KJ3P10A

P-Channel Enhancement Mode MOSFET

1. Product Information

1.1 Features

- ☑ Surface-mounted package
- ☑ Advanced trench cell design
- ☑ Excellent $R_{DS(ON)}$

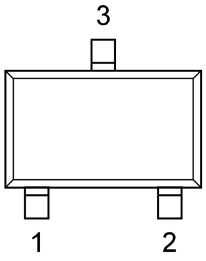
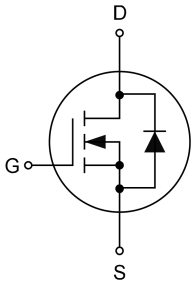
1.2 Applications

- ☑ Uninterruptible power supply
- ☑ Inverter system

1.3 Quick reference

- ☑ BV ≦ -100 V
- ☑ $R_{DS(ON)}$ ≦ 330 mΩ @ V_{GS} = -10 V
- ☑ P_{tot} ≦ 1.4 W
- ☑ $R_{DS(ON)}$ ≦ 360 mΩ @ V_{GS} = -4.5 V
- ☑ I_D ≦ -3 A

2. Pin Description

Pin	Description	Simplified Outline	Symbol
1	Gate		
2	Source		
3	Drain		

Top View
SOT23-3L

3. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DS}	Drain-Source Voltage	-	-	-100	V
V_{GS}	Gate-Source Voltage	T_C=25℃	-	±20	V
I_D *	Drain Current	T_C=25℃, V_{GS}=10 V	-	-3	A
		T_C=70℃, V_{GS}=10 V	-	-2.4	A
I_{DM} *,**	Pulsed Source Current	T_C=25℃, V_{GS}=10 V	-	-12	A
P_D	Power Dissipation	T_C=25℃	-	1.4	W
T_J, T_{stg}	Operating Junction and Storage Temperature Range		-55	150	℃
$R_{\theta JA}$ *	Thermal Resistance-Junction to Ambient		70	90	℃/W
$R_{\theta JC}$ *	Thermal Resistance-Junction to Case		63	80	℃/W

Notes:

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

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

*** Limited by bonding wire.

4. Marking Information

Product Name	Marking
KJ3P10A	3P10 YWWXXX

5. Ordering Code

Product Name	Package	Reel size	Tape width	Quantity (pcs)
KJ3P10A	SOT23-3L	7"	8 mm	3000

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	-1.5	-2.5	V
I_{DSS}	Zero Gate Voltage Source Current	V_{DS}=-100 V, V_{GS}=0 V	-	-	-1	μA
I_{GSS}	Gate Leakage Current	V_{GS}=±20 V, V_{DS}=0 V	-	-	±100	nA
$R_{DS(ON)}$ [a]	Drain-Source On-State Resistance	V_{GS}=-10 V, I_{DS}=-3 A	-	280	330	mΩ
		V_{GS}=-4.5 V, I_{DS}=-2 A	-	300	360	mΩ
Diode Characteristics [b]						
V_{SD} [a]	Diode Forward Voltage	I_{SD}=-1.5 A, V_{GS}=0 V	-	-	-1.2	V
Dynamic Characteristics [b]						
C_{iss}	Input Capacitance	V_{GS}=0 V, V_{DS}=-50 V, Frequency=1 MHz	-	916	-	pF
C_{oss}	Output Capacitance		-	56	-	
C_{rss}	Reverse Transfer Capacitance		-	32	-	
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=-50 V, V_{GEN}=-10 V, R_G=3.3 Ω, I_{DS}=-3 A	-	10.1	-	ns
t_r	Turn-on Rise Time		-	8.2	-	
$t_{d(off)}$	Turn-off Delay Time		-	30.8	-	
t_f	Turn-off Fall Time		-	9.1	-	
Gate Charge Characteristics [b]						
Q_g	Total Gate Charge	V_{DS}=-50 V, V_{GS}=-10 V, I_{DS}=-3 A	-	20	-	nC
Q_{gs}	Gate-Source Charge		-	4.8	-	
Q_{gd}	Gate-Drain Charge		-	6.5	-	

Notes:

a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.

b. Guaranteed by design, not subject to production testing.

