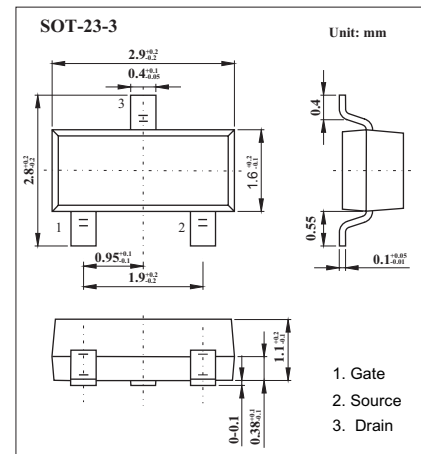
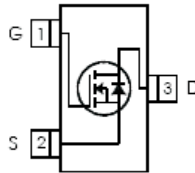


N-Channel MOSFET

KRLML2502

■ Features

- Ultra Low On-Resistance
- N-Channel MOSFET
- Low Profile (<1.1mm)
- Available in Tape and Reel
- Fast Switching



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain- Source Voltage	V_{DS}	20	V
Gate-to-source voltage	V_{GS}	± 12	V
Continuous drain current, $V_{GS}@4.5\text{V}$	I_D	4.2	A
Pulsed drain current	I_{DM}	33	A
Power dissipation	P_D	1.25	W
Linear derating factor		0.01	W°C
Junction-to-ambient *	$R_{\theta JA}$	75	$^\circ\text{C}/\text{W}$
Junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

* Surface mounted on FR-4 board, $t \leq 5$ sec.

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-source Breakdown voltage	$V_{(BR)DSS}$	$I_D = 250 \mu A, V_{GS} = 0V$	20			V
Static drain-source on-state resistance *	$R_{DS(on)}$	$I_D = 4.2A, V_{GS} = 4.5V$		0.035	0.045	Ω
		$I_D = 3.6A, V_{GS} = 2.5V$		0.050	0.080	
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	0.6		1.2	V
Forward Transconductance	g_{fs}	$V_{DS} = 10 V, I_D = 4.0 A$	5.8			S
Gate-source leakage current	I_{DSS}	$V_{DS} = 16 V, V_{GS} = 0V$			1.0	μA
		$V_{DS} = 16 V, V_{GS} = 0V, T_J = 70^\circ C$			25	
Gate-source forward leadage	I_{GSS}	$V_{GS} = -12V$			-100	nA
Gate-source reverse leadage		$V_{GS} = 12V$			100	
Input capacitance	C_{iss}	$V_{DS} = 15 V,$		740		pF
Output capacitance	C_{oss}	$V_{GS} = 0 V,$		90		
Reverse transfer capacitance	C_{rss}	$f = 1MHz$		66		
Total Gate Charge	Q_g	$V_{DS} = 5.0V, V_{GS} = 10 V, I_D = 4.0 A$		8.0	12	nC
Gate-Source Charge	Q_{gs}			1.8	2.7	
Gate-Drain Charge	Q_{gd}			1.7	2.6	
Turn-on delay time	$t_{d(on)}$	$I_D = 1 A,$		7.5		ns
Rise time	t_r	$V_{DD} = 10V,$		10		
Turn-off delay time	$t_{d(off)}$	$R_D = 10 \Omega$		54		
Fall time	t_f	$R_G = 6. \Omega$		26		
Reverse recovery time *	t_{rr}	$T_J = 25^\circ C, I_F = 1.3 A,$		16	24	ns
Reverse recovery charge *	Q_{rr}	$di / dt = 100 A / \mu s$		8.6	13	nC
Continuous source current	I_S	MOSFET symbol I showing the integral reverse p-n junction diode			1.3	A
Pulsed source current	I_{SM}				33	
Diode forward voltage *	V_{SD}	$T_J = 25^\circ C, V_{GS} = 0 V, I_S = 1.3 A$			1.2	V

* Pulse width $\leq 300 \mu s$, Duty cycle $\leq 2\%$

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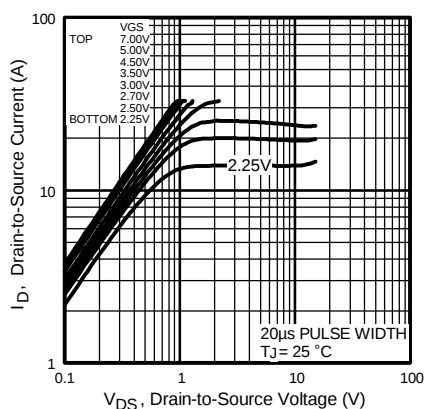


