

P-Channel Enhancement Mode MOSFET

1. Product Information

1.1 Features

- Surface-mounted package
- Extremely low threshold voltage
- Advanced trench cell design
- ESD 2KV

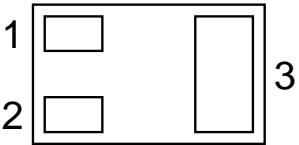
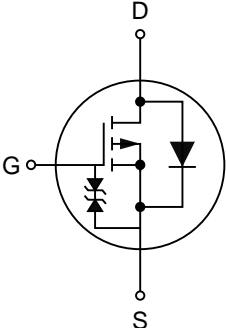
1.2 Applications

- Portable appliances

1.3 Quick reference

- $BV \geq -100V$
- $R_{DS(ON)} \leq 10\Omega @ V_{GS} = -10V$
- $P_{tot} \leq 0.43W$
- $I_D \leq -0.1A$

2. Pin Description

Pin	Description	Simplified Outline	Symbol
1	Gate(G)	 <p>Bottom View DFN 1006-3L</p>	
2	Source(S)		
3	Drain(D)		

3. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V _{DS}	Drain-Source Voltage	T _A =25°C	-100	-	V
V _{GS}	Gate-Source Voltage	T _A =25°C	-	±20	V
I _D *	Drain Current	T _A =25°C, V _{GS} =10V	-	-0.1	A
I _{DM} **	Pulsed Drain Current	T _A =25°C, V _{GS} =10V	-	-0.4	A
P _{tot} *	Total Power Dissipation	T _A =25°C	-	0.43	W
T _{stg}	Storage Temperature		-55	150	°C
T _J	Junction Temperature		-	150	°C
I _S *	Diode Forward Current	T _A =25°C	-	-0.1	A
R _{θJA} *	Thermal Resistance-Junction to Ambient		-	290	°C/W

Notes:

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

4. Marking Information

Product Name	Marking
KJ12KP10N	12 KY

5. Ordering Code

Product Name	Package	Reel Size	Tape width	Quantity	Note
KJ12KP10N	DFN1006-3L			10000	

Note: KUIJIEXIN 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)

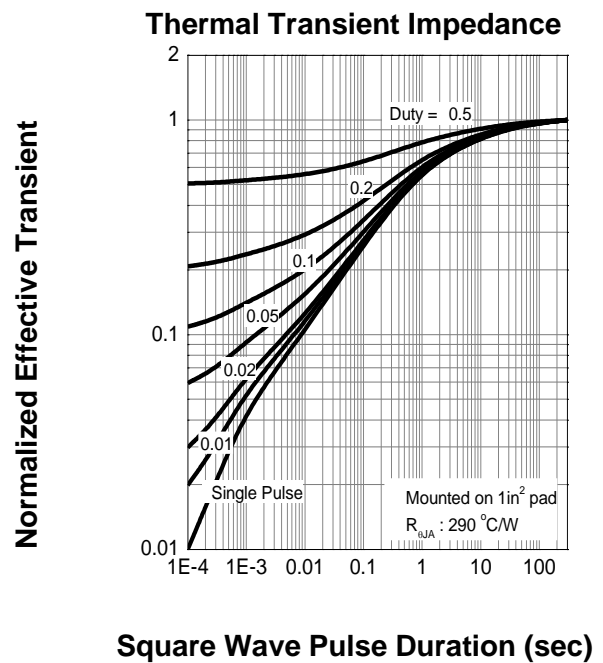
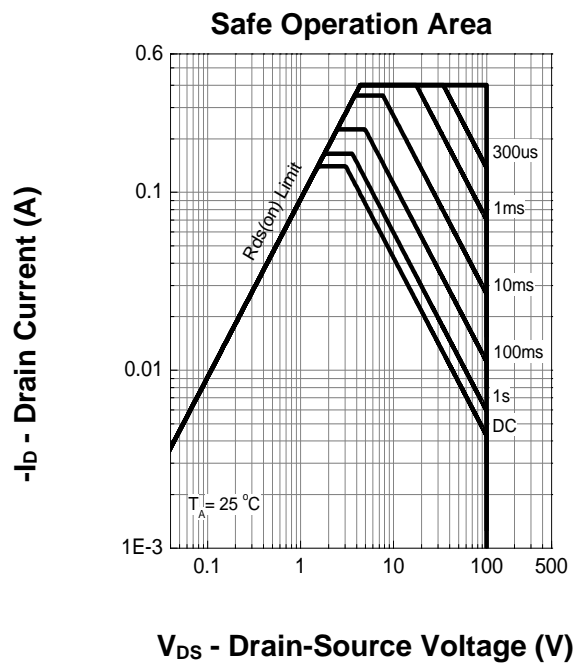
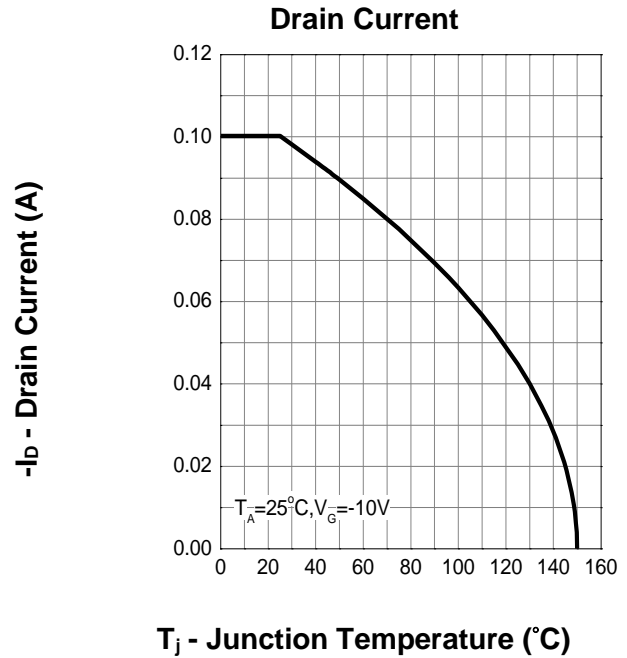
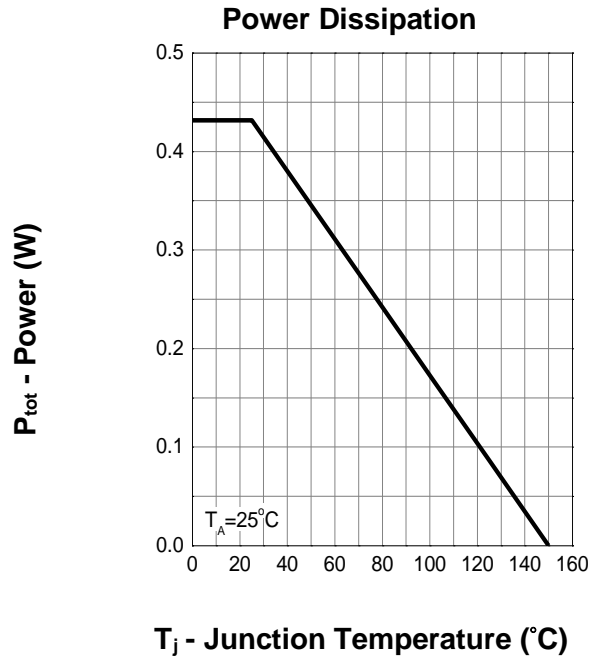
6. Electrical Characteristics (T_A=25°C Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =-250μA	-100	-	-	V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250μA	-1	-	-3	V
I _{DSS}	Drain Leakage Current	V _{DS} =-80V, V _{GS} =0V	-	-	-1	μA
		T _J = 85 °C	-	-	-30	μA
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±10	μA
R _{DS(ON)} ^a	On-State Resistance	V _{GS} =-10V, I _{DS} =-0.1A	-	8.3	10	Ω
		V _{GS} =-4.5V, I _{DS} =-0.1A	-	8.5	10	
Diode Characteristics						
V _{SD} ^a	Diode Forward Voltage	I _{SD} =-0.1A, V _{GS} =0V	-	-	-1.2	V
Dynamic Characteristics^b						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-30V Frequency=1MHz	-	56	-	pF
C _{oss}	Output Capacitance		-	4.7	-	
C _{rss}	Reverse Transfer Capacitance		-	1.9	-	
t _{d(on)}	Turn-on Delay Time	V _{DS} =-50V, V _{GEN} =-10V, R _G =4.5Ω, R _L =500Ω, I _{DS} =-0.1A	-	7.2	-	ns
t _r	Turn-on Rise Time		-	20	-	
t _{d(off)}	Turn-off Delay Time		-	35	-	
t _f	Turn-off Fall Time		-	28	-	
Gate Charge Characteristics^b						
Q _g	Total Gate Charge	V _{GS} =-10V, V _{DS} =-50V, I _{DS} =-0.1A	-	1.6	-	pC
Q _{gs}	Gate-Source Charge		-	0.6	-	
Q _{gd}	Gate-Drain Charge		-	0.1	-	

Notes:

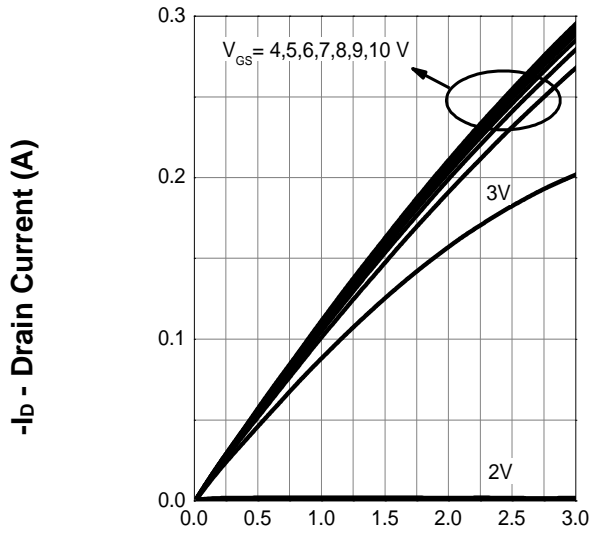
- Pulse test; pulse width ≤ 300μs, duty cycle ≤ 2%
- Guaranteed by design, not subject to production testing

7. Typical Characteristics



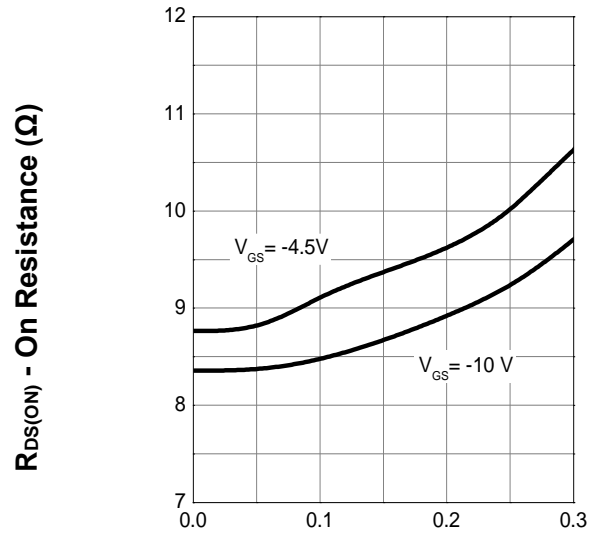
7. Typical Characteristics (cont.)

Output Characteristics



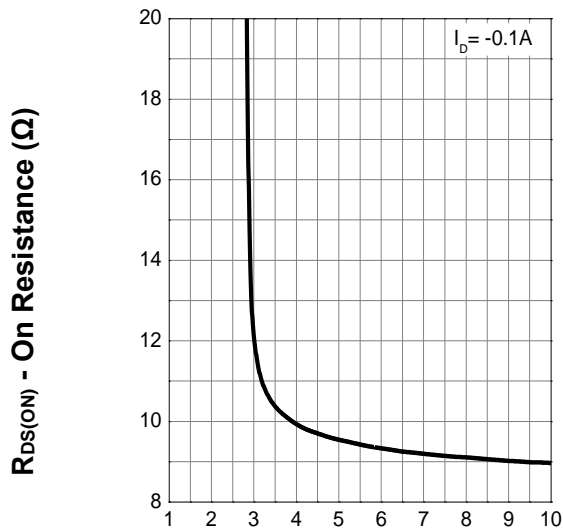
$-V_{DS}$ - Drain-Source Voltage (V)