7. Typical Characteristics

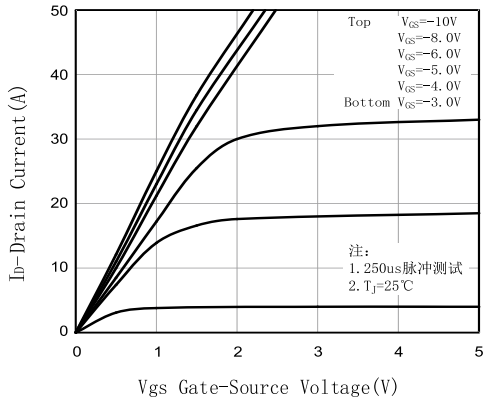


Fig.1 Output Characteristic

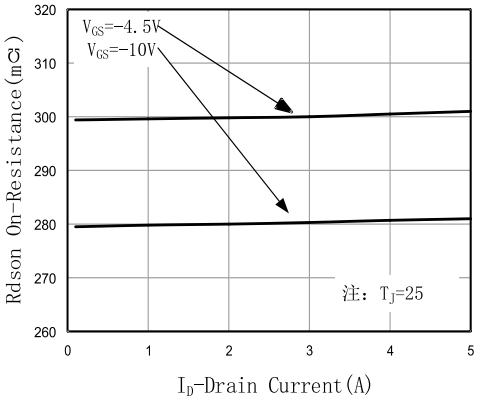


Fig.2 On-Resistance vs. Drain Current

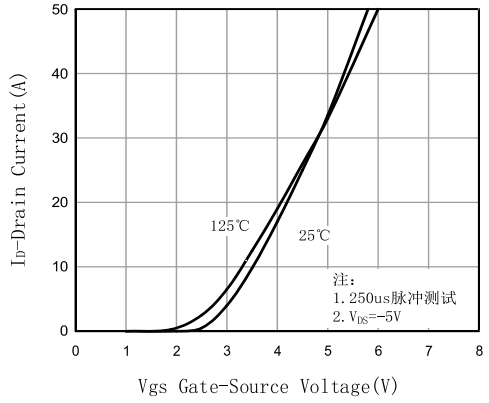


Fig.3 Transfer Characteristic

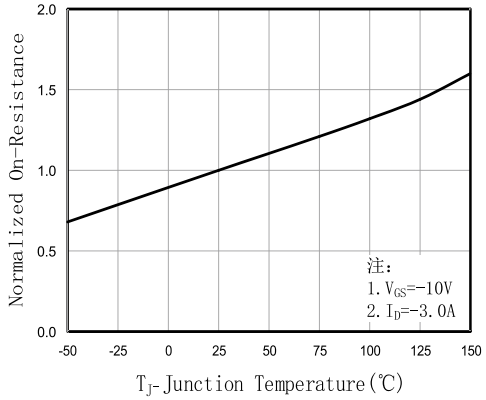


Fig.4 On-Resistance vs. Junction Temperature

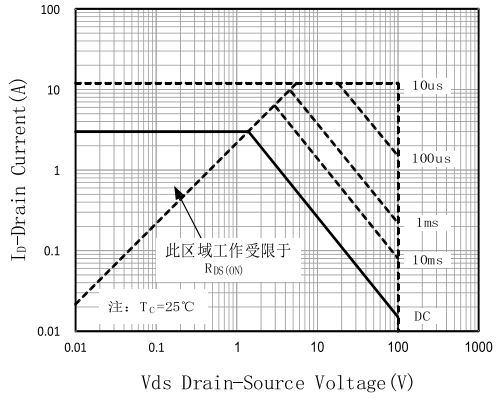


Fig.5 Safe Operation Area

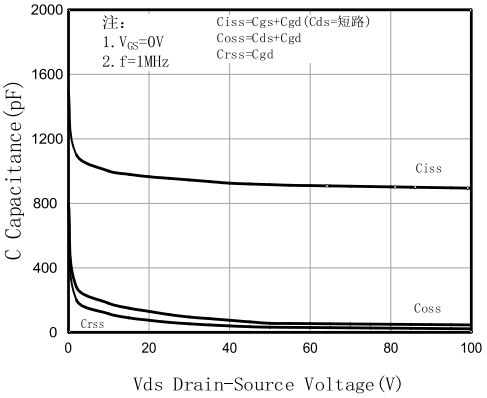


Fig.6 Capacitance Characteristic

