快捷芯
KUAIJIEXIN

KJ1210GM

N-Channel Enhancement Mode MOSFET

1. Product Information

1.1 Features

- ☑ Advanced Trench Cell Design
- ☑ Low Thermal Resistance

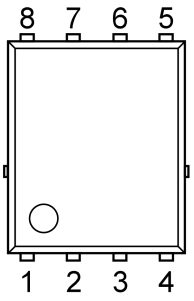
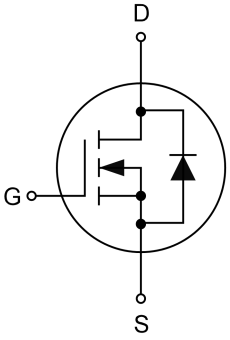
1.2 Applications

- ☑ Motor Drivers
- ☑ DC/DC Converter

1.3 Quick Reference

- ☑ BV ≧100 V
- ☑ $R_{DS(ON)}$ ≦ 11 mΩ @V_{GS} = 10 V
- ☑ P_{tot} ≦43 W
- ☑ $R_{DS(ON)}$ ≦ 18 mΩ @V_{GS} = 4.5 V
- ☑ I_D ≦41 A

2. Pin Description

Pin	Description	Simplified Outline	Symbol
1,2,3	Source		
4	Gate		
5,6,7,8	Drain		

Top View
PDFN5x6-8L

3. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DS}	Drain-Source Voltage	T_C=25℃	100	-	V
V_{GS}	Gate-Source Voltage	T_C=25℃	-	±20	V
I_D	Drain Current (DC)	T_C=25℃, V_{GS}=10 V	-	41	A
		T_C=100℃, V_{GS}=10 V	-	25	A
I_{DM} *	Drain Current (Pulsed)	T_C=25℃, V_{GS}=10 V	-	164	A
P_{tot}	Total Power Dissipation	T_C=25℃	-	43	W
I_S	Diode Forward Current	T_C=25℃	-	41	A
E_{AS}	Single Pulsed Avalanche Energy	V_{DD}=50 V, L=1.0 mH	-	192	mJ
T_J, T_{stg}	Operating Junction and Storage Temperature Range		-55	150	℃
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient		-	60	℃/W
$R_{\theta JC}$	Thermal Resistance-Junction to Case		-	2.9	

Notes:

* Pulse width ≤ 300 μs, duty cycle ≤ 2%.

** Surface mounted on 1 in^2 pad area, t ≤ 10 sec.

*** Limited by bonding wire.

4. Marking Information

Product Name	Marking
KJ1210GM	**1210M XXXXXX**

5. Ordering Code

Product Name	Package	Reel size	Tape width	Quantity (pcs)
KJ1210GM	**PDFN 5x6-8L**	**13"**	**12 mm**	**5000**

Note:

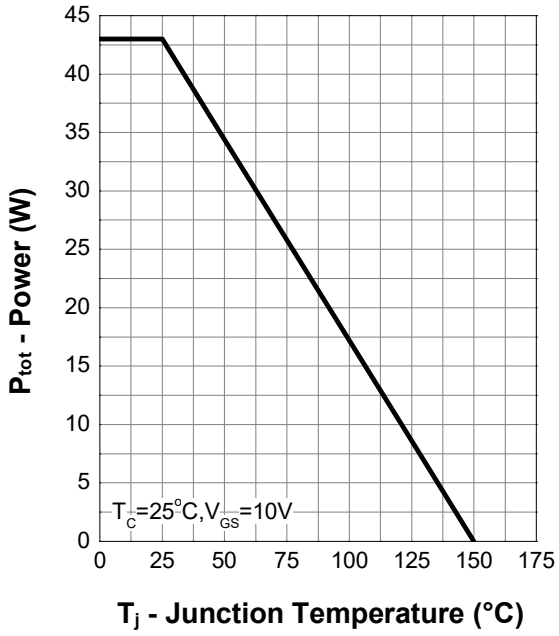
KUAIJIEXIN defines “Green” as lead-free (RoHS compliant) and halogen free (Br or Cl does not exceed 900 ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500 ppm by weight; Follow IEC 61249-2-21 and IPC/JEDEC J-STD-020C)