Drain-Source On Resistance



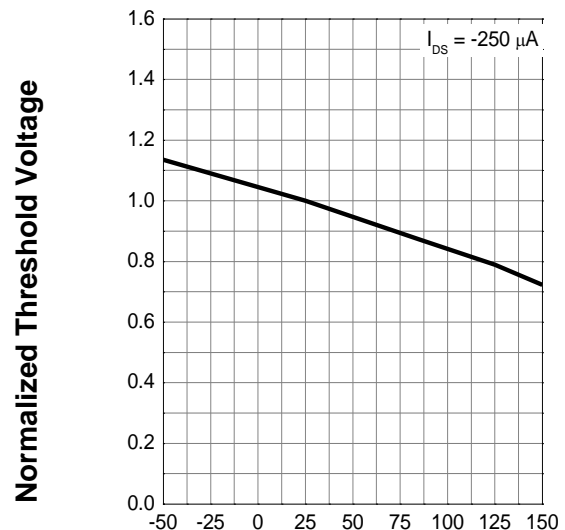
$-I_D$ - Drain Current (A)

Transfer Characteristics



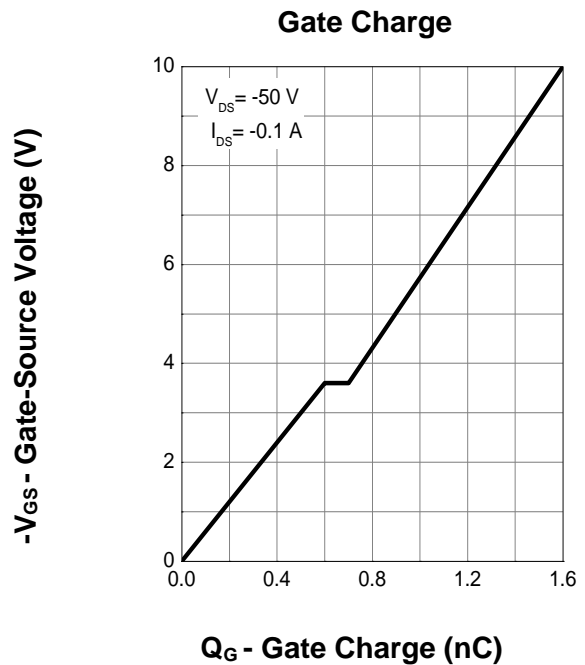
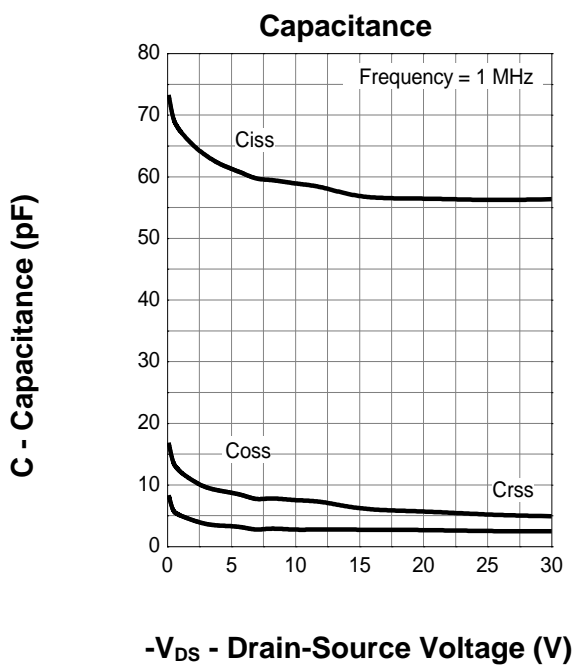
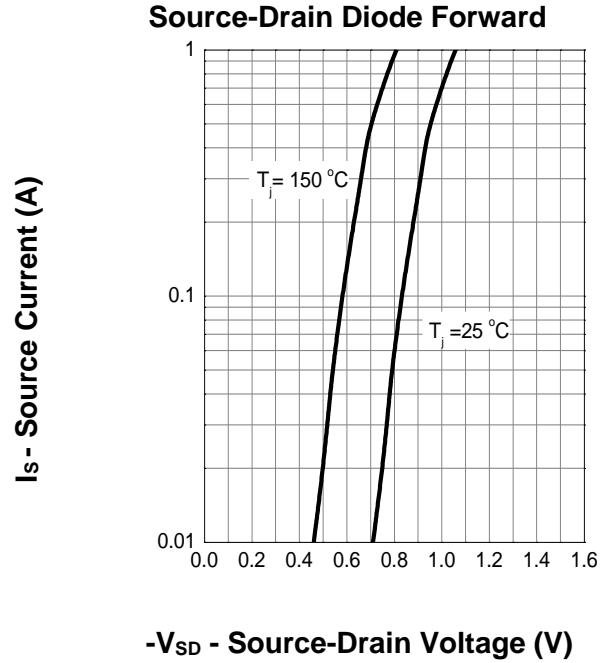
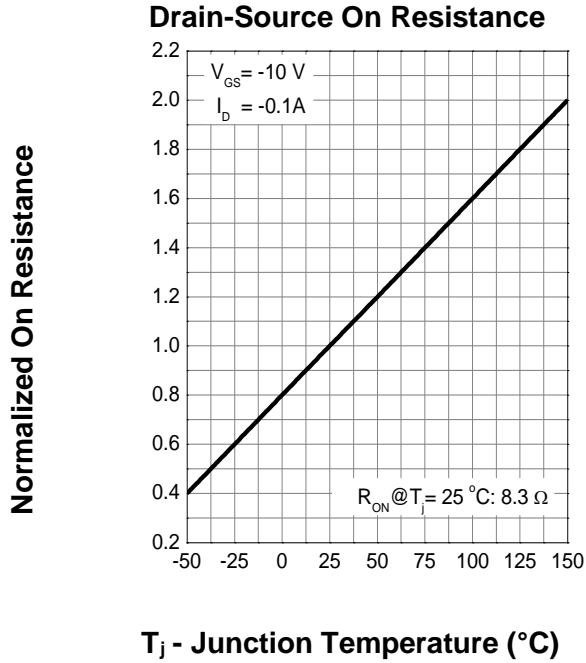
$-V_{GS}$ - Gate-Source Voltage (V)

