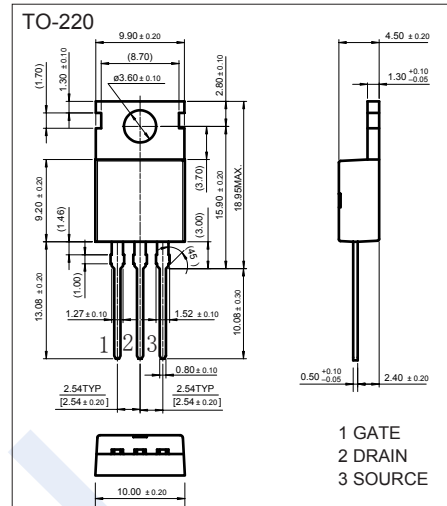
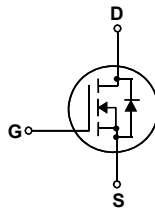


N-Channel MOSFET

KX8N60C

■ Features

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



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	± 30	
Continuous Drain Current	I_D	7.5	A
		4.6	
Pulsed Drain Current	I_{DM}	30	
Avalanche Current	I_{AR}	7.5	
Power Dissipation	P_D	147	W
Derate above $25^\circ C$		1.18	W/ $^\circ C$
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	$^\circ C/W$
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	$^\circ C$
Junction Temperature	T_J	150	
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: $L = 7.3mH$, $I_{AS} = 7.5A$, $V_{DD} = 50V$, $R_G = 25\Omega$, Starting $T_J = 25^\circ C$

Note.2: $I_{SD} \leq 7.5A$, $di/dt \leq 200A/\mu s$, $V_{DD} \leq BVDSS$, Starting $T_J = 25^\circ C$

N-Channel MOSFET

KX8N60C

■ 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	600			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =600V, V _{GS} =0V			1	μA
		V _{DS} =480V, V _{GS} =0V, T _C =125°C			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 =250 μA	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 =25 Ω (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		μC
Body Diode Reverse Recovery Charge	Q _{rr}			3.3		
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 ≤ 300μs, Duty cycle ≤ 2%

N-Channel MOSFET

KX8N60C

■ Typical Characteristics

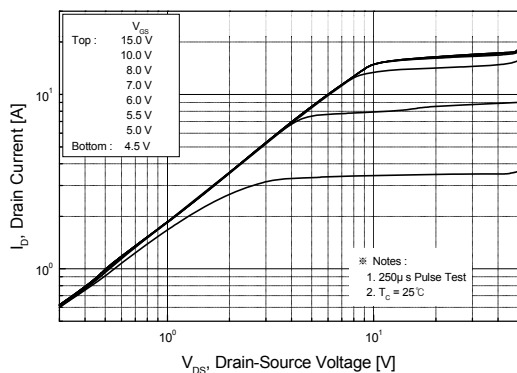


Figure 1. On-Region Characteristics

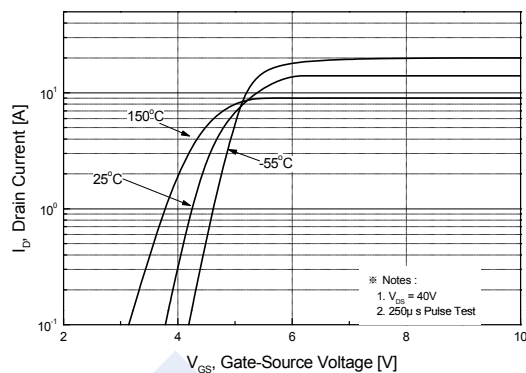


Figure 2. Transfer Characteristics

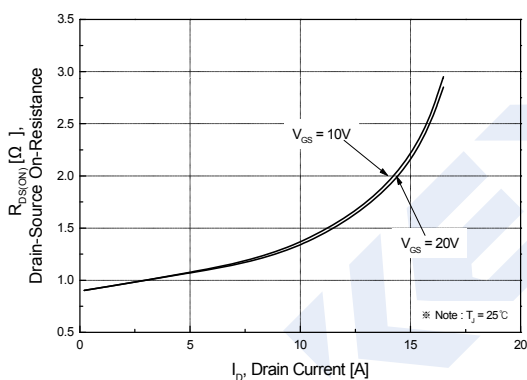


Figure 3. On-Resistance Variation vs Drain Current and Gate Voltage

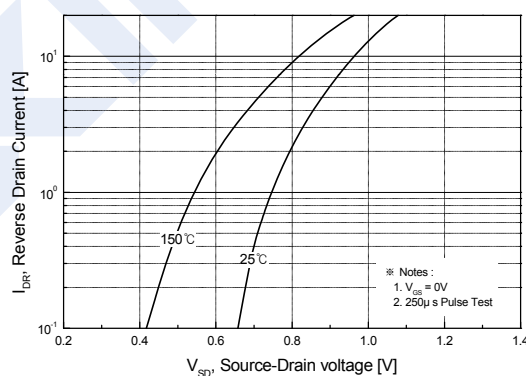


Figure 4. Body Diode Forward Voltage Variation with Source Current and Temperature