6. Electrical Characteristics (T_A=25℃ unless otherwise noted)

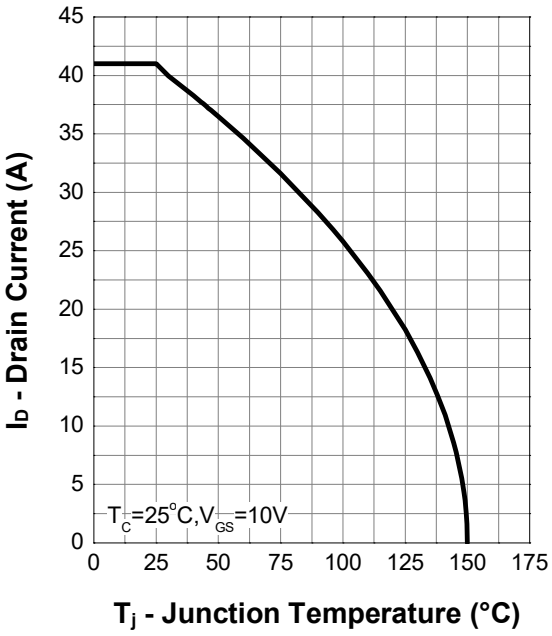
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0 V, I_{DS}=250 μA	100	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_{DS}=250 μA	1	-	3	V
I_{DSS}	Zero Gate Voltage Source Current	V_{DS}=80 V, V_{GS}=0 V	-	-	1	μA
I_{GSS}	Gate Leakage Current	V_{GS}=±20 V, V_{DS}=0 V	-	-	±100	nA
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}=10 V, I_D=30 A	-	10.2	11	mΩ
		V_{GS}=4.5 V, I_D=20 A	-	15.6	18	mΩ
Diode Characteristics						
V_{SD}	Diode Forward Voltage	I_{SD}=30 A, V_{GS}=0 V	-	-	1.3	V
t_{rr}	Reverse Recovery Time	I_{DS}=30 A, V_{GS}=0 V, dI_{SD}/dt=100 A/μs	-	42	-	ns
Q_{rr}	Reverse Recovery Charge		-	34	-	nC
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{GS}=0 V, V_{DS}=50 V, Frequency=1 MHz	-	1186	-	pF
C_{oss}	Output Capacitance		-	232	-	
C_{rss}	Reverse Transfer Capacitance		-	38	-	
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=50 V, V_{GEN}=10 V, R_G=3.9 Ω, R_L=1.66 Ω, I_{DS}=30 A	-	7.5	-	ns
t_r	Turn-on Rise Time		-	23	-	
$t_{d(off)}$	Turn-off Delay Time		-	20	-	
t_f	Turn-off Fall Time		-	25	-	
Gate Charge Characteristics						
Q_g	Total Gate Charge	V_{GS} = 10 V, V_{DS} = 50 V, I_{DS} = 30 A	-	26	-	nC
Q_{gs}	Gate-Source Charge		-	6.1	-	
Q_{gd}	Gate-Drain Charge		-	6.3	-	

