

N-Channel Enhancement Mode MOSFET

1. Product Information

1.1 Features

- ✓ Advanced trench cell design
- ✓ Low Thermal Resistance
- ✓ MSL1
- ✓ Tj175°C

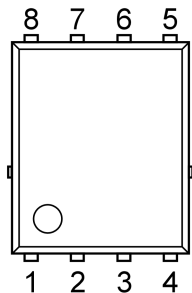
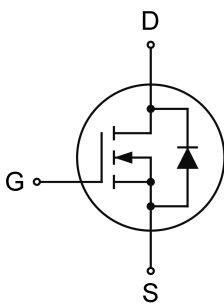
1.2 Applications

- ✓ Motor drivers
- ✓ DC-DC Converter

1.3 Quick reference

- ✓ $BV \geq 85\text{ V}$
- ✓ $R_{DS(ON)} \leq 2.0\text{ m}\Omega @ V_{GS} = 10\text{ V}$
- ✓ $P_D \leq 125\text{ W}$
- ✓ $R_{DS(ON)} \leq 3.5\text{ m}\Omega @ V_{GS} = 6\text{ V}$
- ✓ $I_D \leq 176\text{ A}$

2. Pin Description

Pin	Description	Simplified Outline	Symbol
1,2,3	Source	 Top View PDFN5x6-8L	
4	Gate		
5,6,7,8	Drain		

3. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V _{DS}	Drain-Source Voltage	T _C =25°C	85	-	V
V _{GS}	Gate-Source Voltage	T _C =25°C	-	±20	V
I _D	Drain Current (DC)	T _C =25°C, V _{GS} =10 V	-	176	A
		T _C =100°C, V _{GS} =10 V	-	125	A
I _{DM} *	Drain Current (Pulsed)	T _C =25°C, V _{GS} =10 V	-	704	A
P _D	Drain power dissipation	T _C =25°C	-	125	W
T _J , T _{stg}	Operating Junction and Storage Temperature Range		-55	175	°C
I _S	Diode Forward Current	T _C =25°C	-	176	A
E _{AS}	Single Pulsed Avalanche Energy	V _{DD} =50 V, L=1.0 mH	-	512	mJ
R _{θJA}	Thermal Resistance, Junction to Ambient		-	50	°C/W
R _{θJC}	Thermal Resistance, Junction to Case		-	1.2	

Notes:

- * Pulse width ≤ 300μs, duty cycle ≤ 2%.
- ** Surface mounted on 1 in² pad area, t ≤ 10 sec.
- *** Limited by bonding wire.

