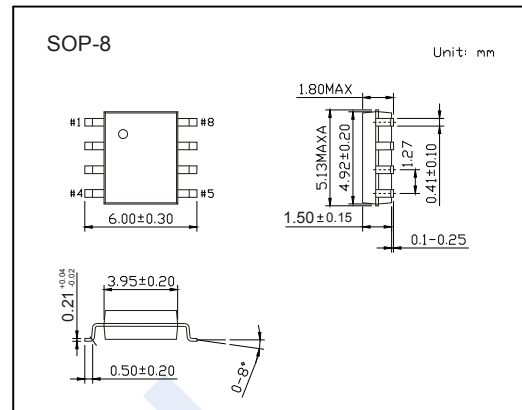
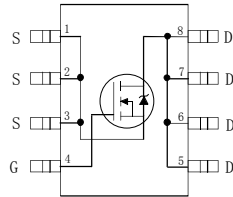


N-Channel Enhancement MOSFET

IRF7805Z (KRF7805Z)

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 16 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 6.8m\Omega (V_{GS} = 10V)$
- HEXFET Power MOSFET

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	$TA=25^\circ C$	16
		$TA=70^\circ C$	12
Pulsed Drain Current	I_{DM}	120	A
Avalanche Current	I_{AR}	12	A
Single Pulse Avalanche Energy	E_{AS}	72	mJ
Power Dissipation	P_D	$TA=25^\circ C$	2.5
		$TA=70^\circ C$	1.6
Thermal Resistance.Junction- to-Ambient	R_{thJA}	50	$^\circ C/W$
Thermal Resistance.Junction- to-Case	R_{thJC}	20	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	$^\circ C$

N-Channel Enhancement MOSFET

IRF7805Z (KRF7805Z)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	μA
		V _{DS} =24V, V _{GS} =0V, T _J =125°C			150	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	1.35		2.25	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =16A		5.5	6.8	mΩ
		V _{GS} =4.5V, I _D =13A		7.0	8.7	
Forward Transconductance	g _{FS}	V _{DS} =15V, I _D =12A	64			S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz		2080		pF
Output Capacitance	C _{oss}			480		
Reverse Transfer Capacitance	C _{rss}			220		
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz		1.0	2.1	Ω
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =15V, I _D =12A		18	27	nC
Gate Source Charge	Q _{gs1}			4.7		
Gate Source Charge	Q _{gs2}			1.6		
Gate Drain Charge	Q _{gd}			6.2		
Gate Charge Overdrive	Q _{godr}			5.5		
Switch Charge(Q _{gd} +Q _{gs2})	Q _{sw}			7.8		
Output Charge	Q _{oss}	V _{GS} =0V, V _{DS} =16V		10		
Turn-On DelayTime	t _{d(on)}	V _{GS} =4.5V, V _{DS} =15V, I _D =12A		11		ns
Turn-On Rise Time	t _r			10		
Turn-Off DelayTime	t _{d(off)}			14		
Turn-Off Fall Time	t _f			3.7		
Body Diode Reverse Recovery Time	t _{rr}	I _F =12A, di/dt=100A/μs, V _{DD} =15V		29	44	nC
Body Diode Reverse Recovery Charge	Q _{rr}			20	30	
Maximum Body-Diode Continuous Current	I _S				3.1	A
Pulsed Source Current	I _{SM}				120	
Diode Forward Voltage	V _{SD}	I _S =12A, V _{GS} =0V			1	V

N-Channel Enhancement MOSFET

IRF7805Z (KRF7805Z)