7. Typical Characteristics (cont.)

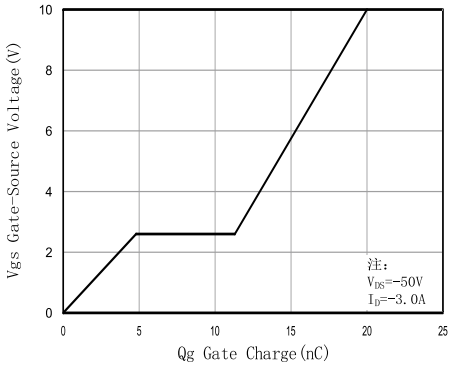


Fig.7 Gate-Charge Characteristic

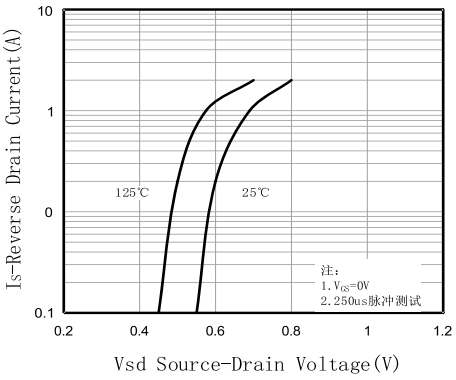
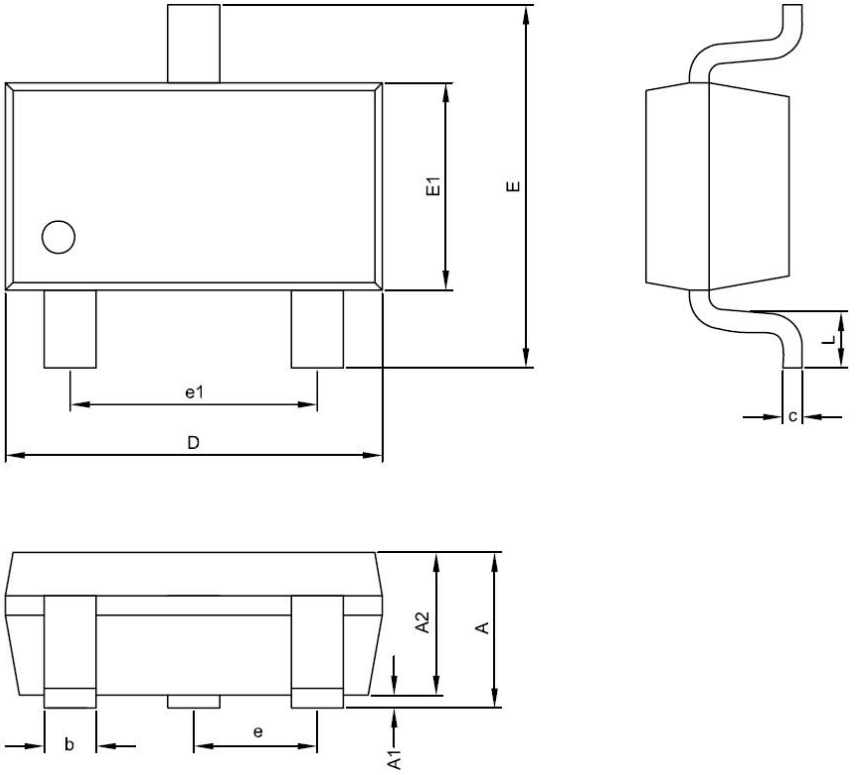


Fig.8 Body Diode Characteristic

8. Package Dimensions

SOT23-3L Package



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	1.00	1.45
A1	0.00	0.15
A2	1.00	1.30
D	2.70	3.10
E	2.60	3.00
E1	1.50	1.70
c	0.08	0.25
b	0.30	0.50
e	0.95 BSC	
e1	1.90 BSC	
L	0.30	0.60