KJ36P10K

P-Channel Enhancement Mode MOSFET

1. Product Information

1.1 Features

- ☑ Surface-mounted package
- ☑ Advanced trench cell design

1.2 Applications

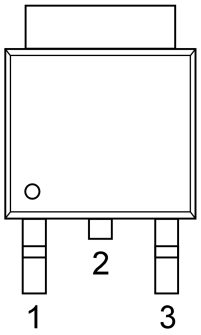
- ☑ Hard switched and high frequency circuits
- ☑ Power switching application

1.3 Quick reference

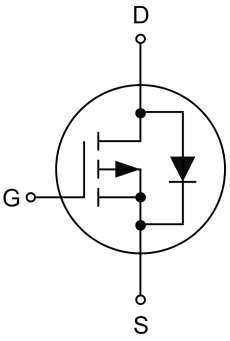
- ☑ BV ≧-100 V
- ☑ $R_{DS(ON)}$ ≦ 40 mΩ @V_{GS} = -10 V
- ☑ P_{tot} ≦83 W
- ☑ $R_{DS(ON)}$ ≦ 50 mΩ @V_{GS} = -4.5 V
- ☑ I_D ≦-36 A

2. Pin Description

Pin	Description	Simplified Outline	Symbol
1	Gate(G)		
2	Drain(D)		
3	Source(S)		



Top View
TO-252



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	-	-36	A
		T_C=100℃, V_{GS}=-10 V		-23	A
I_{DM} *, **	Drain Current (Pulsed)	T_C=25℃, V_{GS}=-10 V	-	-144	A
P_{tot}	Drain power dissipation	T_C=25℃	-	83	W
I_S	Continuous-Source Current	T_C=25℃	-	-36	A
E_{AS} *	Single Pulsed Avalanche Energy	V_{DD}=-50 V, L=0.3 mH	-	168	mJ
T_J, T_{stg}	Operating Junction and Storage Temperature Range		-55	150	℃
$R_{\theta JA}$ *	Thermal Resistance, Junction to Ambient		-	38	℃/W
$R_{\theta JC}$ *	Thermal Resistance, Junction to Case		-	1.5	

Notes:

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

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

4. Marking Information

Product Name	Marking
KJ36P10K	KJ36P10K XXXXXX

5. Ordering Code

Product Name	Package	Reel size	Tape width	Quantity (pcs)
KJ36P10K	TO-252	13"	16 mm	2500

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_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_{DS}=-250 μA	-100	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_{DS}=-250 μA	-1.0	-1.8	-2.5	V
I_{DSS}	Drain Leakage Current	V_{DS}=-50 V, V_{GS}=0 V	-	-	-1	μA
I_{GSS}	Gate Leakage Current	V_{GS}=0 V, V_{GS}=±20 V	-	-	±100	nA
$R_{DS(ON)}$ [a]	On-State Resistance	V_{GS}=-10 V, I_{DS}=-15 A	-	30	40	mΩ
		V_{GS}=-4.5 V, I_{DS}=-10 A	-	38	50	
R_g	Gate Resistance	V_{GS}=0 V, V_{DS}=0 V, f=1 MHz	-	5.5	-	Ω
Diode Characteristics						
V_{SD} [a]	Diode Forward Voltage	I_{SD}=-15 A, V_{GS}=0 V	-	-	-1.3	V
t_{rr}	Reverse Recovery Time	I_{SD}=-15 A, dI_{SD}/dt=100 A/μs	-	50	-	ns
Q_{rr}	Reverse Recovery Charge		-	105	-	nC
Dynamic Characteristics [b]						
C_{iss}	Input Capacitance	V_{GS}=0 V, V_{DS}=-50 V, Frequency=1 MHz	-	1420	-	pF
C_{oss}	Output Capacitance		-	320	-	
C_{rss}	Reverse Transfer Capacitance		-	15	-	
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=-50 V, V_{GEN}=-10 V, R_G=3 Ω, I_{DS}=-15 A	-	6	-	ns
t_r	Turn-on Rise Time		-	15	-	
$t_{d(off)}$	Turn-off Delay Time		-	30	-	
t_f	Turn-off Fall Time		-	26	-	
Gate Charge Characteristics [b]						
Q_g	Total Gate Charge	V_{DS}=-50 V, V_{GS}=-10 V, I_{DS}=-15 A	-	26	-	nC
Q_{gs}	Gate-Source Charge		-	6	-	
Q_{gd}	Gate-Drain Charge		-	5	-	

