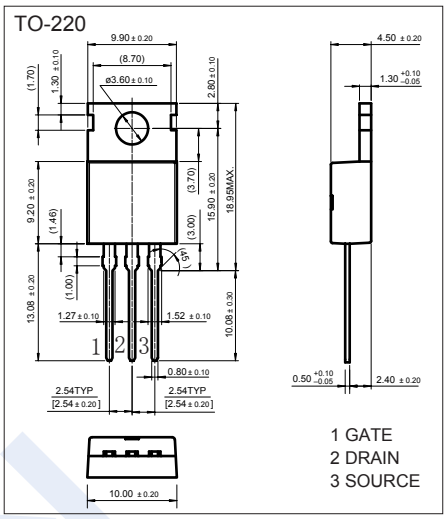
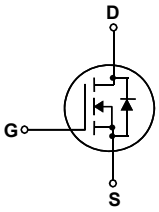
N-Channel MOSFET
KX8N60C



■ Features

- $V_{DS\ (V)}$ = 600V
- I_D = 7.5 A (V_{GS} = 10V)
- $R_{DS(ON)}$ < 1.2 Ω (V_{GS} = 10V)
- Fast switching
- Improved dv/dt capability



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	600	V
Gate-Source Voltage		V_{GS}	±30	
Continuous Drain Current	Tc=25℃	I_D	7.5	A
	Tc=100℃		4.6	
Pulsed Drain Current		I_{DM}	30	
Avalanche Current		I_{AR}	7.5	
Power Dissipation	Tc=25℃	P_D	147	W
Derate above 25℃			1.18	W/℃
Single Pulsed Avalanche Energy (Note.1)		E_{AS}	230	mJ
Repetitive Avalanche Energy		E_{AR}	14.7	
Peak Diode Recovery dv/dt (Note.2)		dv/dt	4.5	V/ns
Thermal Resistance.Junction- to-Ambient		R_{thJA}	62.5	℃/W
Thermal Resistance.Junction- to-Sink		R_{thJS}	0.5	
Thermal Resistance.Junction- to-Case		R_{thJC}	0.85	
Maximum lead temperature for soldering purposes, 1/8" from case for 5 seconds		T_L	300	℃
Junction Temperature		T_J	150	
Storage Temperature Range		T_{stg}	-55 to 150	

Note.1: L = 7.3mH, I_{AS} = 7.5A, V_{DD} = 50V, R_G = 25Ω, Starting T_J = 25°C

Note.2: I_{SD} ≤ 7.5A, di/dt ≤ 200A/us, V_{DD} ≤ BVDSS, Starting T_J = 25°C

N-Channel MOSFET

KX8N60C

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	600			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=600V, V_{GS}=0V			1	uA
		V_{DS}=480V, V_{GS}=0V, T_C=125℃			10	
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±30V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=250μA	2		4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=3.75A			1.2	Ω
Forward Transconductance	g_{FS}	V_{DS}=40V, I_D=3.75A (Note.1)		8.7		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=25V, f=1MHz		1000		pF
Output Capacitance	C_{oss}			110		
Reverse Transfer Capacitance	C_{rss}			12		
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=480V, I_D=7.5A (Note.1)		29		nC
Gate Source Charge	Q_{gs}			4.7		
Gate Drain Charge	Q_{gd}			12.5		
Turn-On DelayTime	$t_{d(on)}$	V_{DS}=300V, I_D=7.5A,R_G=25Ω (Note.1)		20		ns
Turn-On Rise Time	t_r			50		
Turn-Off DelayTime	$t_{d(off)}$			80		
Turn-Off Fall Time	t_f			70		
Body Diode Reverse Recovery Time	t_{rr}	I_S= 7.5A, V_{GS}=0, dI/dt= 100A/μs (Note.1)		350		
Body Diode Reverse Recovery Charge	Q_{rr}			3.3		uC
Maximum Body-Diode Continuous Current	I_S				7.5	A
Pulsed Drain-Source Diode Forward Current	I_{SM}				30	
Diode Forward Voltage	V_{SD}	I_S=7.5A,V_{GS}=0V			1.4	V

