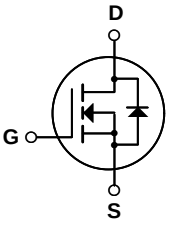
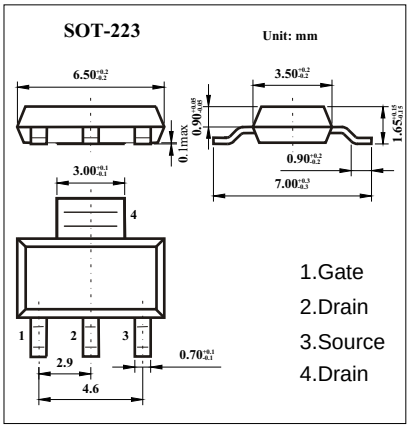
N-Channel MOSFET
KX7N10L

Features

- $V_{DS\,(V)}$ = 100V
- I_D = 1.7 A (V_{GS} = 10V)
- $R_{DS(ON)}$ < 350mΩ (V_{GS} = 10V), I_D=0.85A
- $R_{DS(ON)}$ < 380mΩ (V_{GS} = 5V), I_D=0.85A





Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current - Continuous (TC = 25°C)	I_D	1.7	A
- Continuous (TC= 70°C)		1.36	
Pulsed Drain Current	I_{DM}	6.8	
Single Pulsed Avalanche Energy	E_{AS}	50	mJ
Repetitive Avalanche Energy	E_{AR}	0.2	
Avalanche Current	I_{AR}	1.7	A
Power Dissipation (T = 25°C)	P_D	2.0	W
- Derate above 25°C		0.016	°C/W
Thermal Resistance.Junction- to-Ambient	R_{thJA}	62.5	
Peak Diode Recovery dv/dt	dv/dt	6.0	V/ns
Maximum lead temperature for soldering purposes, 1/8"from case for 5 seconds	T_L	300	°C
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	

KX7N10L

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V			1	μA
		V_{DS}=80V, V_{GS}=0V, T_J=125°C			10	
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	1.0		2.0	V
Static Drain-Source On-Resistance	$R_{DS(On)}$	V_{GS}=10V, I_D=0.85A		275	350	mΩ
		V_{GS}=5V, I_D=0.85A		300	380	
Forward Transconductance	g_{FS}	V_{DS}=30V, I_D=0.85A		2.75		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=25V, f=1MHz		220	290	pF
Output Capacitance	C_{oss}			55	72	
Reverse Transfer Capacitance	C_{rss}			12	15	
Total Gate Charge	Q_g	V_{GS}=5V, V_{DS}=80V, I_D=7.5A		4.6	6.0	nC
Gate Source Charge	Q_{gs}			1.0		
Gate Drain Charge	Q_{gd}			2.6		
Turn-On DelayTime	$t_{d(on)}$	V_{DS}=50V, I_D=7.3A,R_G=25Ω		9	30	ns
Turn-On Rise Time	t_r			100	210	
Turn-Off DelayTime	$t_{d(off)}$			17	45	
Turn-Off Fall Time	t_f			50	110	
Body Diode Reverse Recovery Time	t_{rr}	I_S=7.3A, dI/dt=100A/μs		70		
Body Diode Reverse Recovery Charge	Q_{rr}	I_S=7.3A, dI/dt=100A/μs		140		nC
Maximum Body-Diode Continuous Current	I_S				1.7	A
Diode Forward Voltage	V_{SD}	I_S=1.7A,V_{GS}=0V			1.5	V

KX7N10L

■ Typlacl Characteristics

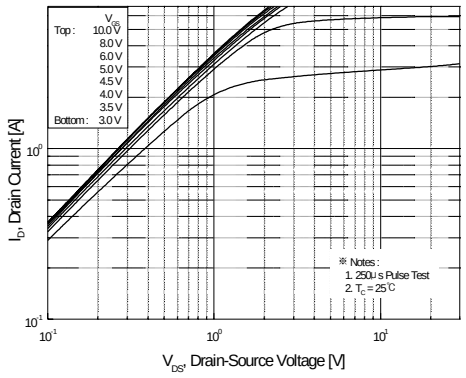


Figure 1. On-Region Characteristics

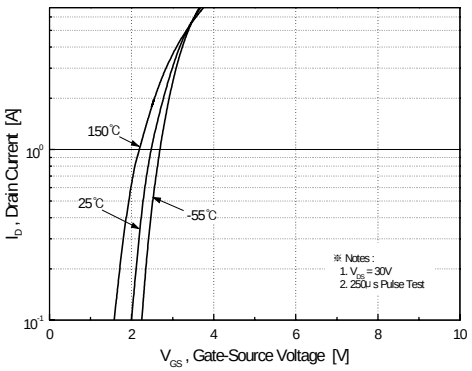


Figure 2. Transfer Characteristics

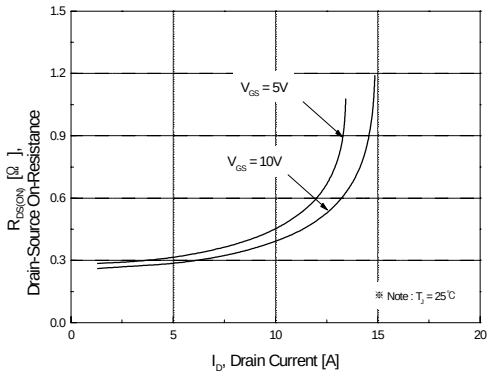


Figure 3. On-Resistance Variation vs. Drain Current and Gate Voltage

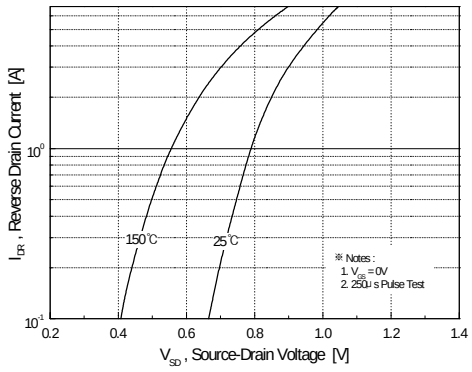


Figure 4. Body Diode Forward Voltage Variation vs. Source Current and Temperature