4. Marking Information

Product Name	Marking
KJ2R0N08G	KJ2R0N08G XXXXXX-X

5. Ordering Code

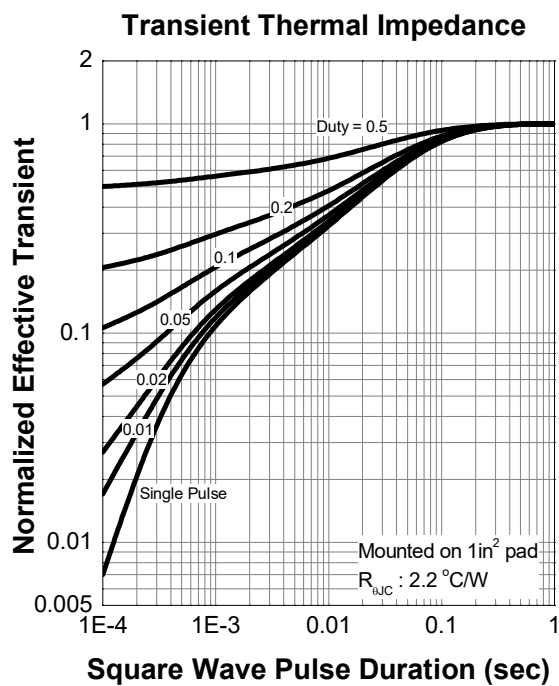
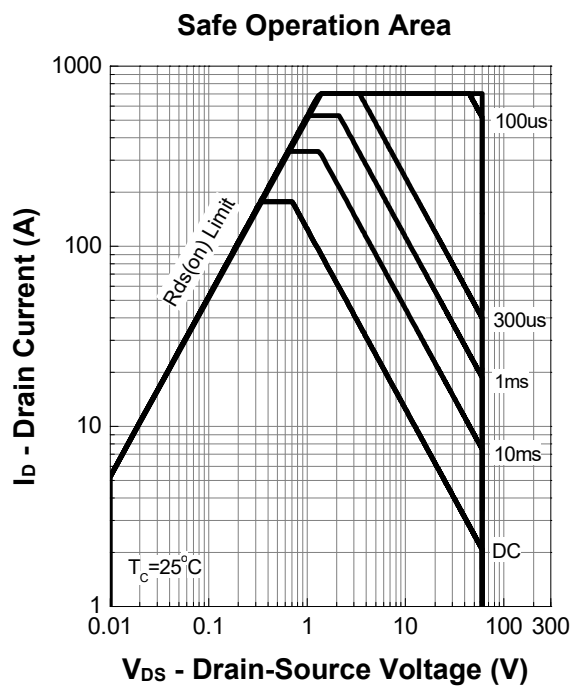
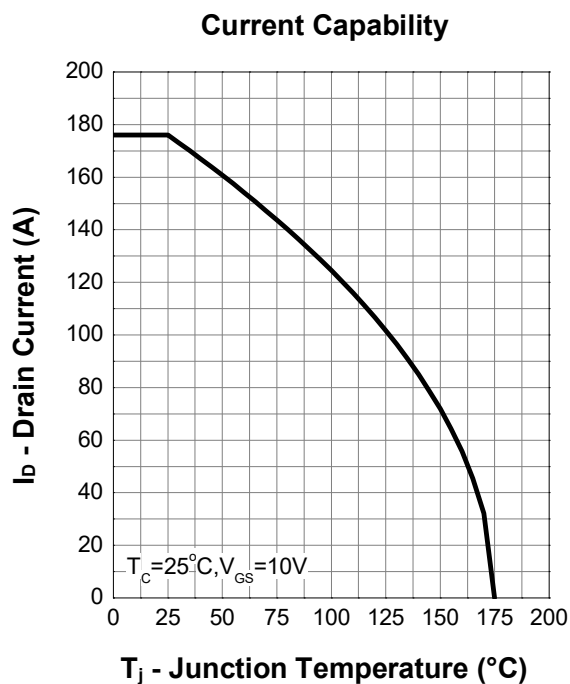
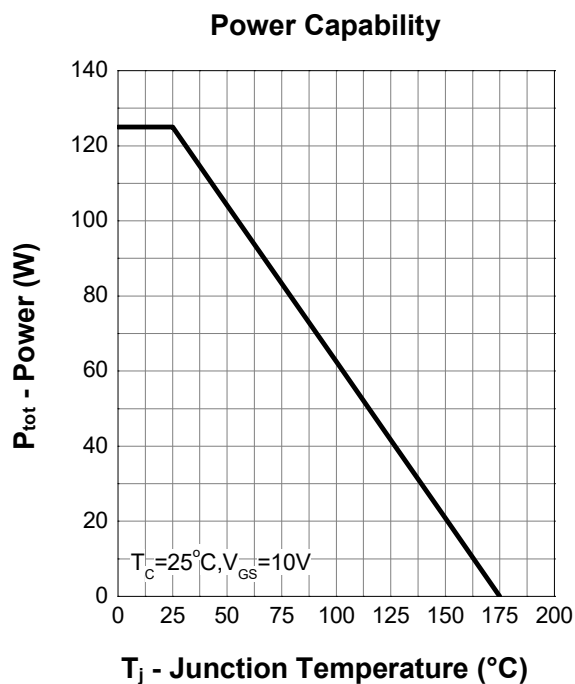
Product Name	Package	Reel size	Tape width	Quantity (pcs)
KJ2R0N08G	PDFN 5×6-8L	13"	12 mm	5000

Note: KUAJIEYIN 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)

