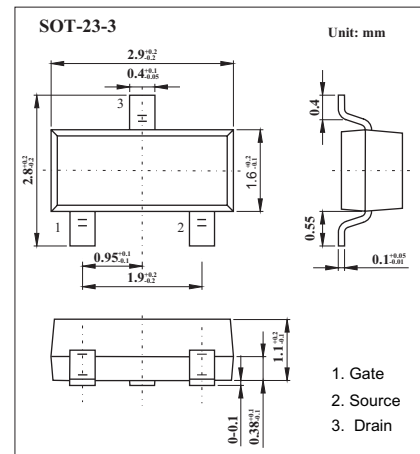
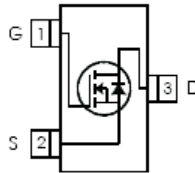


N-Channel MOSFET

KRLML2502

■ Features

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



■ Absolute Maximum Ratings Ta = 25°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} @4.5V	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 _{θJA}	75	°C/W
Junction and storage temperature range	T _J , T _{STG}	-55 to +150	°C

* Surface mounted on FR-4 board, t ≤ 5 sec.

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■ Electrical Characteristics Ta = 25°C

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}	$V_{DS} = 10V, I_D = 4.0A$	5.8			S
Gate-source leakage current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$			1.0	μA
		$V_{DS} = 16V, V_{GS} = 0V, T_J = 70^\circ C$			25	
Gate-source forward leadage	I_{GSS}	$V_{GS} = -12V$			-100	nA
Gate-source reverse leadage		$V_{GS} = 12V$			100	
Input capacitance	C_{iss}	$V_{DS} = 15V,$		740		pF
Output capacitance	C_{oss}	$V_{GS} = 0V,$		90		
Reverse transfer capacitance	C_{rss}	$f = 1MHz$		66		
Total Gate Charge	Q_g	$V_{DS} = 5.0V, V_{GS} = 10V, I_D = 4.0A$		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	$t_{d(on)}$	$I_D = 1A,$		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}	$T_J = 25^\circ C, I_F = 1.3A,$		16	24	ns
Reverse recovery charge *	Q_{rr}	$di/dt = 100A/\mu s$		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}	$T_J = 25^\circ C, V_{GS} = 0V, I_S = 1.3A$			1.2	V

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

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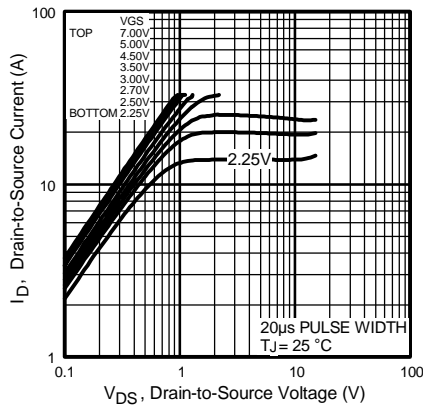