Typical Characteristics

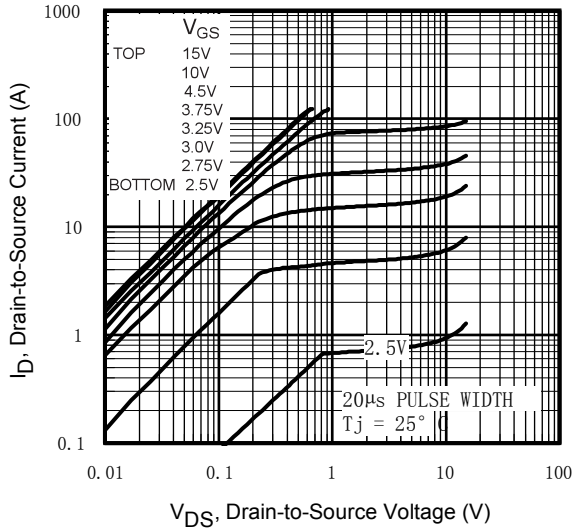


Fig 1. Typical Output Characteristics

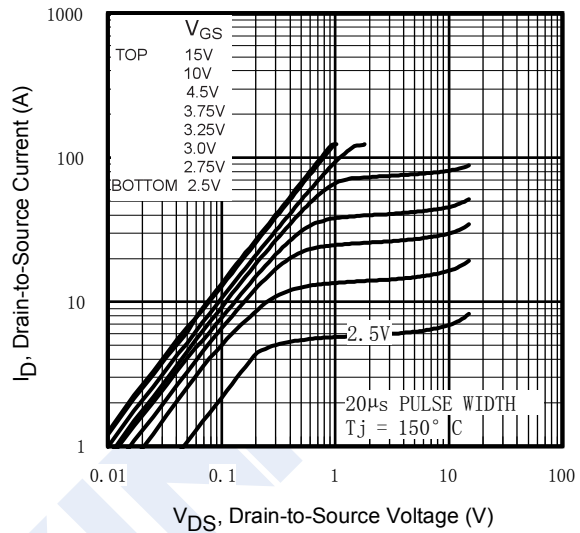


Fig 2. Typical Output Characteristics

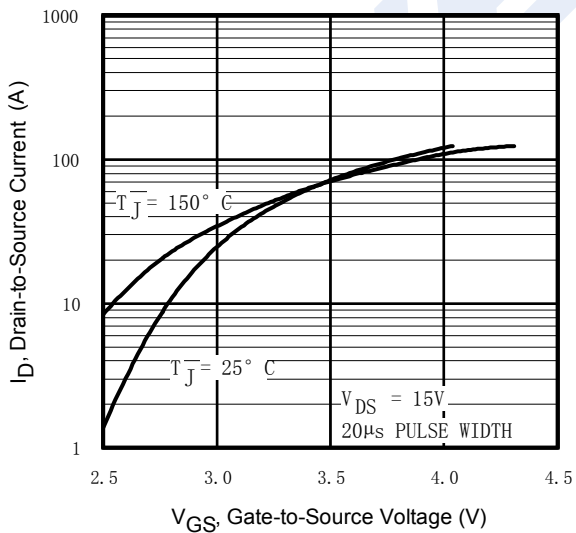


Fig 3. Typical Transfer Characteristics

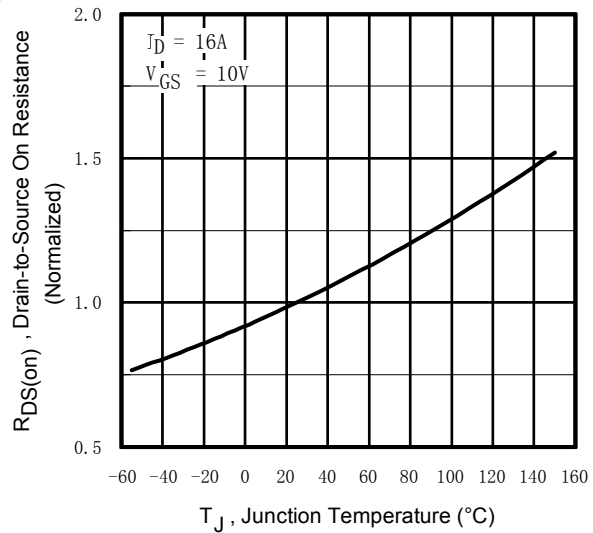


Fig 4. Normalized On-Resistance Vs. Temperature

N-Channel Enhancement MOSFET

IRF7805Z (KRF7805Z)