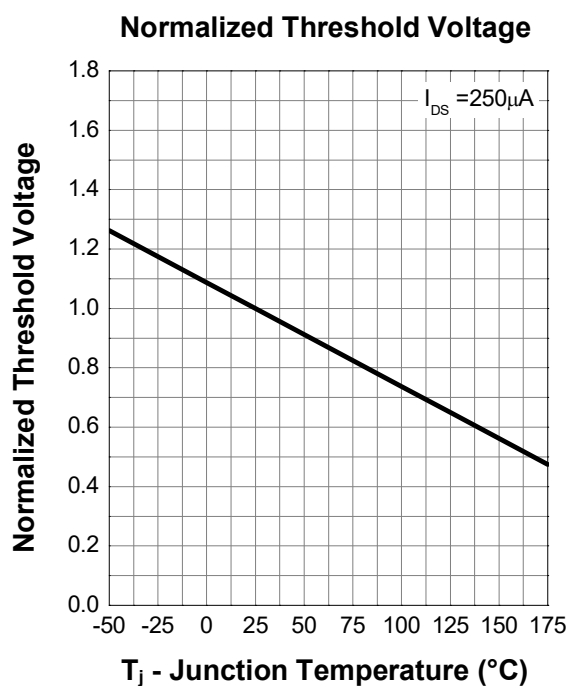
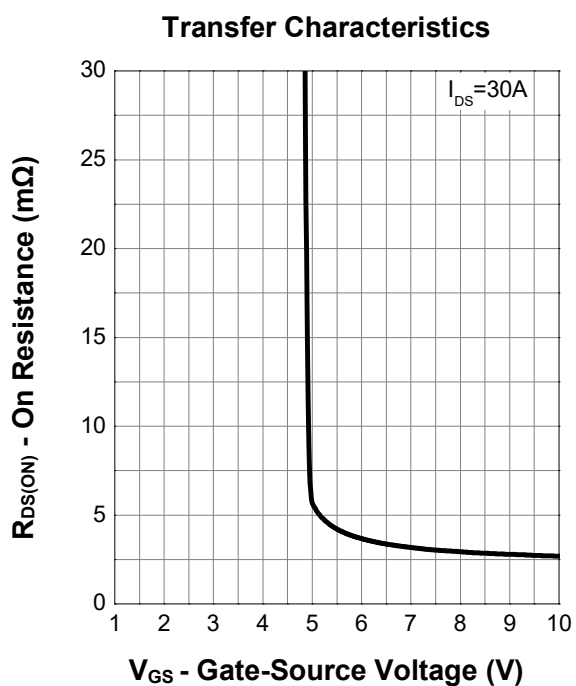
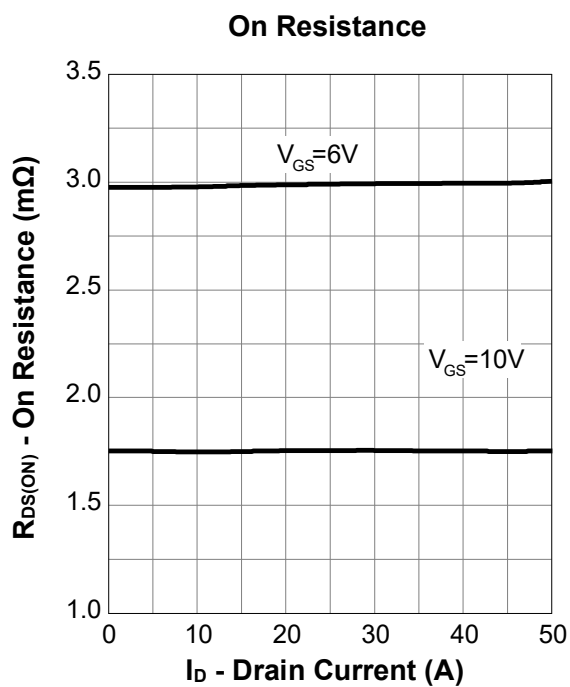
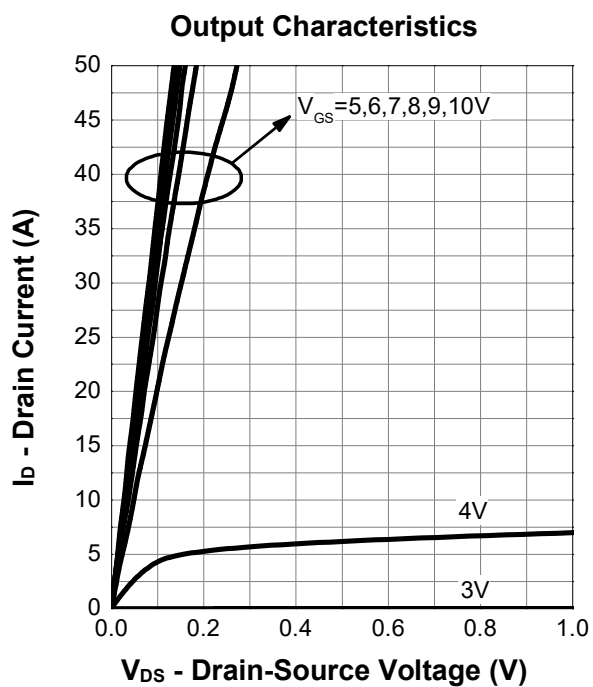
6. Electrical Characteristics (T_A=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0 V, I _{DS} =250 μA	85	98	-	V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250 μA	2	-	4	V
I _{DSS}	Drain Leakage Current	V _{DS} =64 V, V _{GS} =0 V	-	-	1	uA
I _{GSS}	Gate Leakage Current	V _{GS} =±20 V, V _{DS} =0 V	-	-	±100	uA
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =10 V, I _D =30 A	-	1.7	2.0	mΩ
		V _{GS} =6 V, I _D =30 A	-	3.0	3.5	
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	-	62	-	ns
Q _{rr}	Reverse Recovery Charge		-	83	-	nC
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} =0 V, V _{DS} =30 V, Frequency=1 MHz	-	5591	-	pF
C _{oss}	Output Capacitance		-	744	-	
C _{rss}	Reverse Transfer Capacitance		-	75	-	
t _{d(on)}	Turn-on Delay Time	V _{DS} =30 V, V _{GEN} =10 V, R _G =3.9 Ω, R _L =0.6 Ω, I _{DS} =50 A	-	23	-	ns
t _r	Turn-on Rise Time		-	65	-	
t _{d(off)}	Turn-off Delay Time		-	71	-	
t _f	Turn-off Fall Time		-	73	-	
Gate Charge Characteristics						
Q _g	Total Gate Charge	V _{DS} =30 V, V _{GS} =10 V, I _{DS} =50 A	-	101	-	nC
Q _{gs}	Gate-Source Charge		-	28	-	
Q _{gd}	Gate-Drain Charge		-	25	-	

