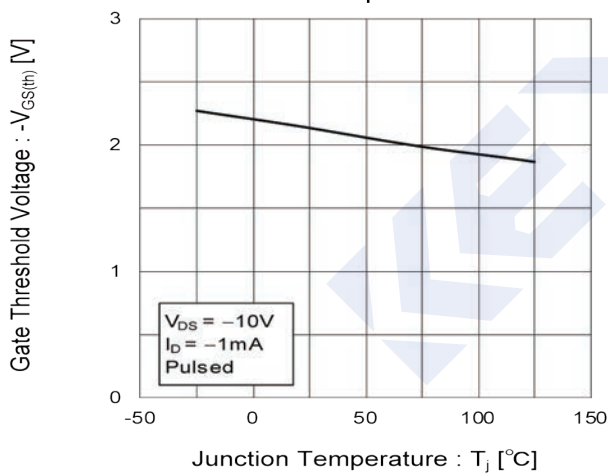


Fig.10 Forward Transfer Admittance vs. Drain Current

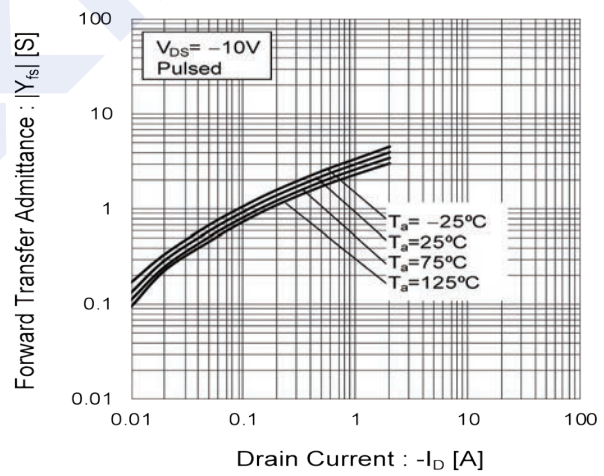


Fig.11 Drain Current Derating Curve

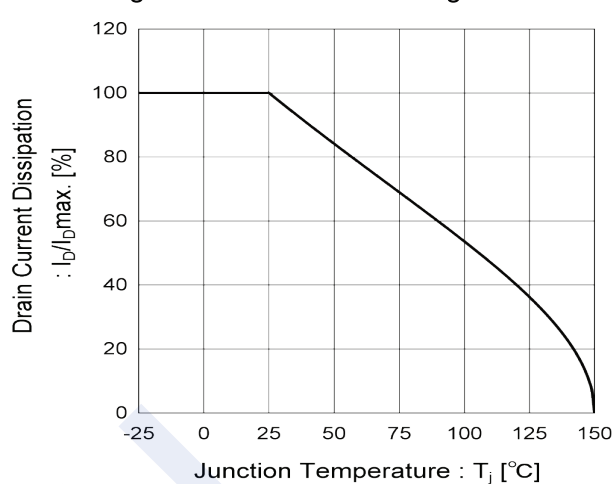
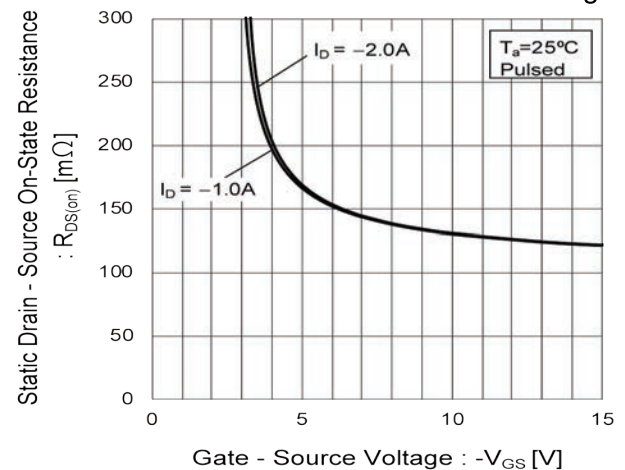


Fig.12 Static Drain - Source On - State Resistance vs. Gate Source Voltage



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Fig.13 Static Drain - Source On - State Resistance vs. Junction Temperature