Gate Threshold Voltage



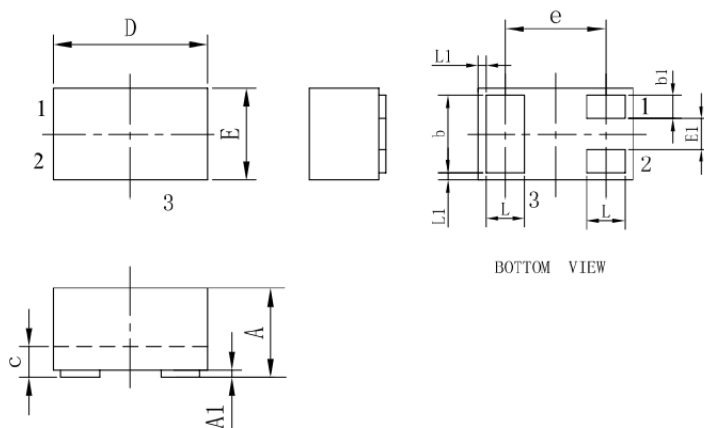
T_J - Junction Temperature ($^{\circ}C$)

7. Typical Characteristics (cont.)



8. Package Dimensions

DFN1006-3L



Symbol	Dimensions In Millimeters		
	MIN.	NOM.	MAX.
A	0.45	0.50	0.55
A1	0	0.02	0.05
b	0.45	0.50	0.55
b1	0.10	0.15	0.20
c	0.12	0.15	0.18
D	0.95	1.00	1.05
e	0.65BSC		
E	0.55	0.60	0.65
E1	0.15	0.20	0.25
L	0.20	0.25	0.30
L1	0.05REF		