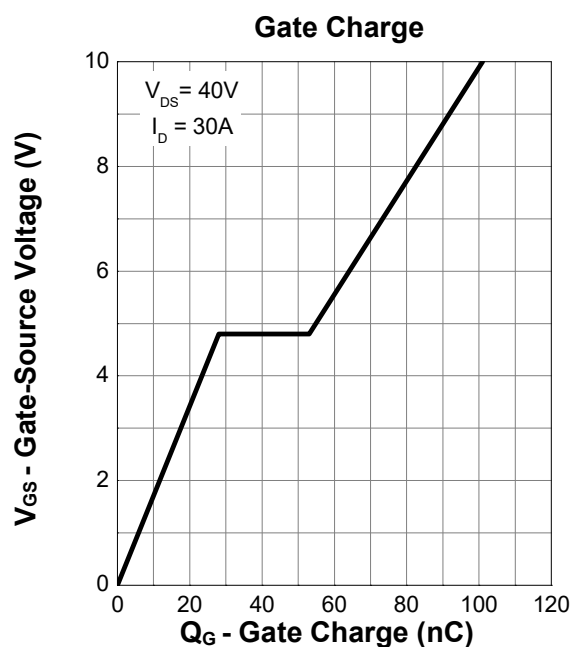
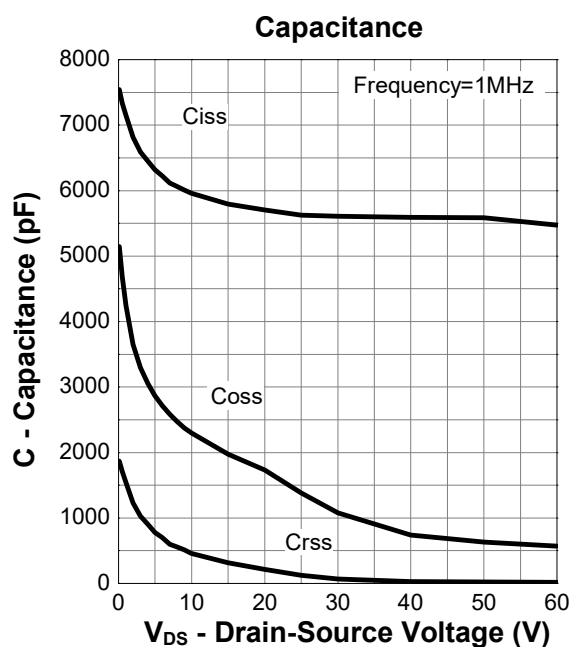
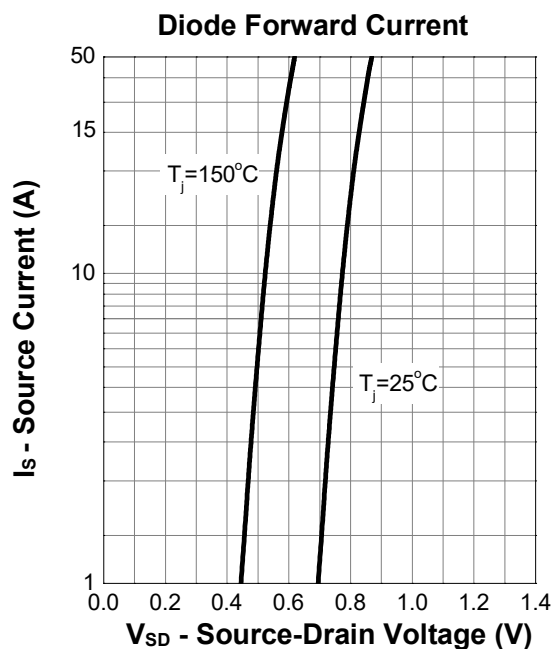
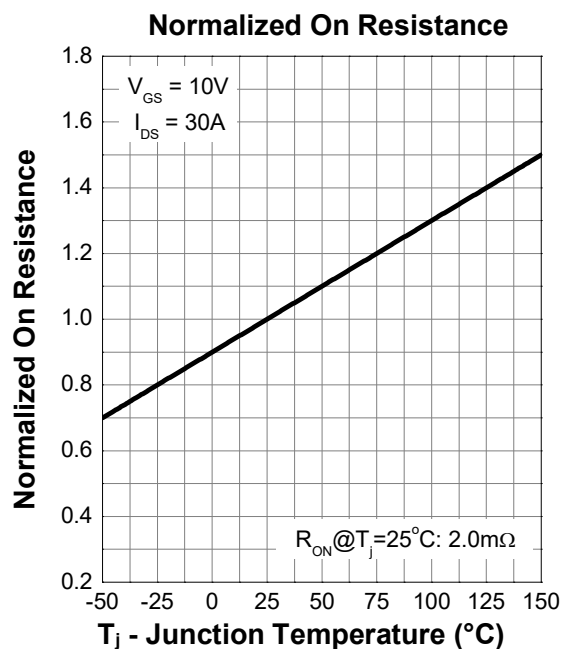
7. Typical Characteristics