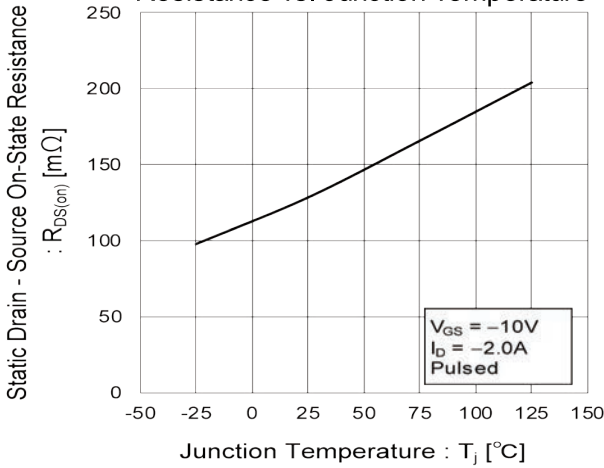


Fig.14 Static Drain - Source On - State Resistance vs. Drain Current (I)

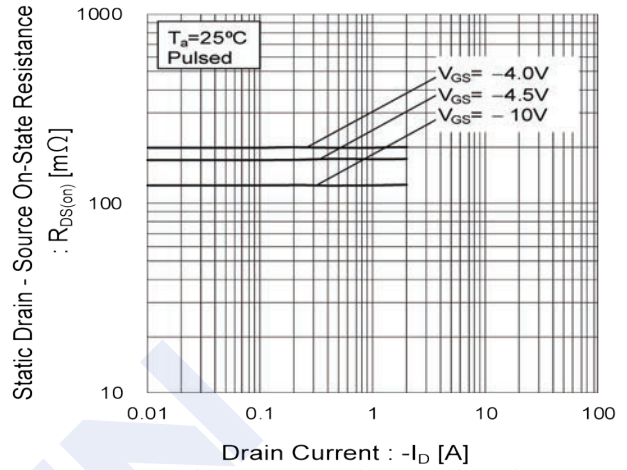


Fig.15 Static Drain - Source On - State Resistance vs. Drain Current (II)

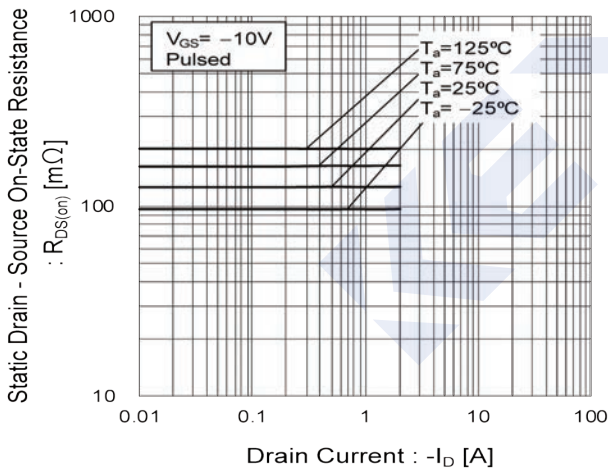


Fig.16 Static Drain - Source On - State Resistance vs. Drain Current (III)

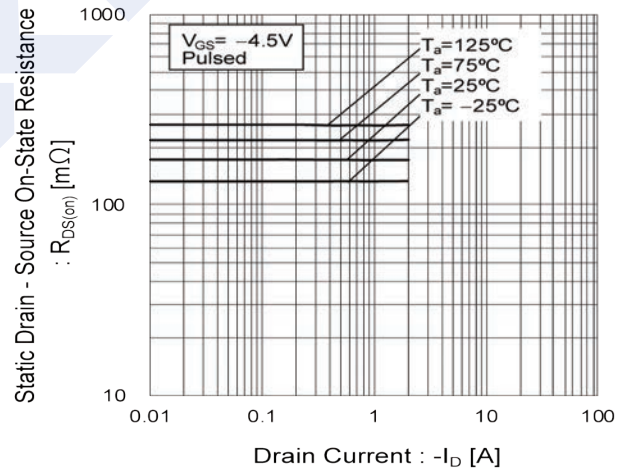


Fig.17 Static Drain - Source On - State Resistance vs. Drain Current (IV)