Note.1: Pulse Test : Pulse width≤ 300us, Duty cycle ≤ 2%

N-Channel MOSFET
KX8N60C

■ Typical Characterisitics

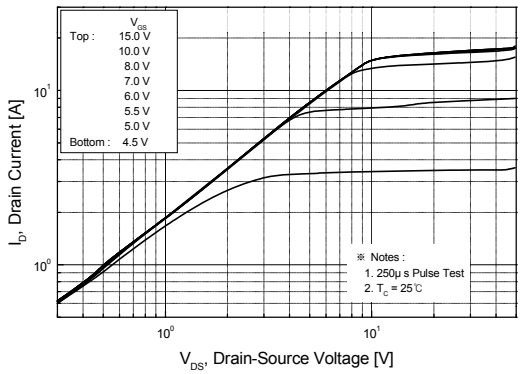


Figure 1. On-Region Characterist ics

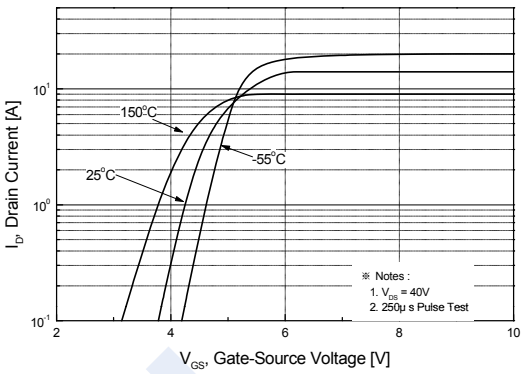


Figure 2. Transfer Character istics

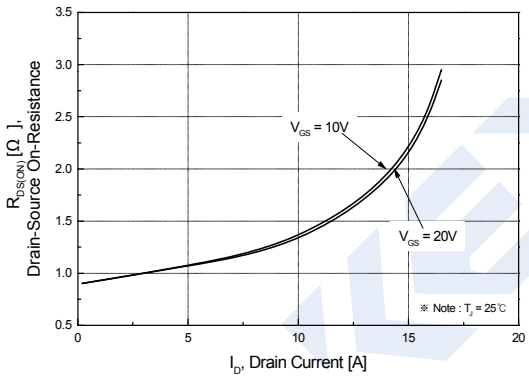


Figure 3. On-Resistance Variation vs Drain Current and Gate Voltage

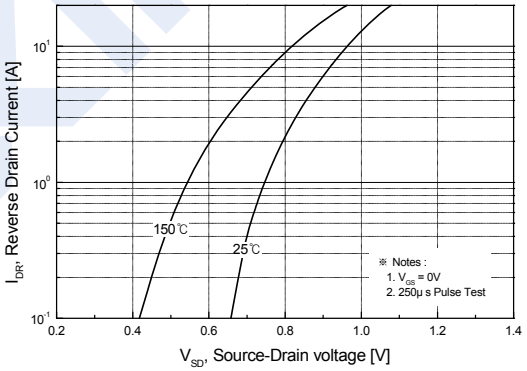


Figure 4. Body Diode Forward Voltage Variation with Source Current and Temperature