7. Typical Characteristics

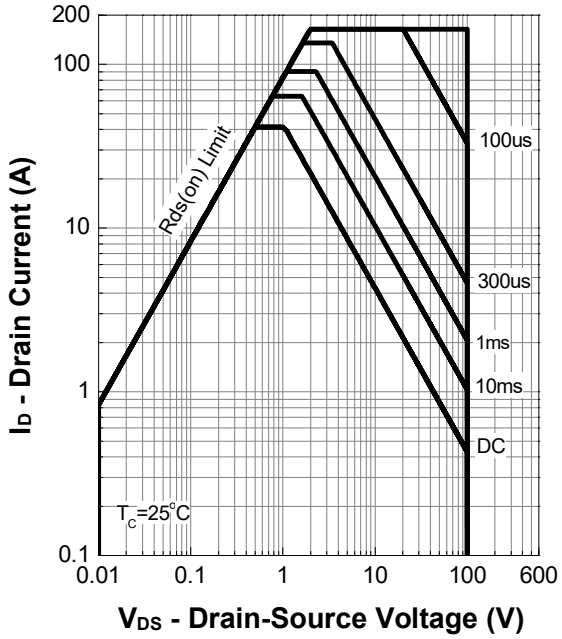
Power Capability



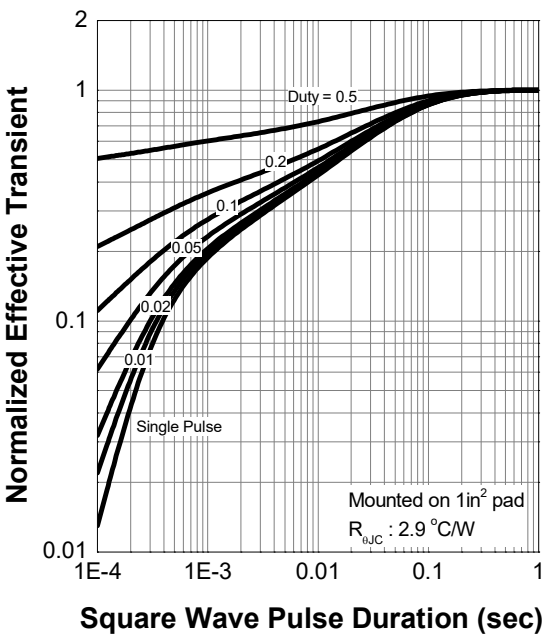
Current Capability



Safe Operation Area

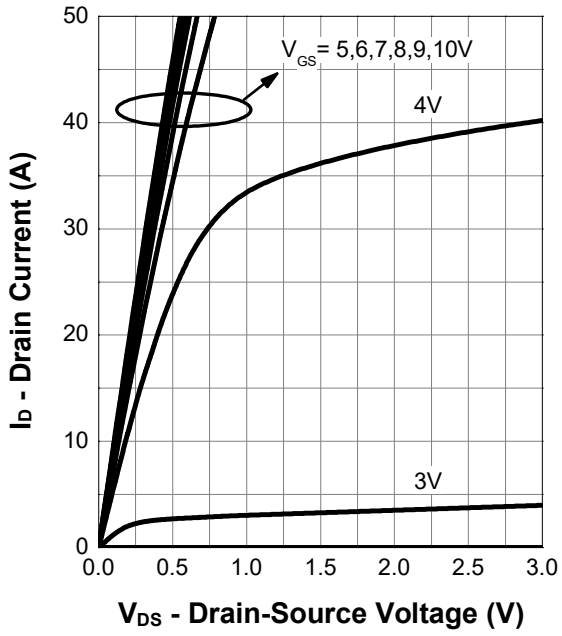


Transient Thermal Impedance

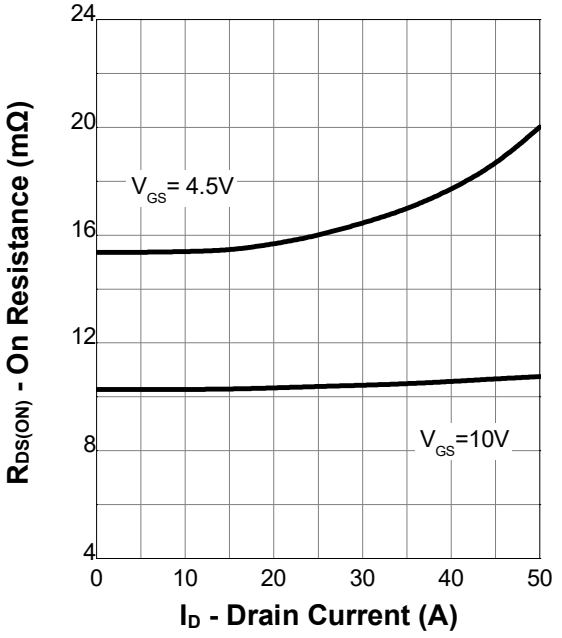


7. Typical Characteristics (cont.)

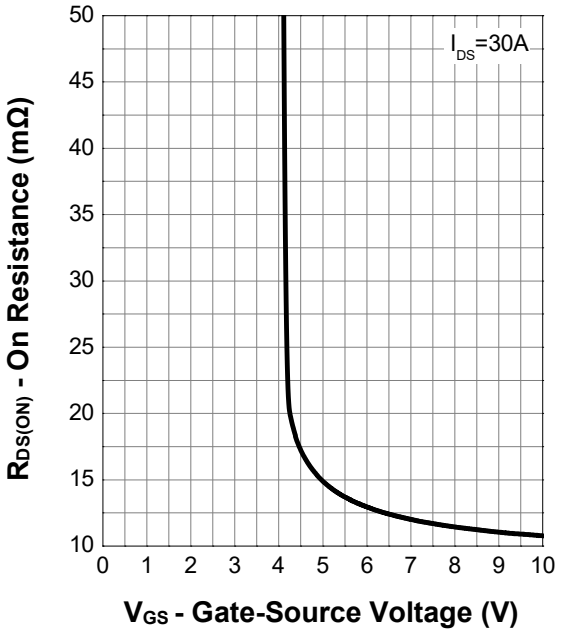
Output Characteristics



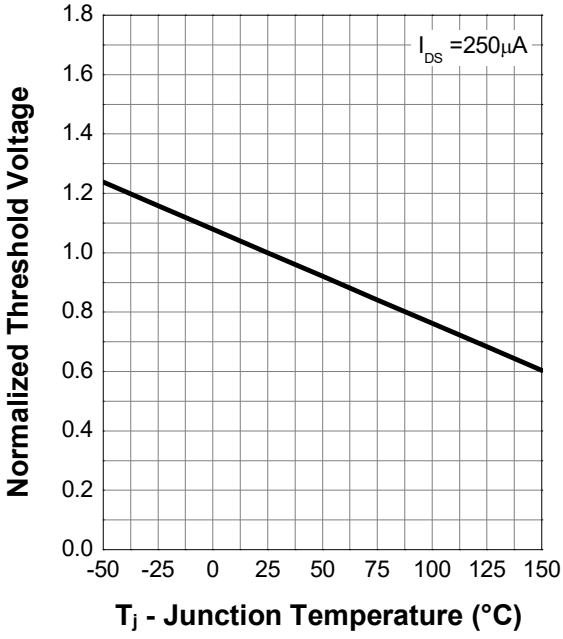