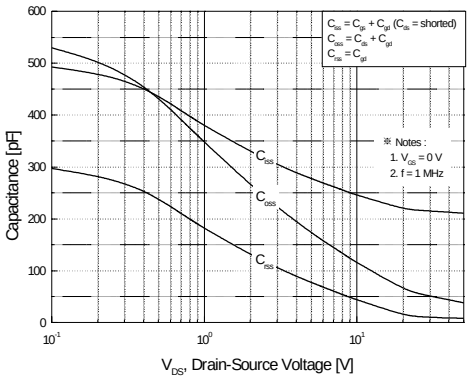


Figure 5. Capacitance Characteristics

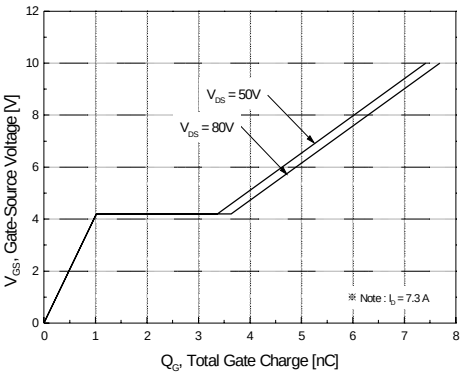


Figure 6. Gate Charge Characteristics

KX7N10L

■ Typlacl Characteristics

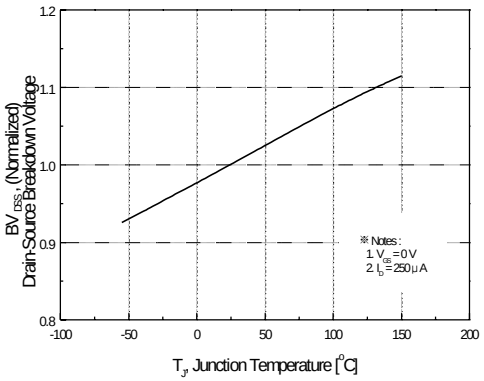


Figure 7. Breakdown Voltage Variation vs. Temperature

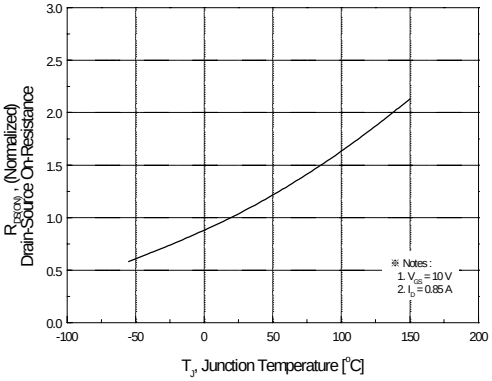


Figure 8. On-Resistance Variation vs. Temperature

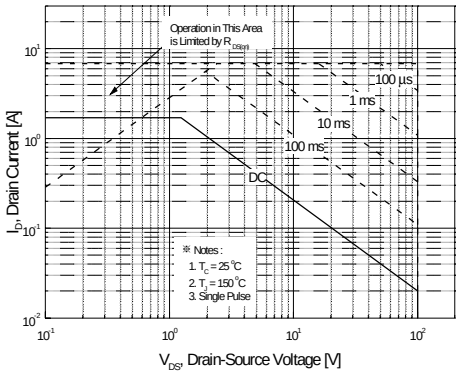


Figure 9. Maximum Safe Operating Area

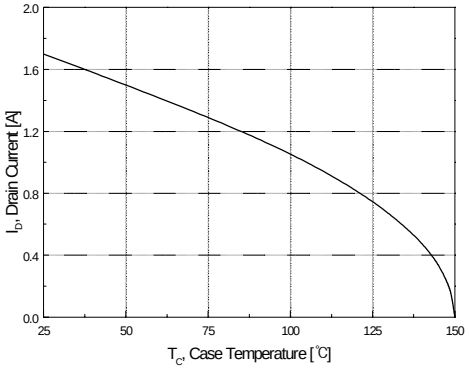


Figure 10. Maximum Drain Current vs. Case Temperature

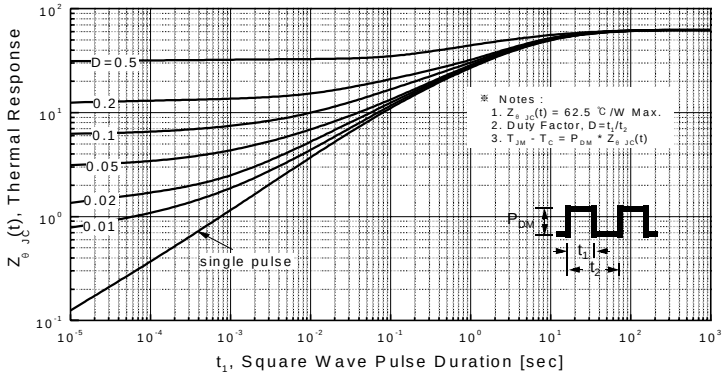


Figure 11. Transient Thermal Response Curve