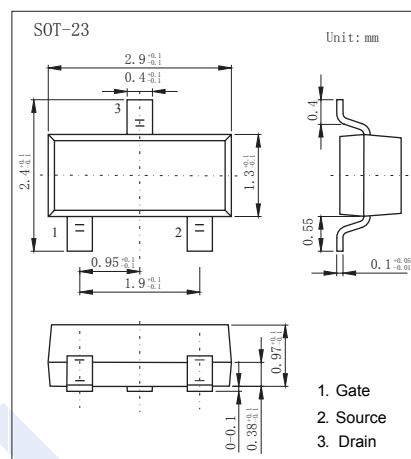
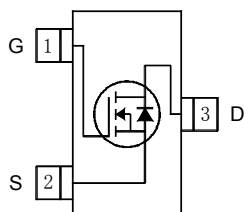


N-Channel MOSFET

IRLML2502 (KRLML2502)

■ Features

- $V_{DS} (V) = 20V$
- $I_D = 4.2 A$
- $R_{DS(ON)} < 45m\Omega$ ($V_{GS} = 4.5V$)
- $R_{DS(ON)} < 80m\Omega$ ($V_{GS} = 2.5V$)
- Fast Switching



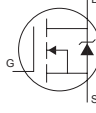
■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current	$T_a = 25^\circ C$	I_D	4.2	A
	$T_a = 70^\circ C$		3.4	
Pulsed Drain Current		I_{DM}	33	
Power Dissipation	$T_a = 25^\circ C$	P_D	1.25	W
	$T_a = 70^\circ C$		0.8	
Linear Derating Factor			0.01	$W/^\circ C$
Thermal Resistance, Junction- to-Ambient		R_{thJA}	100	$^\circ C/W$
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150	

N-Channel MOSFET

IRLML2502 (KRLML2502)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D=250\mu A$, $V_{GS}=0V$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=16V$, $V_{GS}=0V$			1	μA
		$V_{DS}=16V$, $V_{GS}=0V$, $T_J=70^\circ C$			25	
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V$, $V_{GS}=\pm 12V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\mu A$	0.5		1	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V$, $I_D=4.2A$			45	m Ω
		$V_{GS}=2.5V$, $I_D=3.6A$			80	
Forward Transconductance	g_{FS}	$V_{DS}=10V$, $I_D=4A$	5.8			S
Input Capacitance	C_{iss}	$V_{GS}=0V$, $V_{DS}=15V$, $f=1MHz$		740		pF
Output Capacitance	C_{oss}			90		
Reverse Transfer Capacitance	C_{rss}			66		
Total Gate Charge	Q_g	$V_{GS}=5V$, $V_{DS}=10V$, $I_D=4A$			12	nC
Gate Source Charge	Q_{gs}				2.7	
Gate Drain Charge	Q_{gd}				2.6	
Turn-On DelayTime	$t_{d(on)}$	$V_{DD}=10V$, $I_D=1A$, $R_L=6\Omega$, $R_{GEN}=10\Omega$		7.5		ns
Turn-On Rise Time	t_r			10		
Turn-Off DelayTime	$t_{d(off)}$			54		
Turn-Off Fall Time	t_f			26		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=1.3A$, $dI/dt=100A/\mu s$, $T_J=25^\circ C$			24	nC
Body Diode Reverse Recovery Charge	Q_{rr}				13	
Continuous Source Current	I_S	MOSFET symbol showing the integral reverse p-n junction diode. 			1.3	A
Pulsed Source Current	I_{SM}				33	
Diode Forward Voltage	V_{SD}	$I_S=1.3A$, $V_{GS}=0V$, $T_J=25^\circ C$			1.2	V

■ Marking

Marking	1G**
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N-Channel MOSFET

IRLML2502 (KRLML2502)

