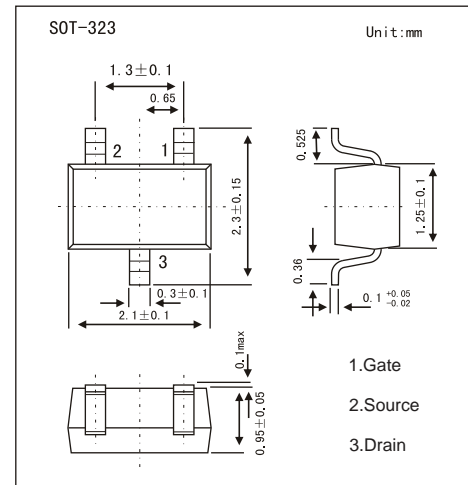
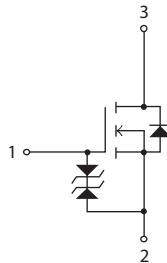


N-Channel MOSFET

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■ Features

- $V_{DS} (V) = 30 V$
- $I_D = 300 \text{ mA}$
- $R_{DS(ON)} < 1.1 \Omega$ ($V_{GS} = 4.5V$)
- Very fast switching
- Ultra low voltage drive (2.5V drive)

■ Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current	I_D	0.3	A
Pulsed Drain Current ($t_p=10\mu\text{s}$)	I_{DM}	1.2	
Power Dissipation (Note 1)	P_D	200	mW
Thermal Resistance.Junction- to-Ambient (Note 1)	$R_{\theta JA}$	625	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

Note 1. Surface mounted on FR4 board using 1 in sq pad size. (Cu area = 1.127 in sq [1 oz] including traces).

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V_{DS}	$I_D=250\mu\text{A}$, $V_{GS}=0\text{V}$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0\text{V}$, $V_{GS}=\pm 12\text{V}$			± 10	
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = 10\text{V}$, $I_D = 1\text{mA}$	0.8		1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5\text{V}$, $I_D=300\text{mA}$		0.8	1.1	Ω
		$V_{GS}=4\text{V}$, $I_D=300\text{mA}$		0.9	1.3	
		$V_{GS}=2.5\text{V}$, $I_D=300\text{mA}$		1.4	1.9	
Forward Transconductance	g_{FS}	$V_{DS}=10\text{V}$, $I_D=0.3\text{A}$	0.4			S
CHARGES AND CAPACITANCES						
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$		24		pF
Output Capacitance	C_{oss}			11		
Reverse Transfer Capacitance	C_{rss}			5		
SWITCHING CHARACTERISTICS (Note 3)						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 4\text{V}$, $V_{DS} = 15\text{V}$, $I_D = 0.15\text{A}$, $R_L = 100\Omega$, $R_G = 10\Omega$		6		ns
Turn-On Rise Time	t_r			4		
Turn-Off Delay Time	$t_{d(off)}$			9		
Turn-Off Fall Time	t_f			32		
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage	V_{SD}	$I_S=0.2\text{A}$, $V_{GS}=0\text{V}$			1.2	V

Notes:

- Pulse Test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
- Switching characteristics are independent of operating junction temperatures.