Fig 1. Typical Output Characteristics

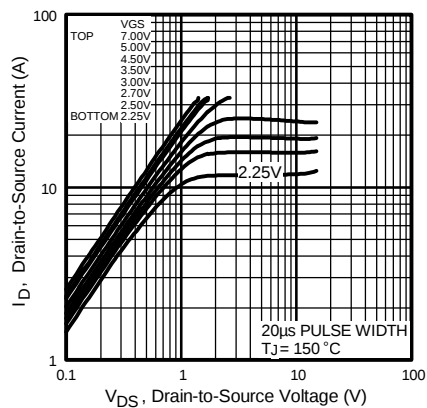


Fig 2. Typical Output Characteristics

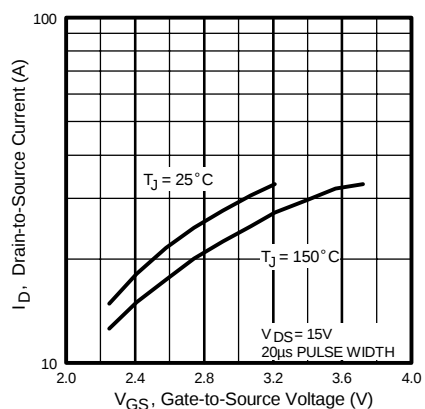


Fig 3. Typical Transfer Characteristics

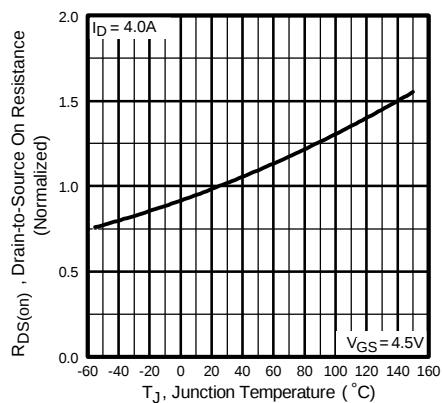


Fig 4. Normalized On-Resistance Vs. Temperature

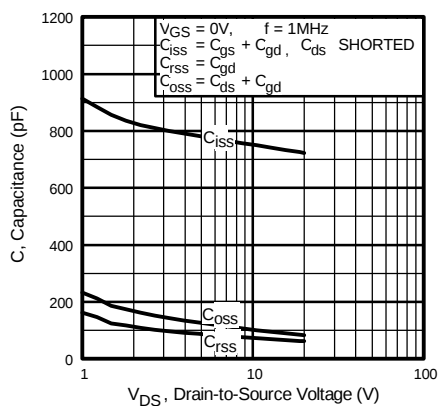


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

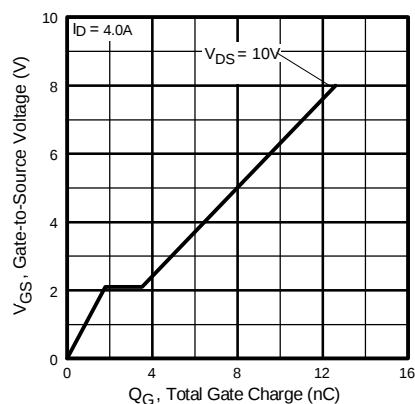


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

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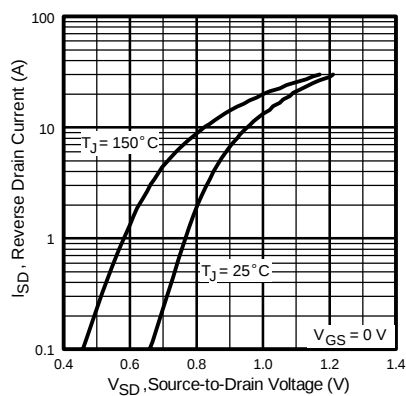


Fig 7. Typical Source-Drain Diode Forward Voltage

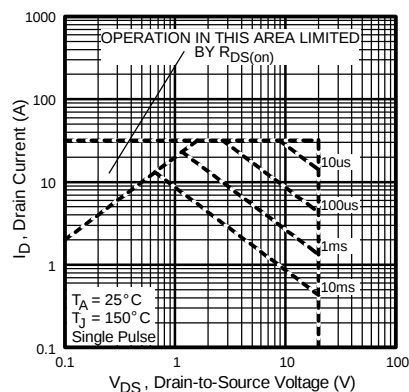


Fig 8. Maximum Drain Current Vs. Case Temperature_a

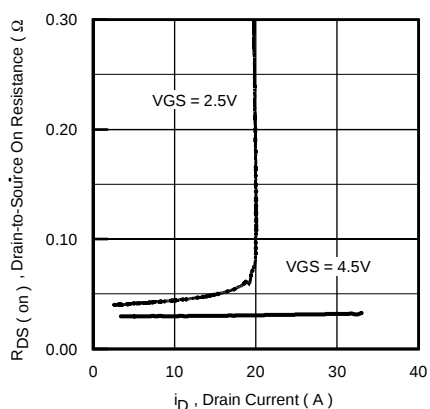


Fig 9. On-Resistance Vs. Drain Current

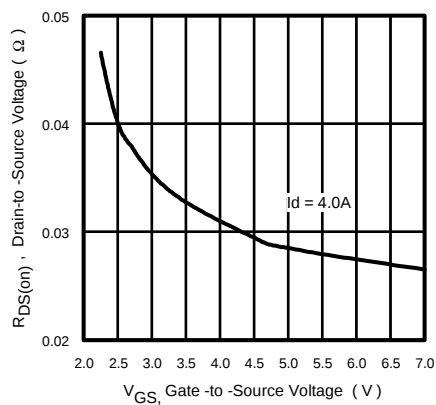


Fig 10. On-Resistance Vs. Gate Voltage

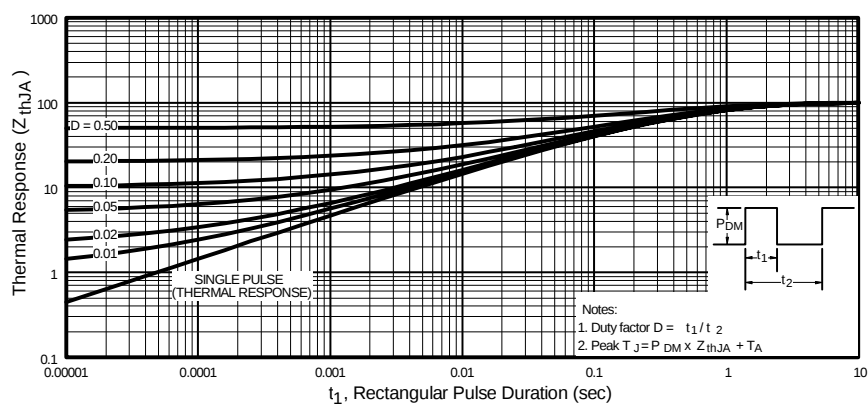


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient