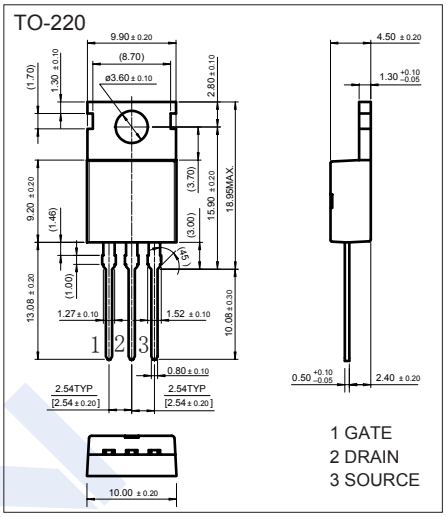
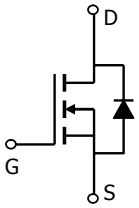
N-Channel MOSFET
KX120N06



■ Features

- $V_{DS\ (V)}$ = 60V
- I_D = 100 A (V_{GS} = 10V)
- $R_{DS(ON)}$ < 6.5mΩ (V_{GS} = 10V)
- Special process technology for high ESD capability
- Fully characterized Avalanche voltage and current



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	Ta=25℃	I_D	100	A
	Tc=100℃		70	
Pulsed Drain Current		I_{DM}	320	
Power Dissipation		P_D	150	W
Derating factor			1.07	W/℃
Single pulse avalanche energy		E_{AS}	550	mJ
Thermal Resistance.Junction- to-Case		R_{thJC}	0.94	℃/W
Junction Temperature		T_J	175	℃
Storage Temperature Range		T_{stg}	-55 to 175	

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	60	65		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	μA
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=250μA	2	3	4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=40A		5.7	6.5	mΩ
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=40A	60			S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=30V, f=1MHz		4800		pF
Output Capacitance	C_{oss}			440		
Reverse Transfer Capacitance	C_{rss}			260		
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=30V, I_D=30A		85		nC
Gate Source Charge	Q_{gs}			18		
Gate Drain Charge	Q_{gd}			28		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=10V, V_{DS}=30V, I_D=1A,R_G=2.5Ω		16.8		ns
Turn-On Rise Time	t_r			10.8		
Turn-Off DelayTime	$t_{d(off)}$			55		
Turn-Off Fall Time	t_f			13.6		
Body Diode Reverse Recovery Time	t_{rr}	I_F= 40A, dI/dt= 100A/μs,T_J = 25°C (Note.1)		38		
Body Diode Reverse Recovery Charge	Q_{rr}			53		nC
Maximum Body-Diode Continuous Current	I_S				90	A
Diode Forward Voltage	V_{SD}	I_S=20A,V_{GS}=0V			1.2	V

Note.1: Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

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■ Typical Characterisitics

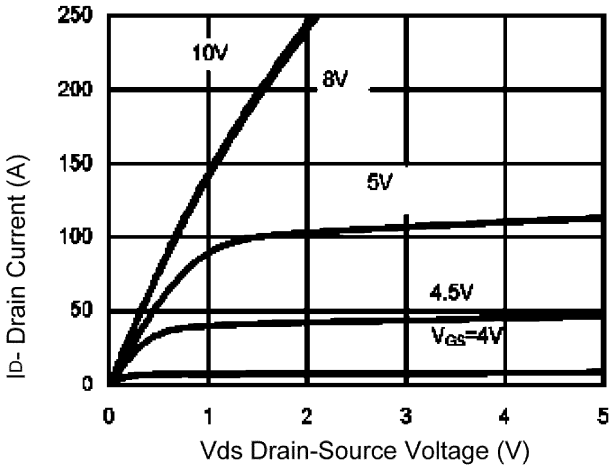

Figure 1 Output Characteristics

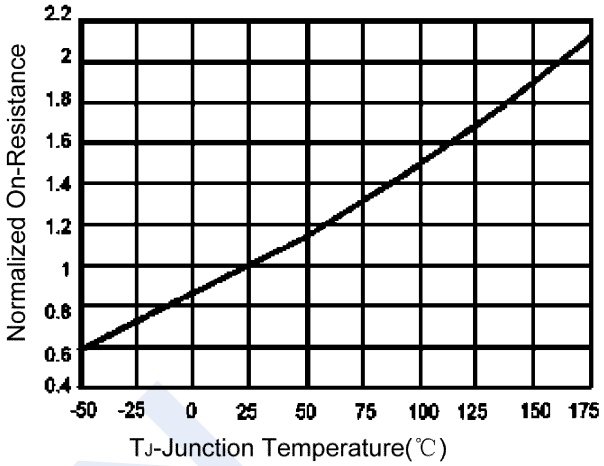

Figure 4 Rdson-JunctionTemperature

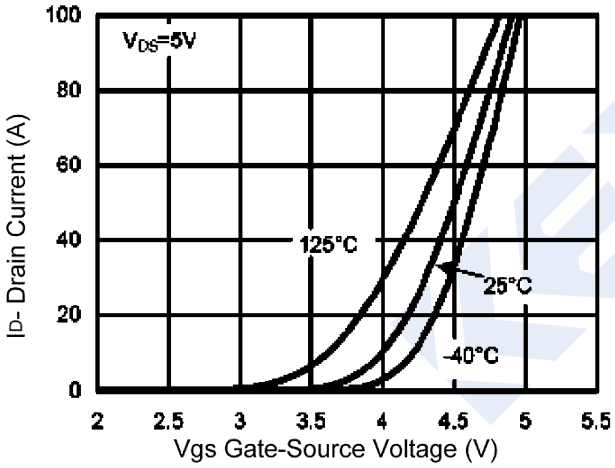

Figure 2 Transfer Characteristics

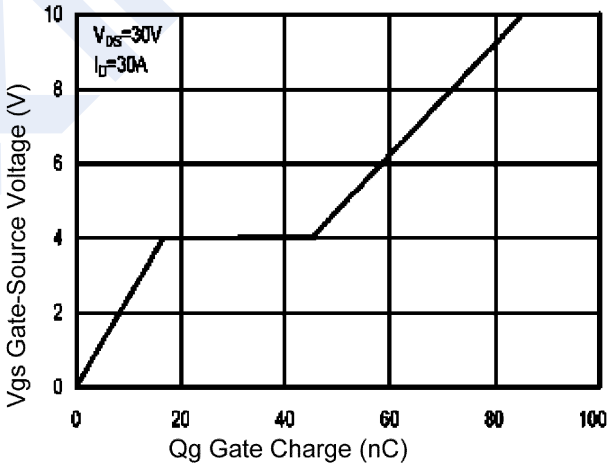

Figure 5 Gate Charge

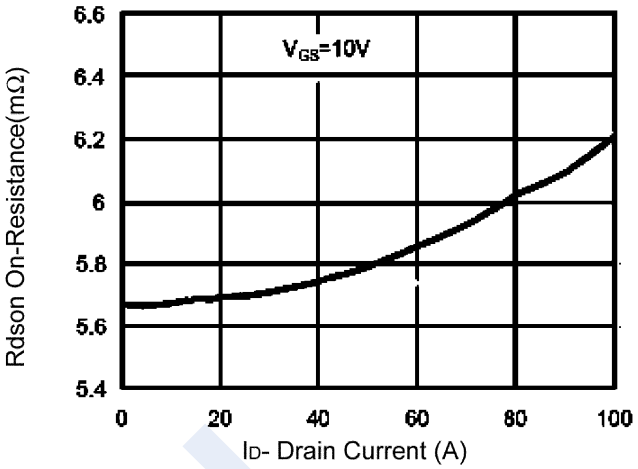

Figure 3 Rdson- Drain Current

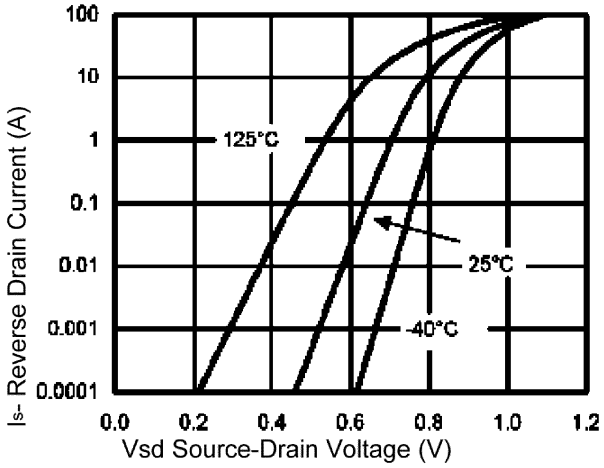

Figure 6 Source- Drain Diode Forward

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■ Typical Characterisitics

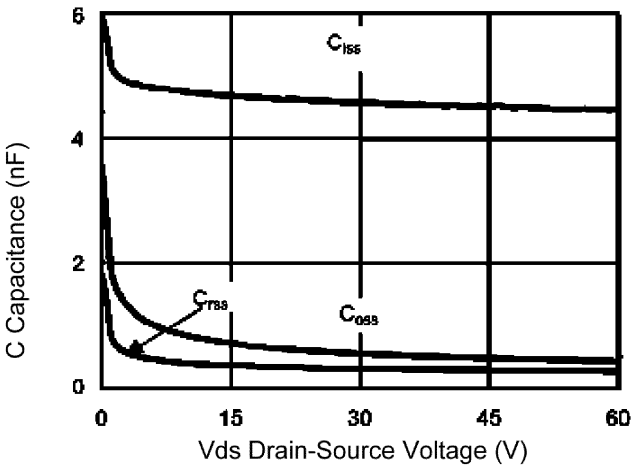

Figure 7 Capacitance vs Vds

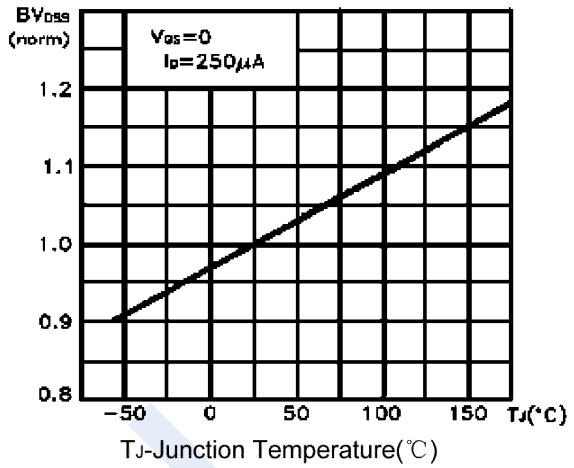

Figure 9 BV_{DSS} vs Junction Temperature

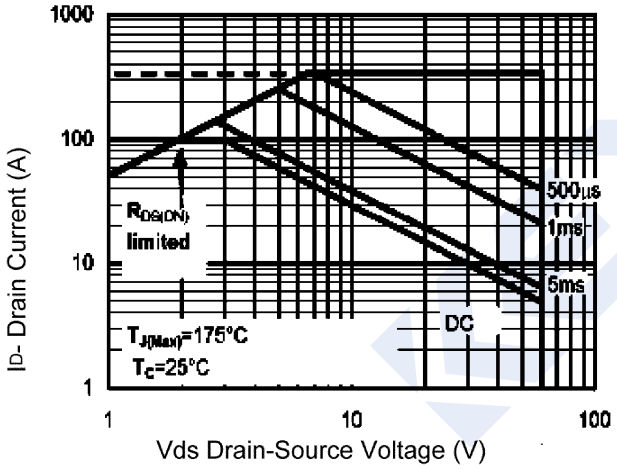

Figure 8 Safe Operation Area

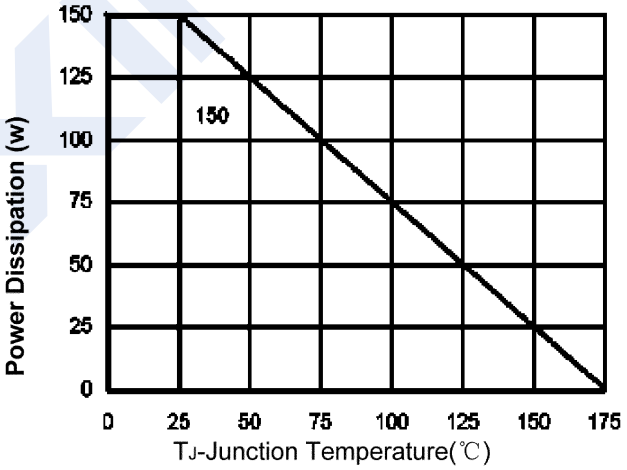

Figure 10 Ausemi De-rating

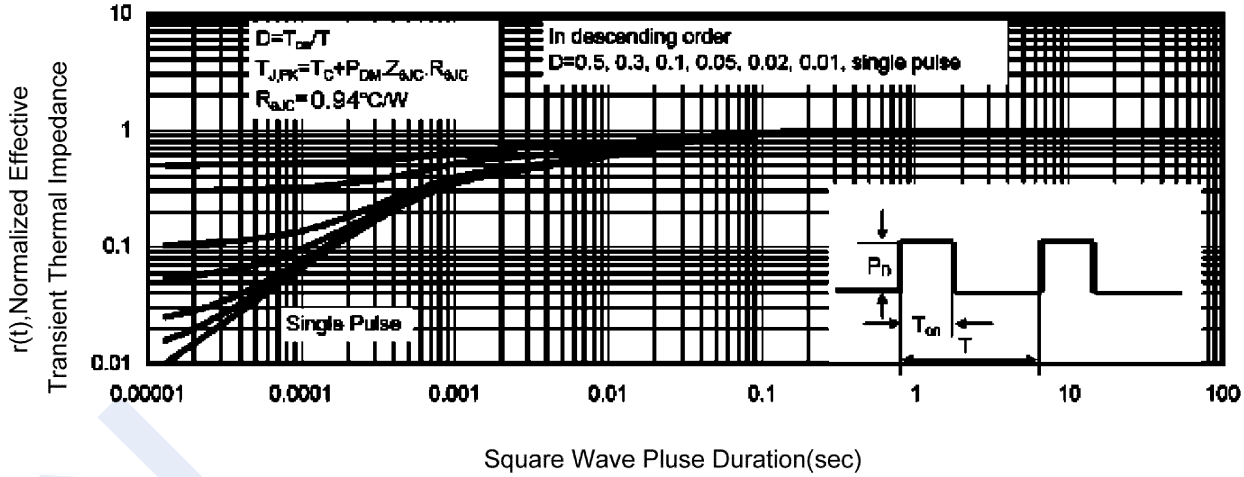

Figure 11 Normalized Maximum Transient Thermal Impedance