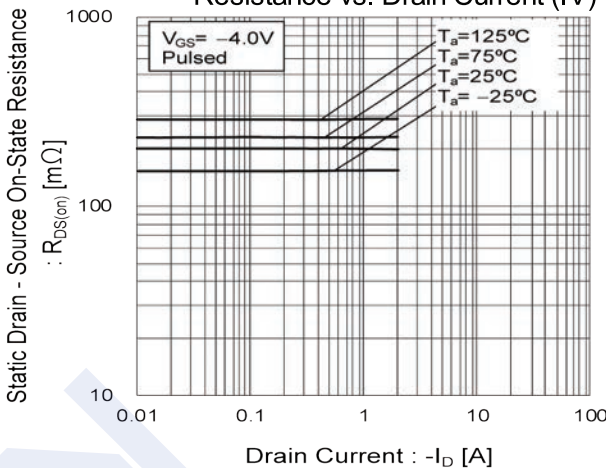
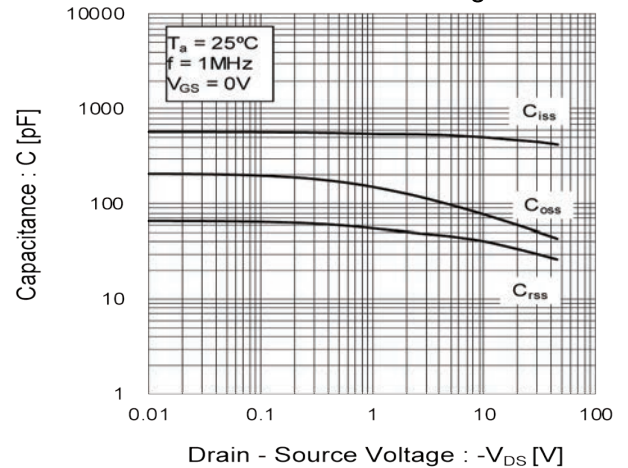


Fig.18 Typical Capacitance vs. Drain - Source Voltage



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Fig.19 Switching Characteristics

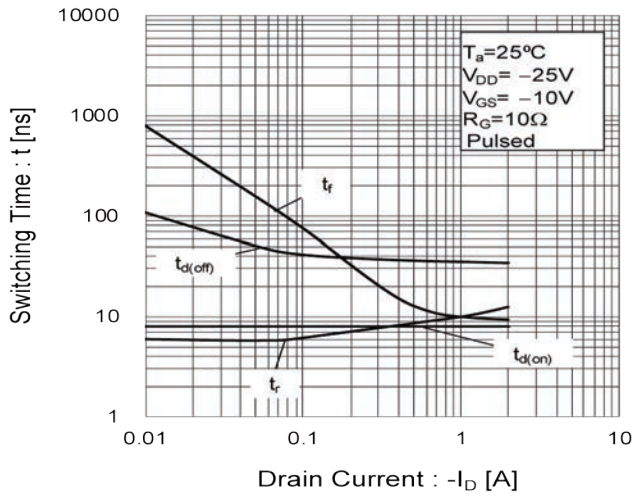


Fig.20 Dynamic Input Characteristics

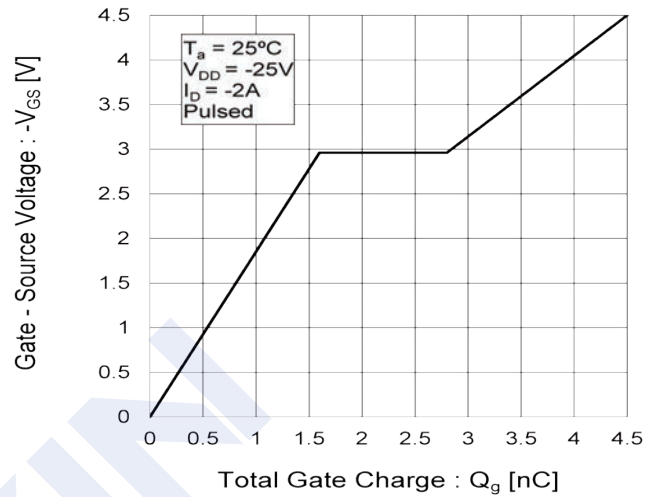


Fig.21 Source Current vs. Source Drain Voltage