■ Typical Characteristics

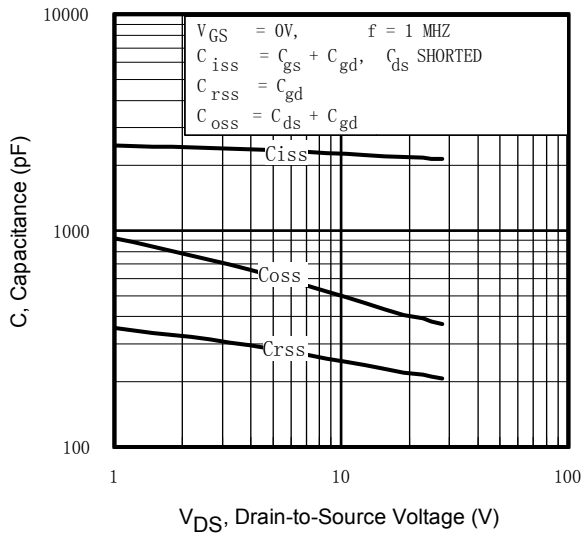


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

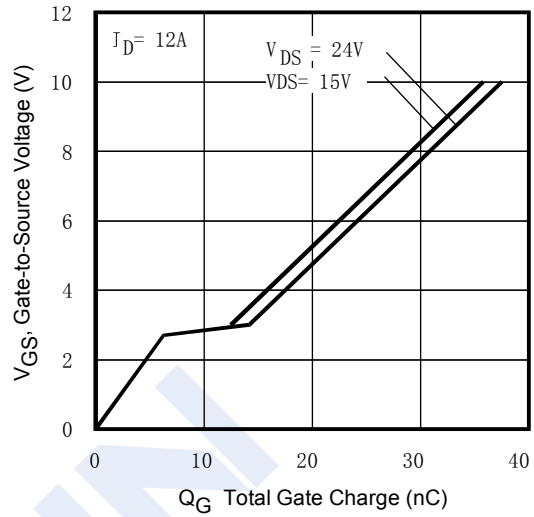


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

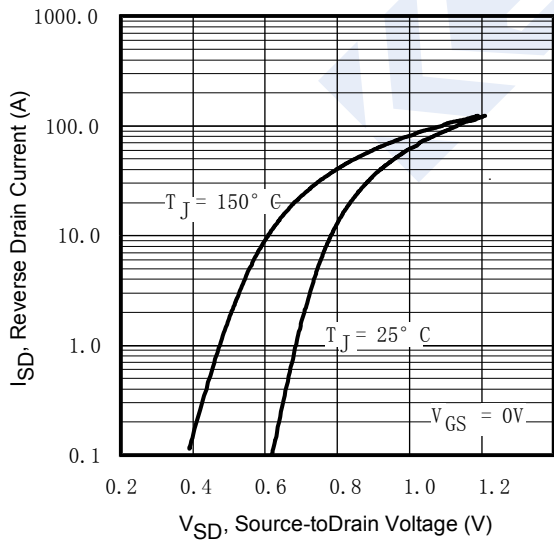


Fig 7. Typical Source-Drain Diode Forward Voltage

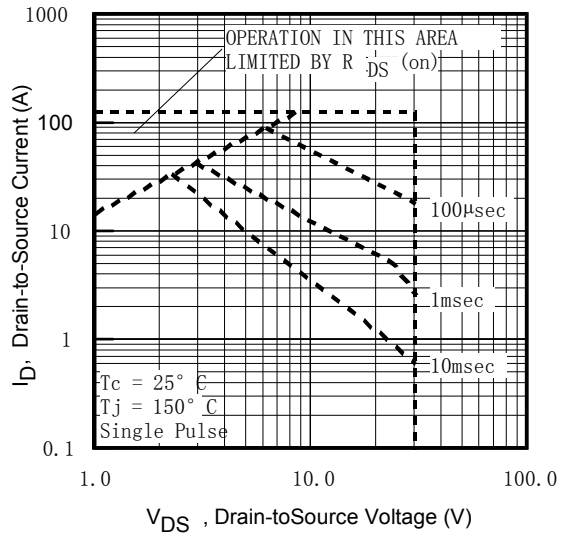


Fig 8. Maximum Safe Operating Area

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■ Typical Characteristics

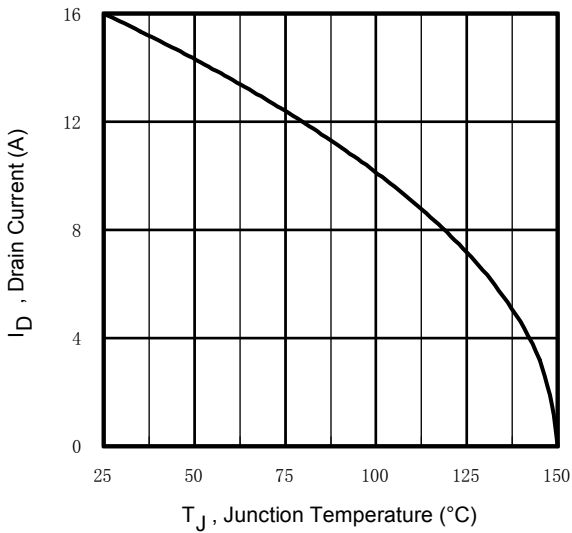


Fig 9. Maximum Drain Current Vs. Case Temperature

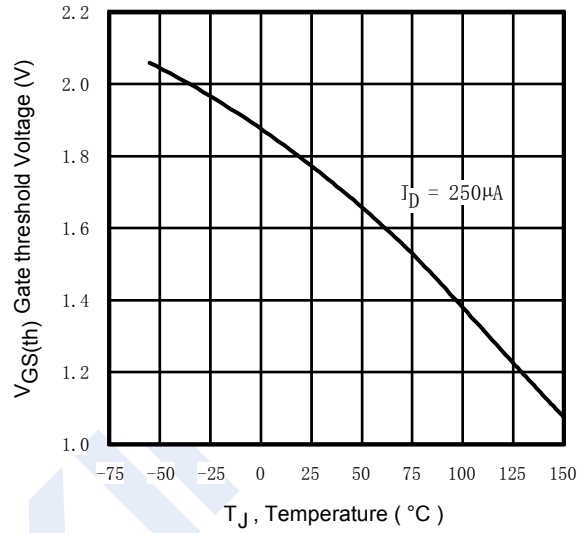


Fig 10. Threshold Voltage Vs. Temperature

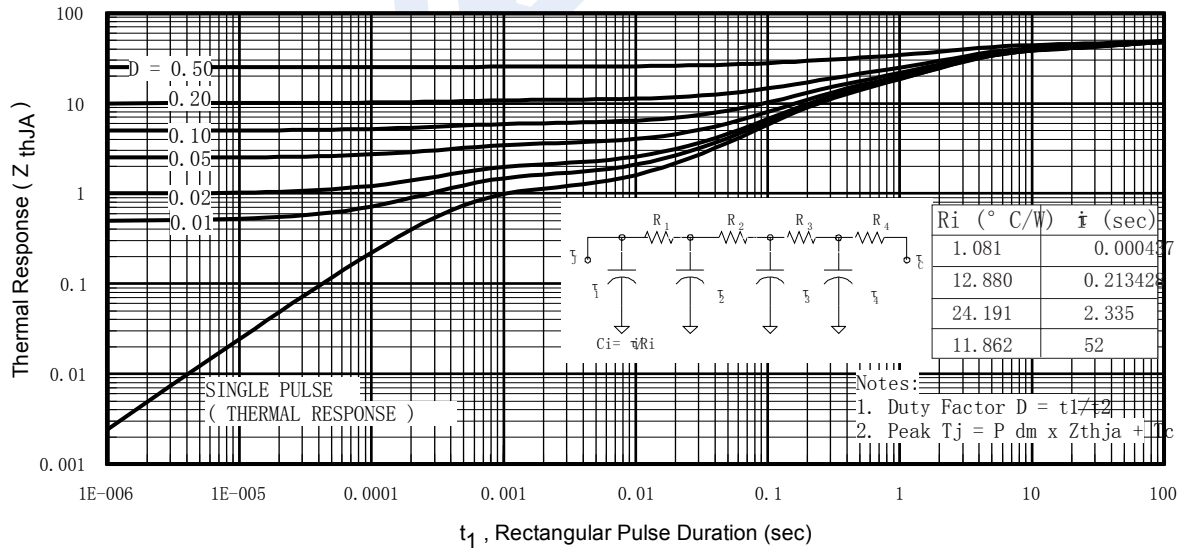


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

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■ Typical Characteristics

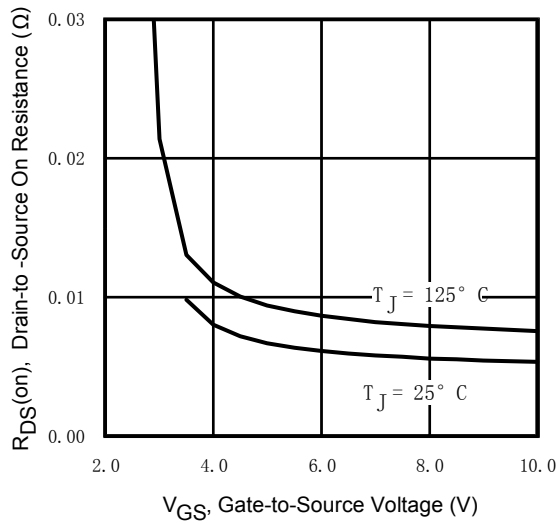


Fig 12. On-Resistance Vs. Gate Voltage

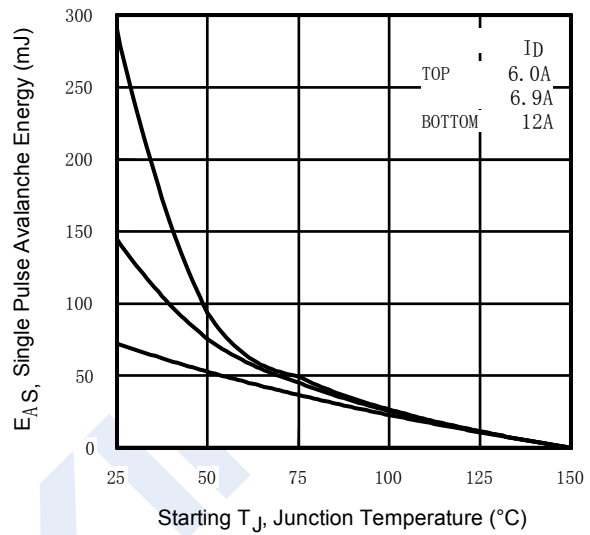


Fig 13c. Maximum Avalanche Energy Vs. Drain Current