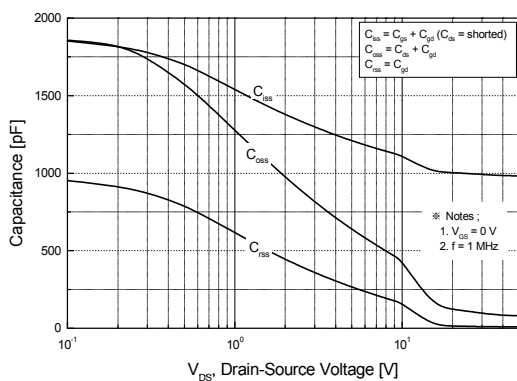


Figure 5. Capacitance Characteristics

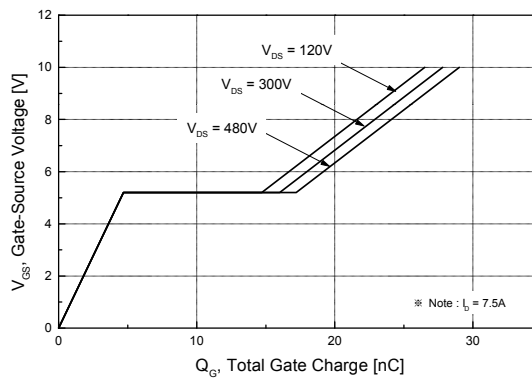


Figure 6. Gate Charge Characteristics

N-Channel MOSFET

KX8N60C

■ Typical Characteristics

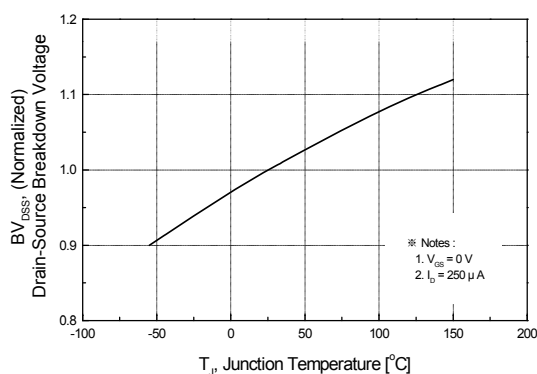


Figure 7. Breakdown Voltage Variation vs Temperature

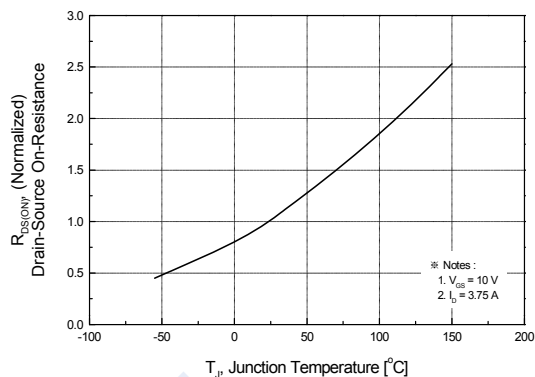


Figure 8. On-Resistance Variation vs Temperature

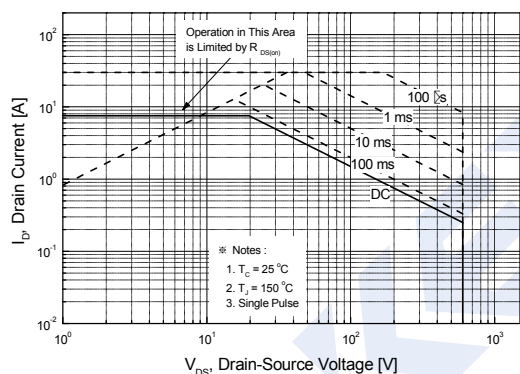


Figure 9. Maximum Safe Operating Area for KX8N60C

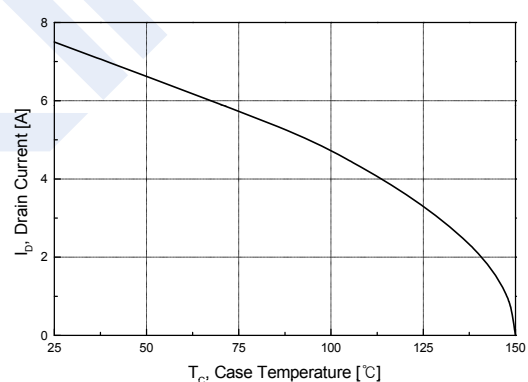


Figure 10. Maximum Drain Current vs Case Temperature

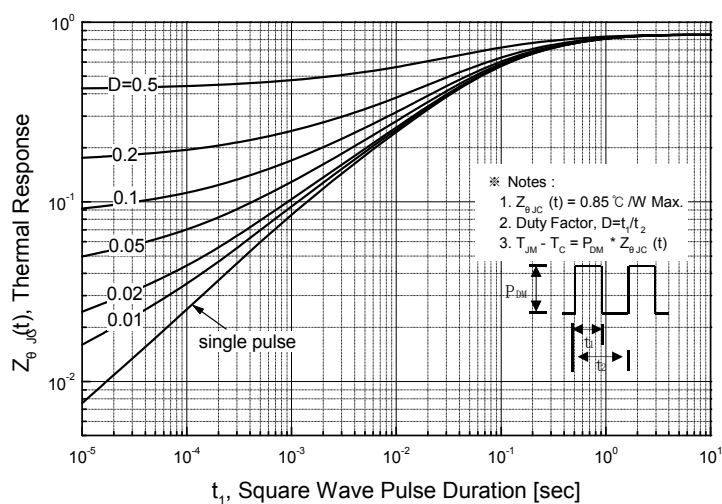


Figure 11. Transient Thermal Response Curve for KX8N60C