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■ Typical Characteristics

Fig.1 Power Dissipation Derating Curve

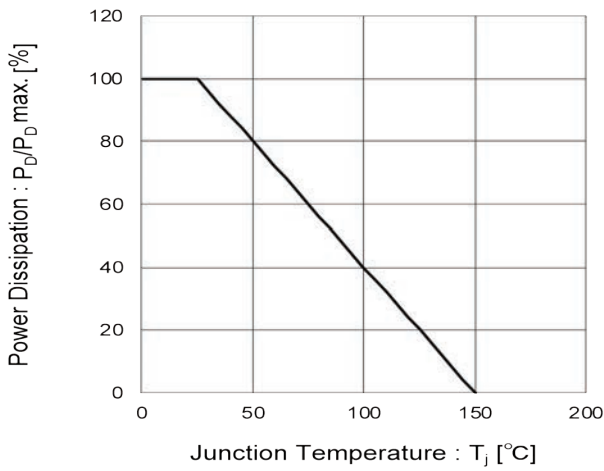


Fig.2 Drain Current Derating Curve

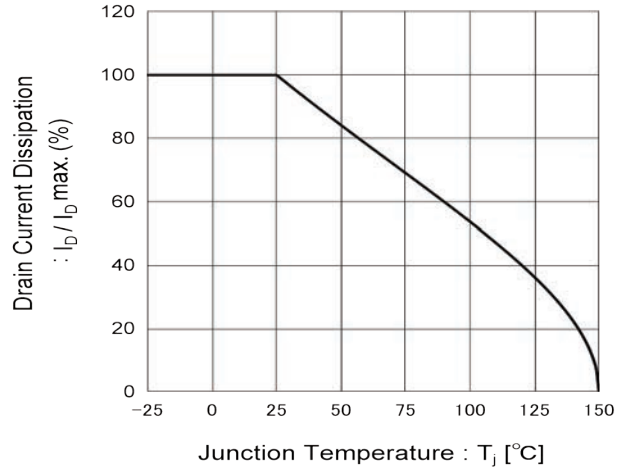


Fig.3 Typical Output Characteristics(I)

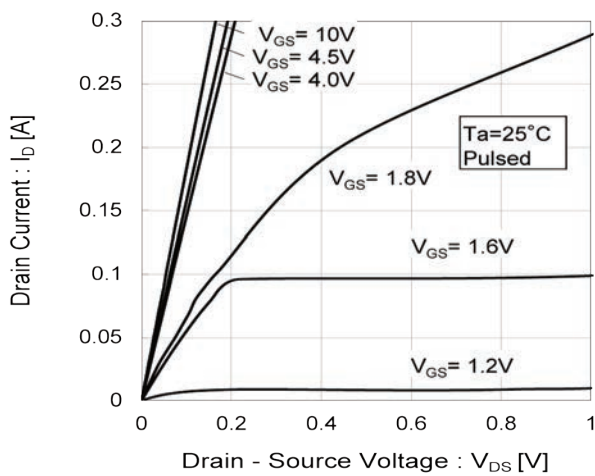


Fig.4 Typical Output Characteristics(II)

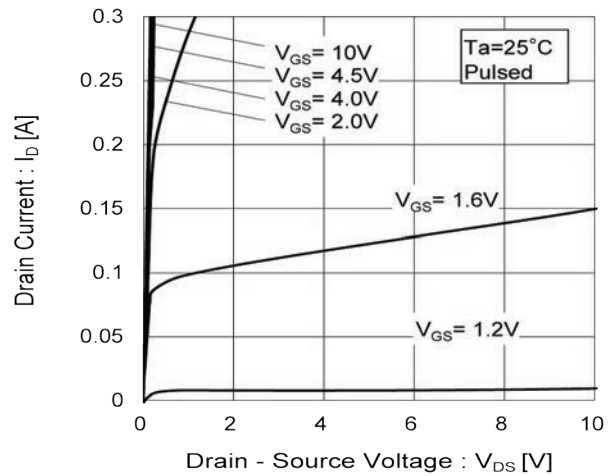


Fig.5 Typical Transfer Characteristics

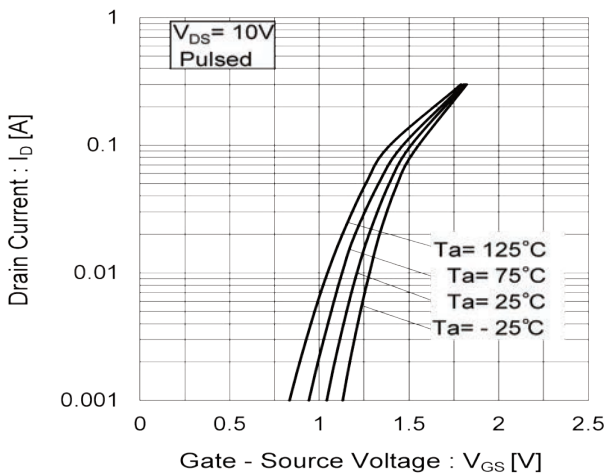
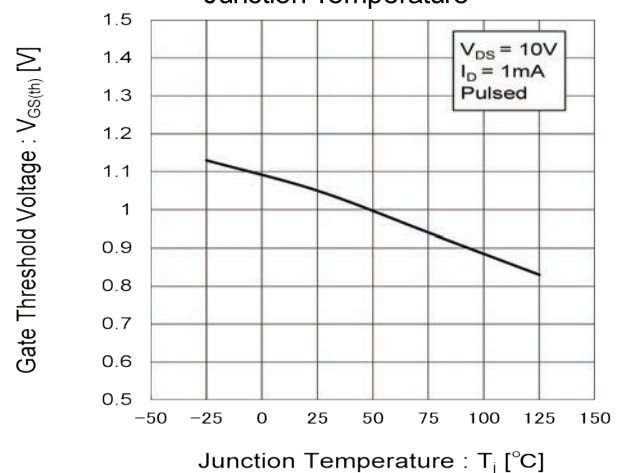