Fig 1. Typical Output Characteristics

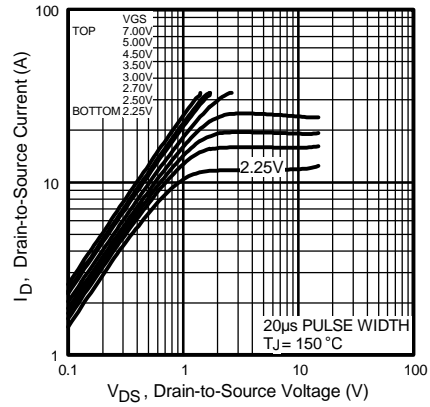


Fig 2. Typical Output Characteristics

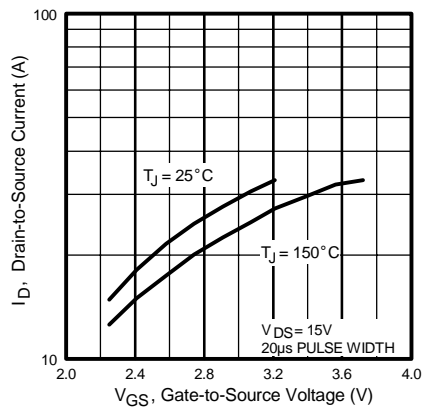


Fig 3. Typical Transfer Characteristics

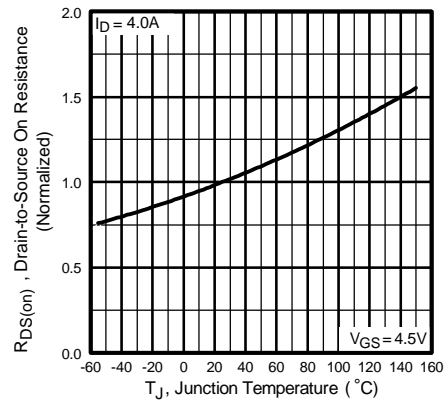


Fig 4. Normalized On-Resistance Vs. Temperature

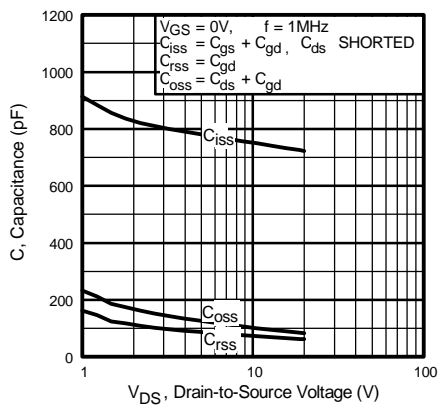


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

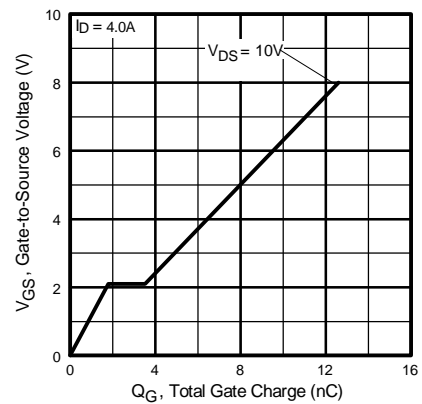


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

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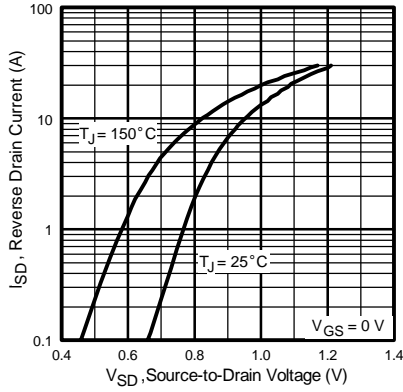


Fig 7. Typical Source-Drain Diode Forward Voltage

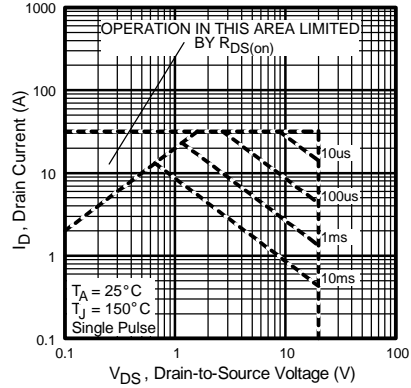


Fig 8. Maximum Drain Current Vs. Case Temperature_a

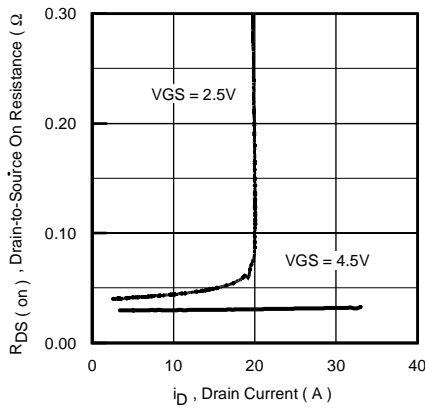


Fig 9. On-Resistance Vs. Drain Current

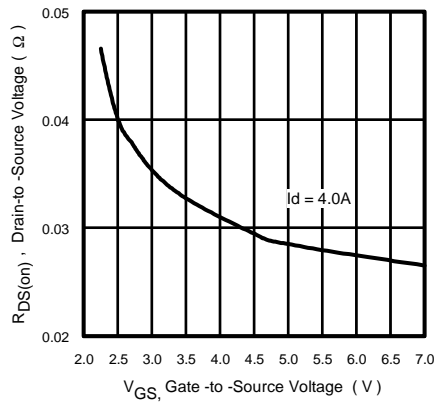


Fig 10. On-Resistance Vs. Gate Voltage

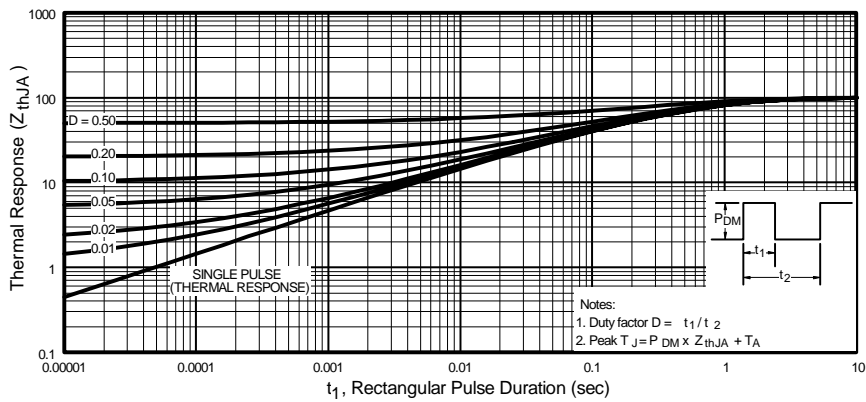


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient