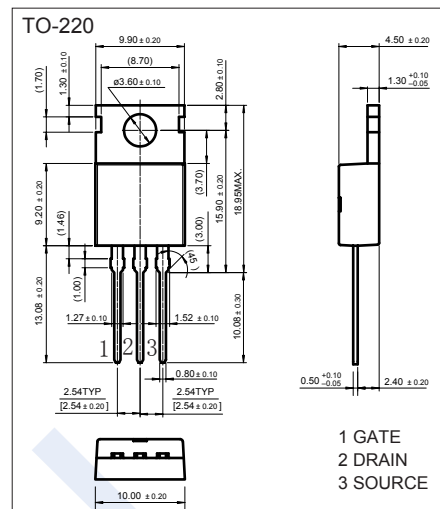
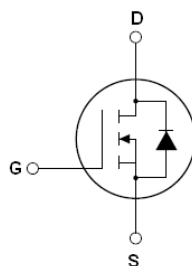


N-Channel MOSFET

KX90N06

■ Features

- $V_{DS} (V) = 70V$
- $I_D = 80 A$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 7.2m\Omega$ ($V_{GS} = 10V$)
- Ultra Low On-Resistance



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	70	V
Gate-Source Voltage	V_{GS}	± 25	
Continuous Drain Current	I_D	80	A
		56	
Pulsed Drain Current	I_{DM}	320	
Power Dissipation	P_D	100	W
Derating Factor		0.66	W/ $^\circ C$
Single Pulse Avalanche Energy	E_{AS}	360	mJ
Peak Diode Recovery Voltage	dv/dt	30	V/ns
Thermal Resistance Junction- to-Case	R_{thJC}	1.5	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

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■ 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	70			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =68V, V _{GS} =0V, T _C = 25°C			1	μA
		V _{DS} =68V, V _{GS} =0V, T _C = 125°C			10	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±25V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	2		4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =40A		5.9	7.2	mΩ
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =40A		28		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, f=1MHz		3187		pF
Output Capacitance	C _{oss}			396		
Reverse Transfer Capacitance	C _{rss}			184		
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =40A		82		nC
Gate Source Charge	Q _{gs}			16.2		
Gate Drain Charge	Q _{gd}			36.7		
Turn-On DelayTime	t _{d(on)}	V _{DD} =30V, I _D =2A, R _L =15Ω V _{GS} =10V, R _G =2.5Ω		11		ns
Turn-On Rise Time	t _r			13		
Turn-Off DelayTime	t _{d(off)}			22		
Turn-Off Fall Time	t _f			27		
Body Diode Reverse Recovery Time	t _{rr}	I _F = 75A, di/dt= 100A/μs, T _J = 25°C		40		nC
Body Diode Reverse Recovery Charge	Q _{rr}			81		
Maximum Body-Diode Continuous Current	I _S			80		A
Pulsed Source-Drain Current	I _{SM}			320		
Diode Forward Voltage	V _{SD}	I _S =40A, V _{GS} =0V, T _J = 25°C		0.69	0.95	V

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■ Typical Characteristics

Figure1. Safe Operating Area

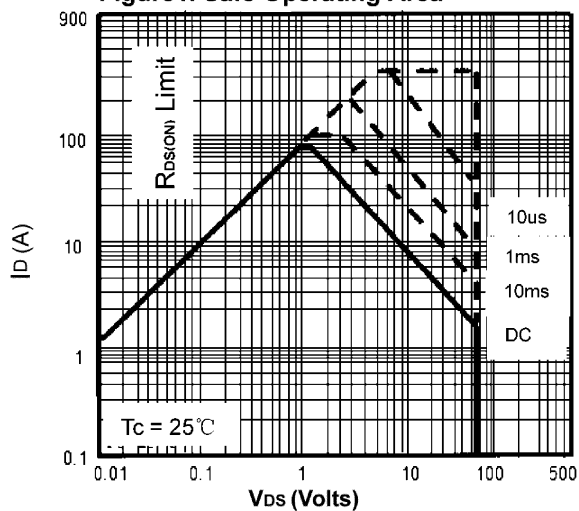


Figure2. Source-Drain Diode Forward Voltage

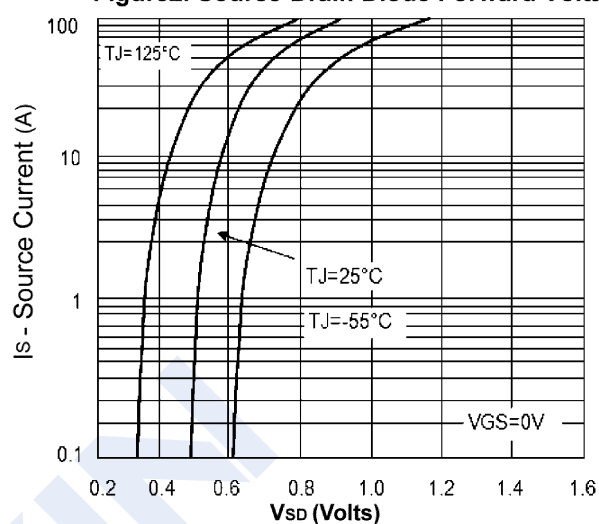


Figure3. Output Characteristics

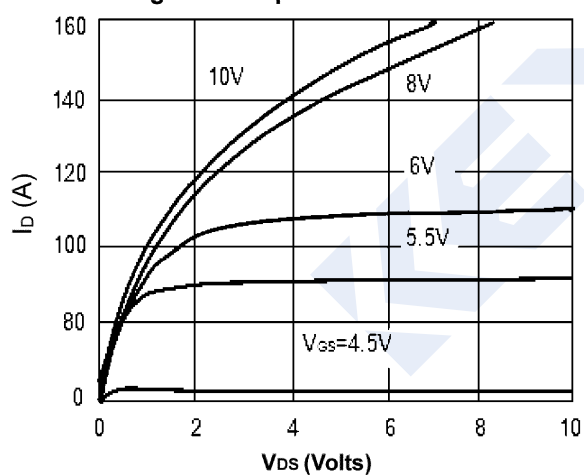


Figure4. Transfer Characteristics

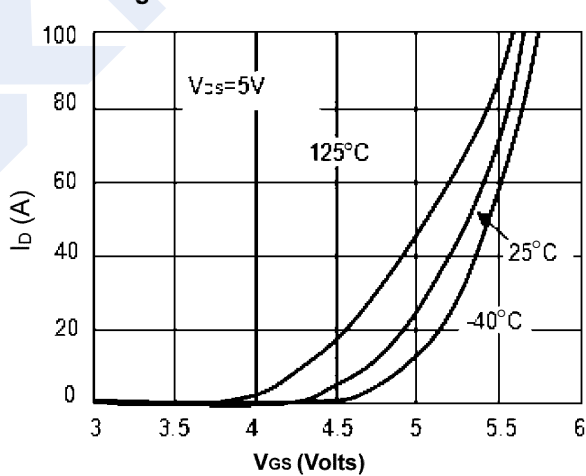
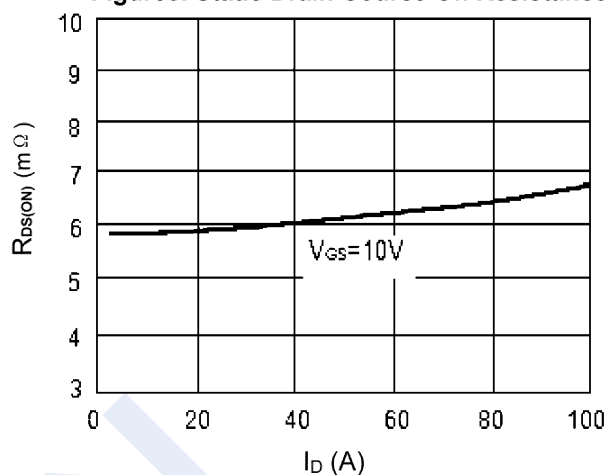
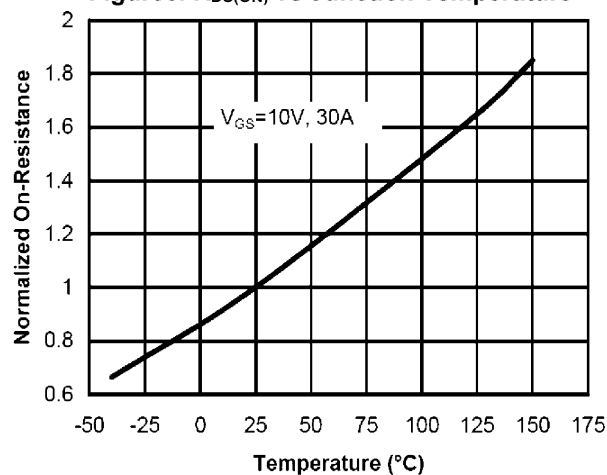


Figure5. Static Drain-Source On Resistance

Figure6. $R_{DS(ON)}$ vs Junction Temperature

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■ Typical Characteristics

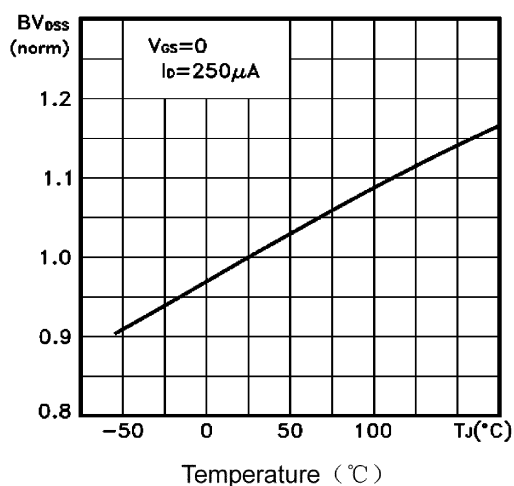
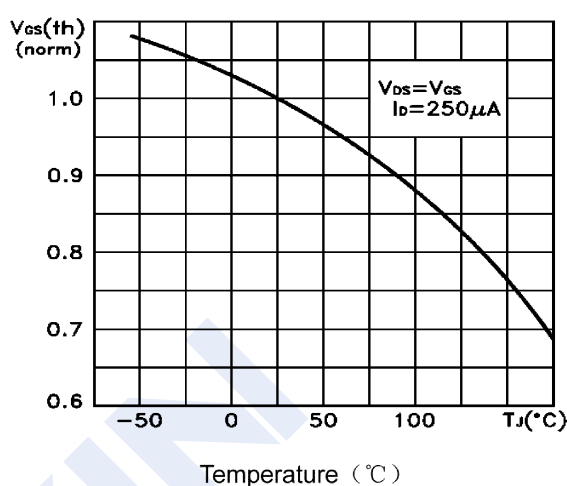
Figure7. BV_{DSS} vs Junction TemperatureFigure8. $V_{GS(th)}$ vs Junction Temperature

Figure9. Gate Charge Waveforms

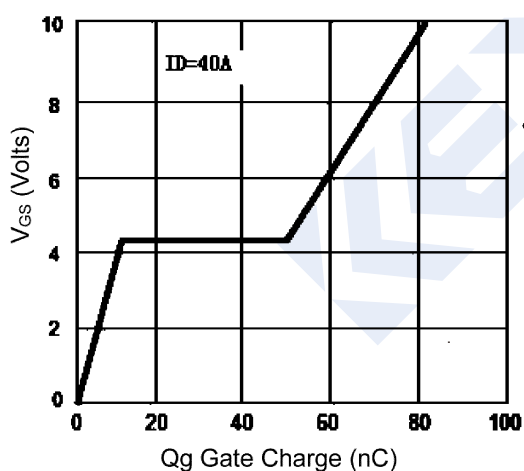


Figure10. Capacitance

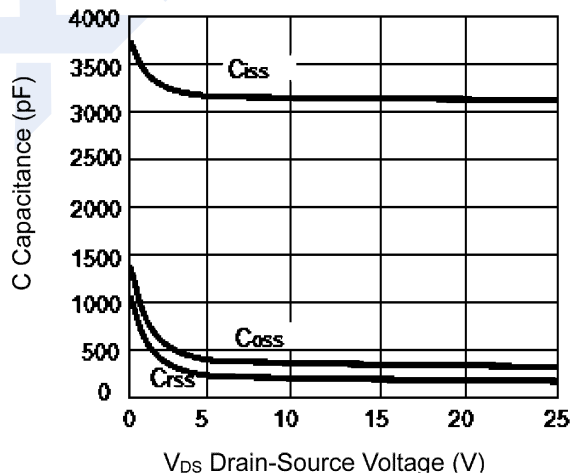


Figure11. Normalized Maximum Transient Thermal Impedance