■ Typical Characteristics

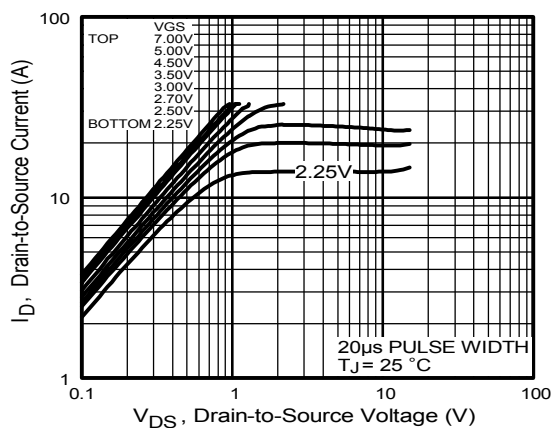


Fig 1. Typical Output Characteristics

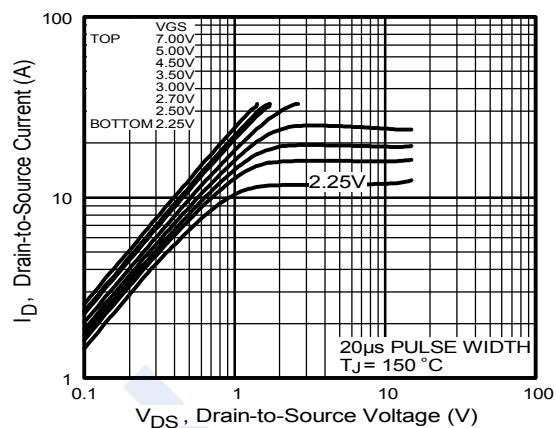


Fig 2. Typical Output Characteristics

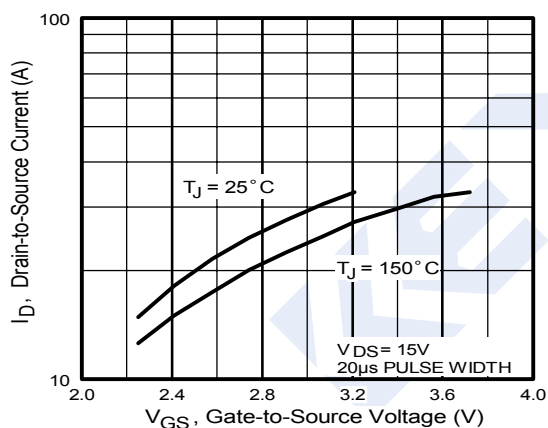


Fig 3. Typical Transfer Characteristics

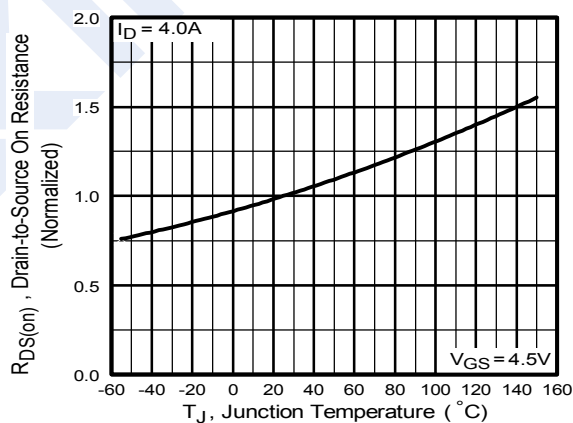


Fig 4. Normalized On-Resistance Vs. Temperature

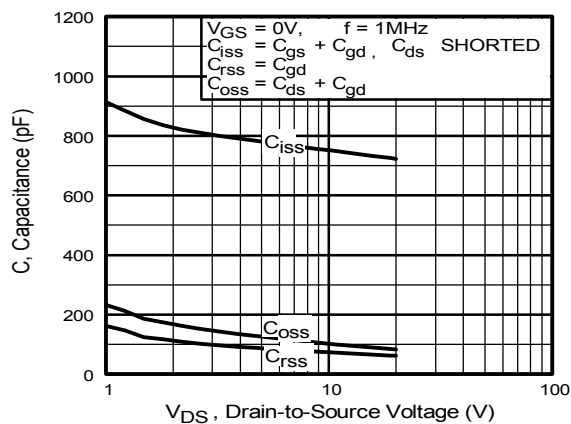


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

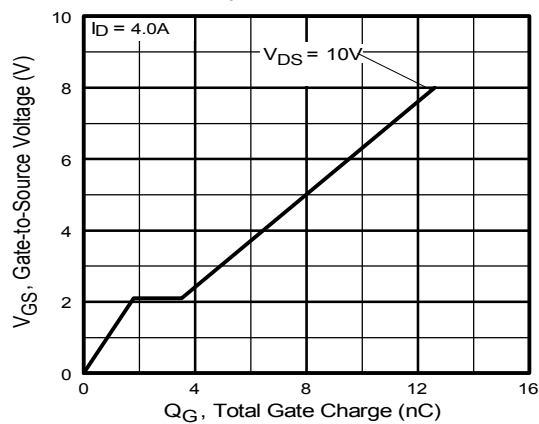


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

N-Channel MOSFET

IRLML2502 (KRLML2502)