Fig.6 Gate Threshold Voltage vs. Junction Temperature



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Fig.7 Static Drain - Source On - State Resistance vs. Gate Source Voltage

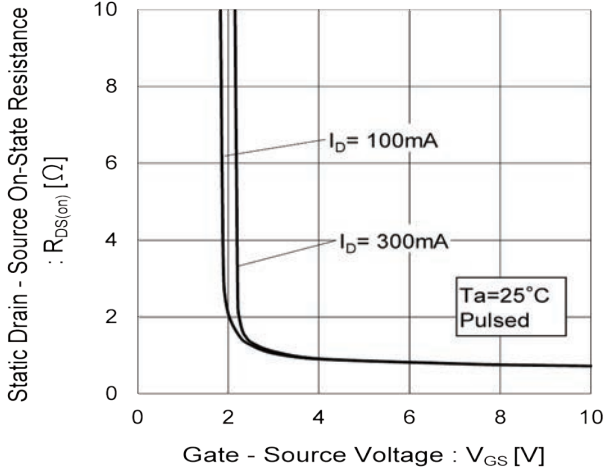


Fig.8 Static Drain - Source On - State Resistance vs. Junction Temperature

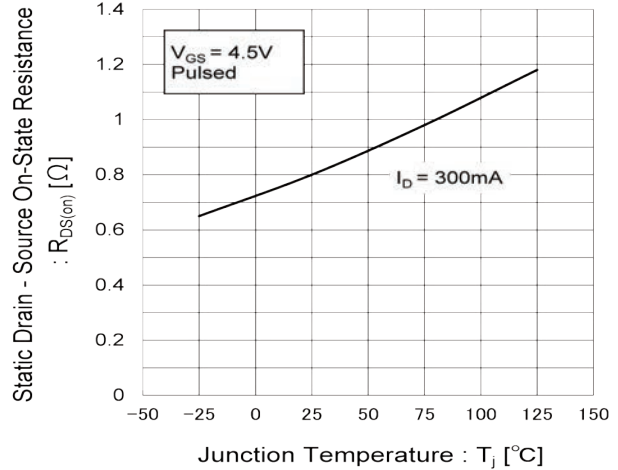


Fig.9 Static Drain - Source On - State Resistance vs. Drain Current (I)

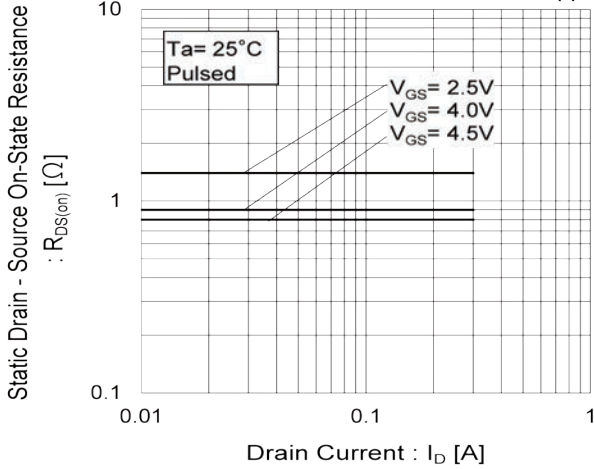


Fig.10 Static Drain Source On State Resistance vs Drain Current (II)

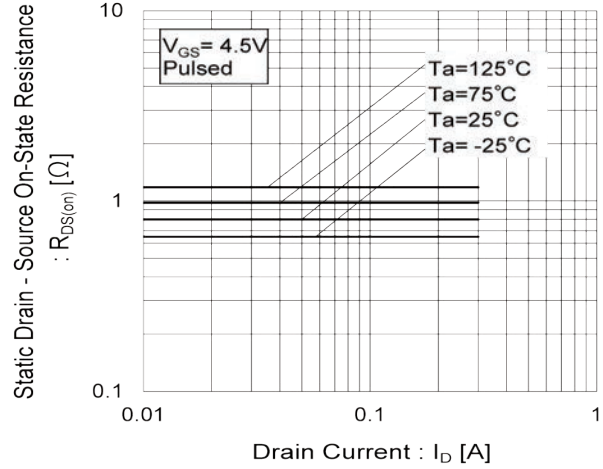


Fig.12 Static Drain - Source On - State Resistance vs. Drain Current (IV)