On Resistance



Transfer Characteristics

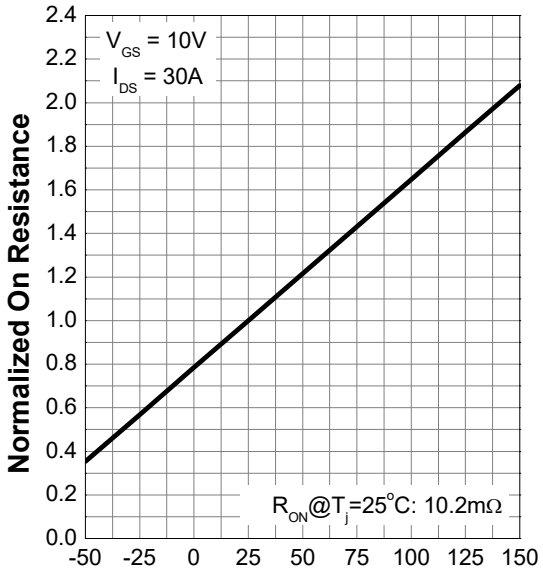


Normalized Threshold Voltage

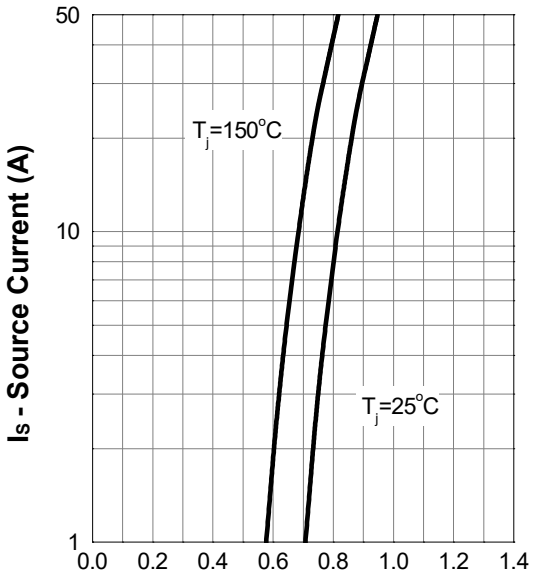


7. Typical Characteristics (cont.)

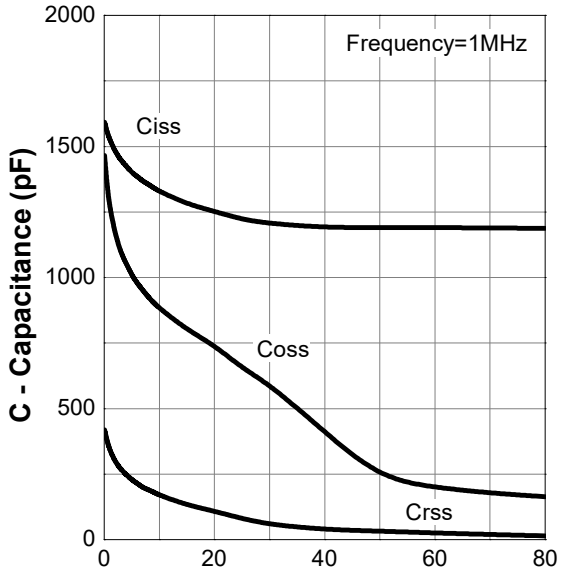
Normalized On Resistance



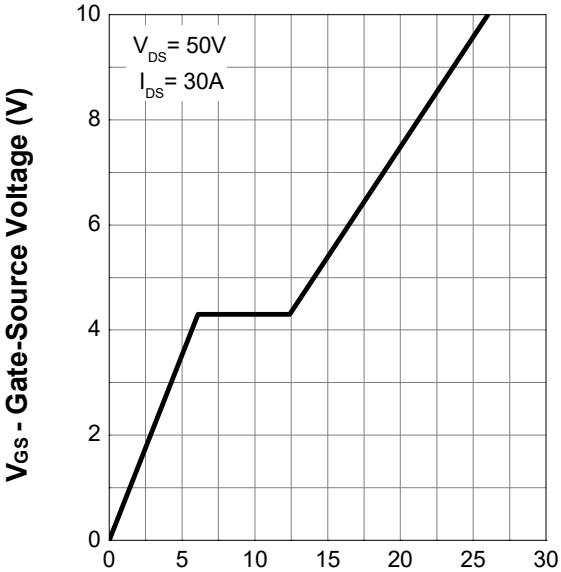
Diode Forward Current



Capacitance



Gate Charge



8. Package Dimensions

PDFN 5x6-8L Package