7. Typical Characteristics (cont.)

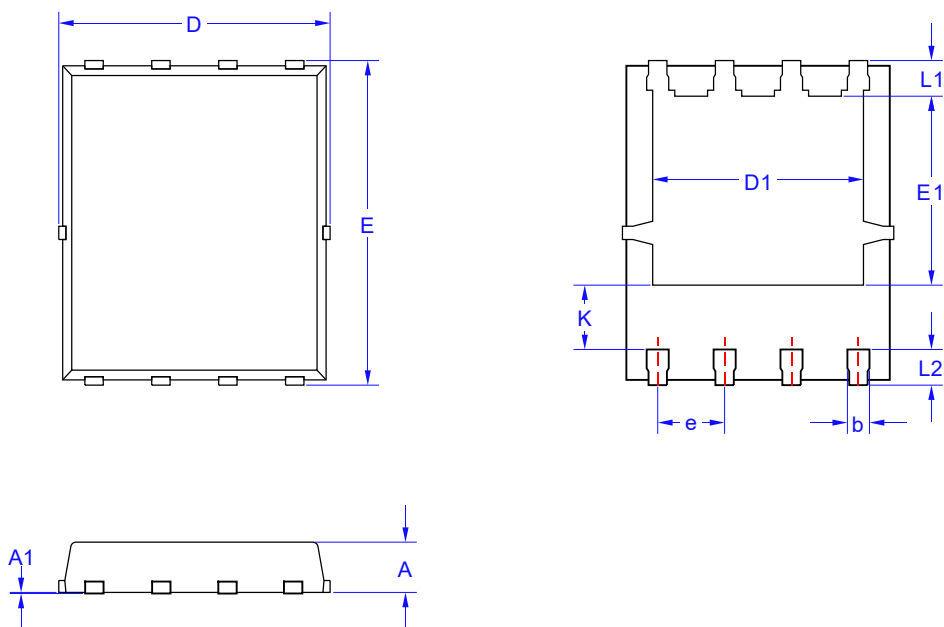


7. Typical Characteristics (cont.)



8. Package Dimensions

PDFN5x6-8L Package



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.85	1.15
A1	0.00	0.05
b	0.30	0.50
D	4.90	5.10
D1	4.00 REF	
E	5.85	6.15
E1	3.60 REF	
e	1.27 BSC	
K	1.30 REF	
L1	0.40	0.60
L2	0.40	0.60