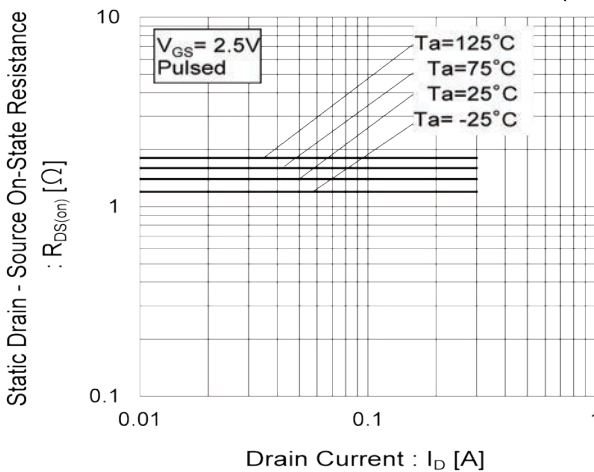
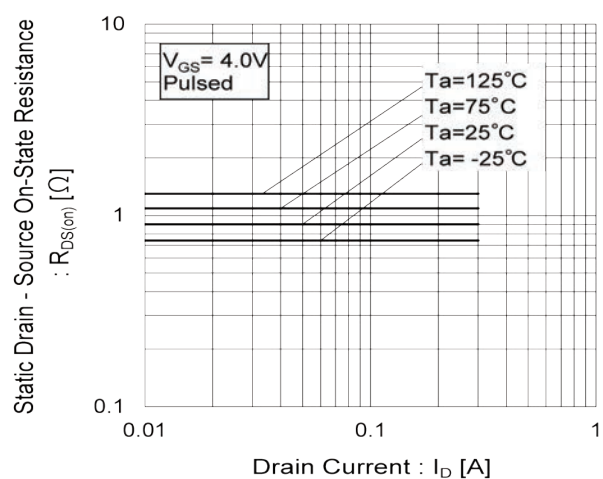


Fig.11 Static Drain - Source On - State Resistance vs Drain Current (III)



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Fig.13 Typical Capacitance vs. Drain - Source Voltage

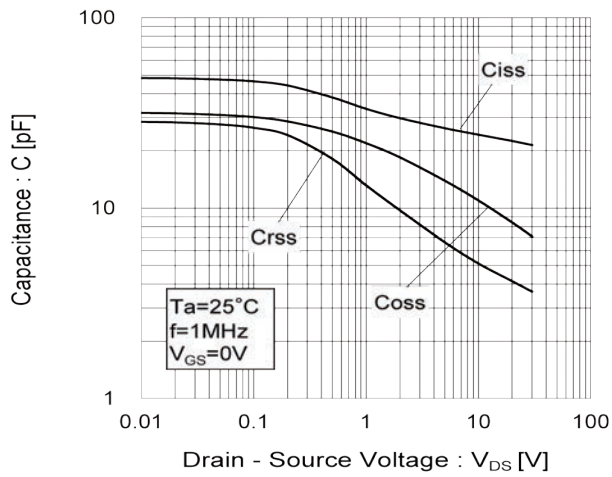


Fig.14 Switching Characteristics

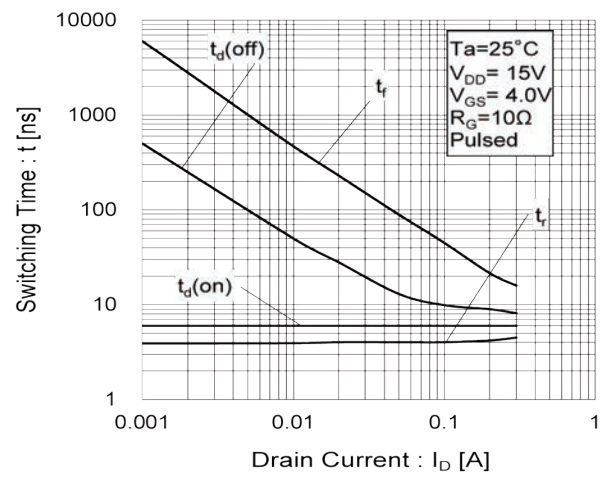


Fig.15 Source Current vs. Source Drain Voltage