■ Typical Characteristics

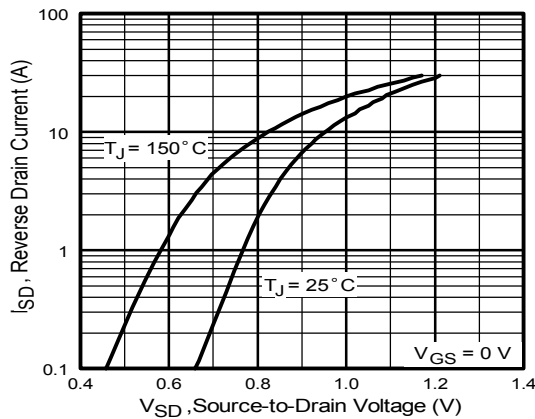


Fig 7. Typical Source-Drain Diode Forward Voltage

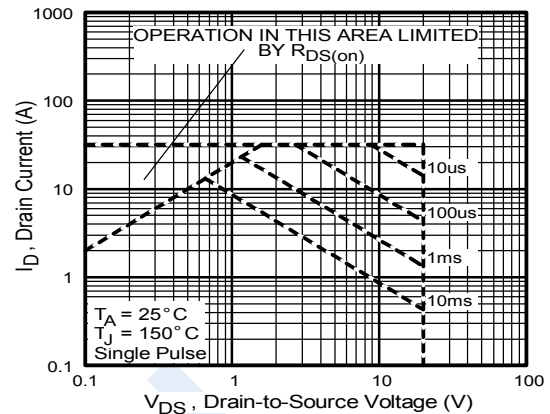


Fig 8. Maximum Safe Operating Area

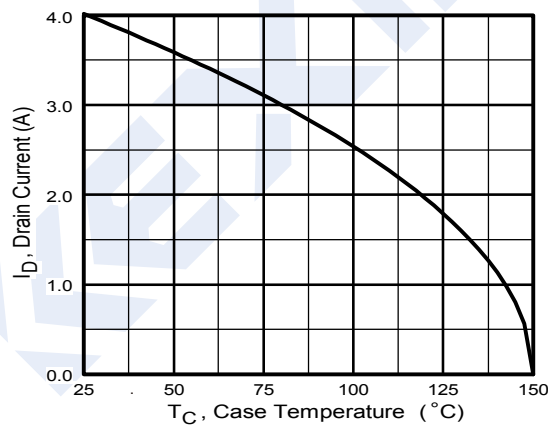


Fig 9. Maximum Drain Current Vs. Case Temperature

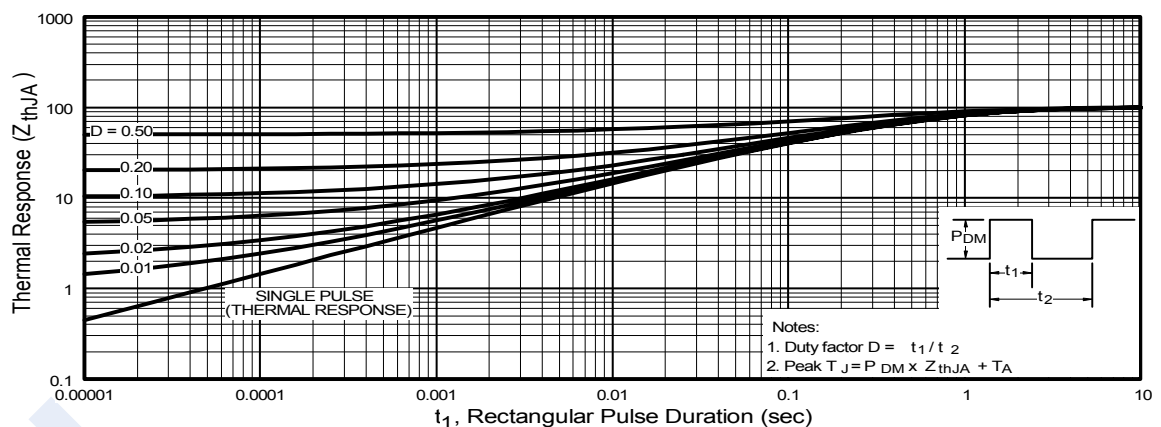