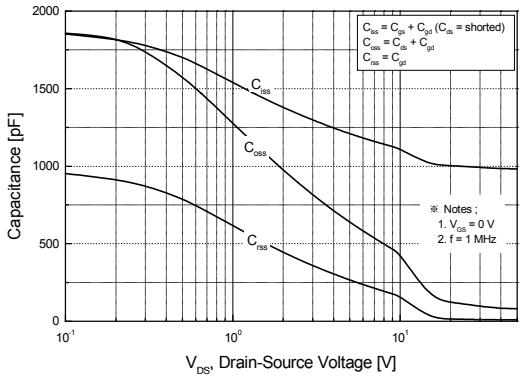


Figure 5. Capacitance Characteristics

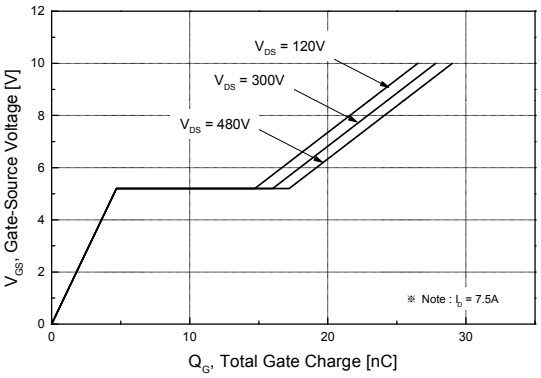


Figure 6. Gate Charge Characteristics

N-Channel MOSFET
KX8N60C

■ Typical Characterisitics

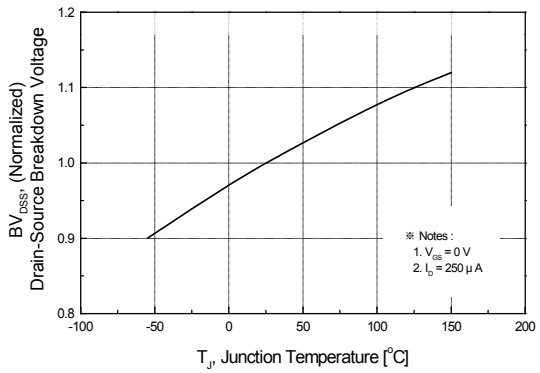


Figure 7. Breakdown Voltage Variation vs Temperature

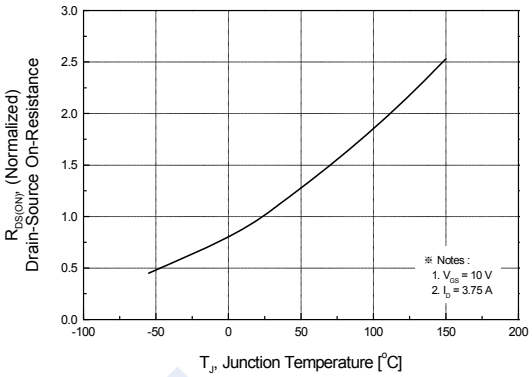


Figure 8. On-Resistance Variation vs Temperature

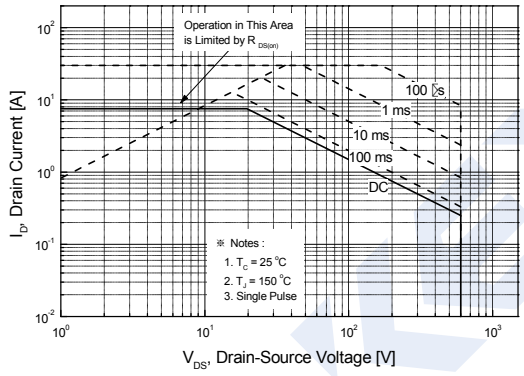


Figure 9. Maximum Safe Operating Area for KX8N60C

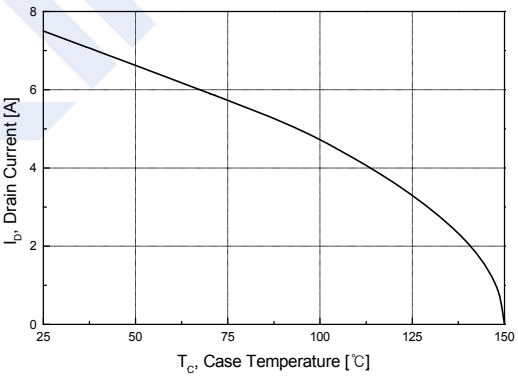


Figure 10. Maximum Drain Current vs Case Temperature

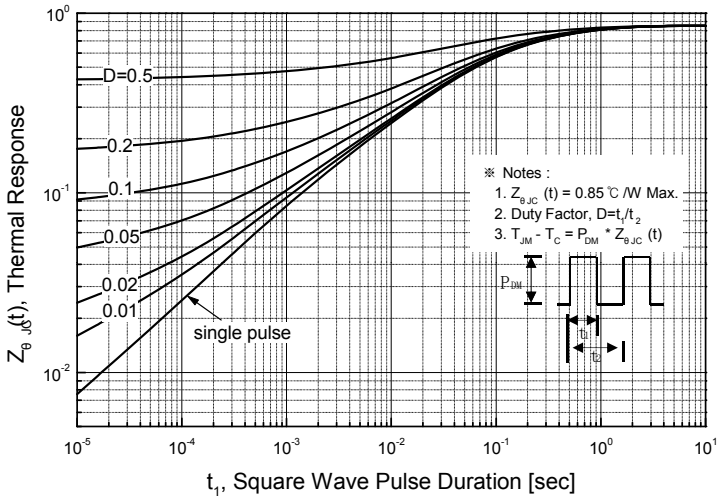


Figure 11 Transient Thermal Response Curve for KX8N60C