Fig 10. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

N-Channel MOSFET

IRLML2502 (KRLML2502)

■ Typical Characteristics

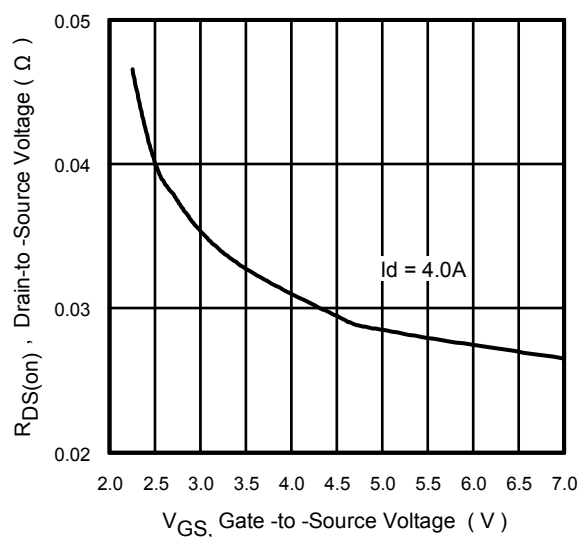


Fig 11. On-Resistance Vs. Gate Voltage

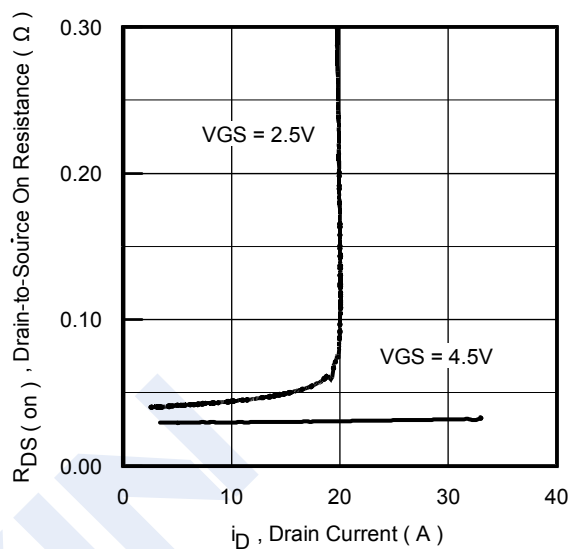


Fig 12. On-Resistance Vs. Drain Current