Notes:

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

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

7. Typical Characteristics

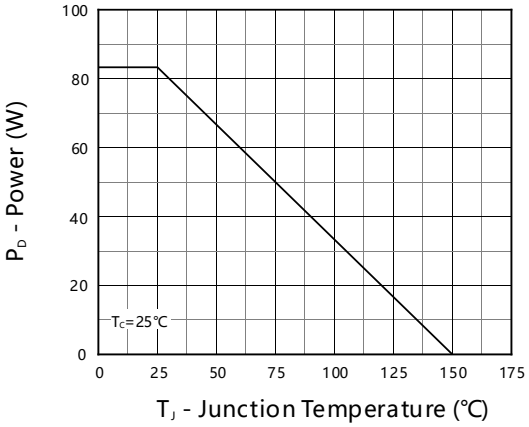


Fig 1. Power Dissipation

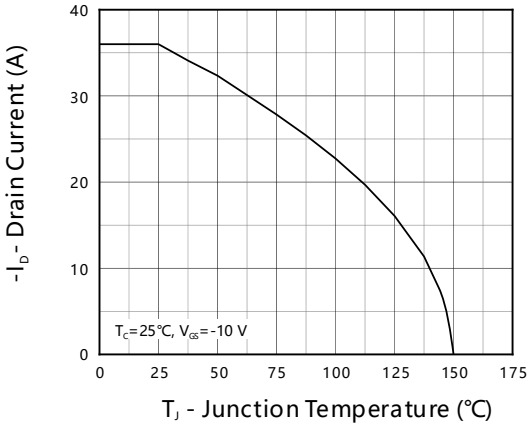


Fig 2. Current Capability

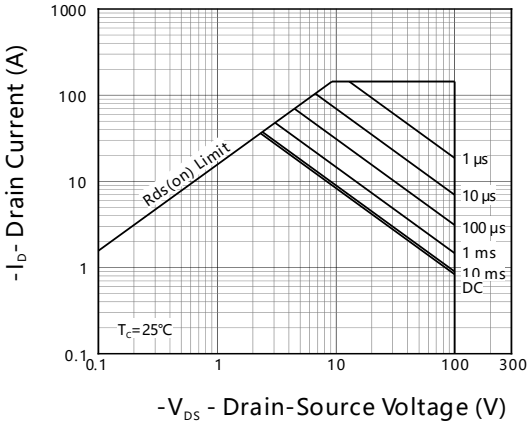


Fig 3. Safe Operation Area

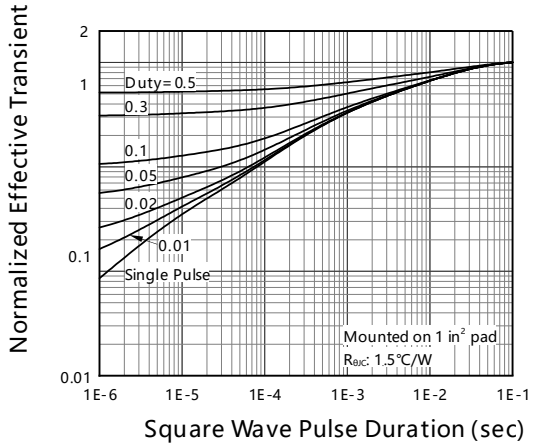


Fig 4. Transient Thermal Impedance

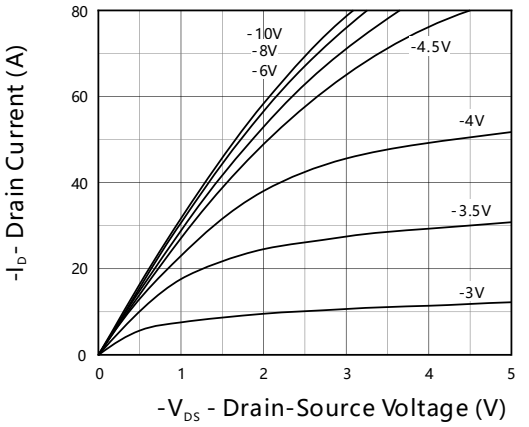


Fig 5. Output Characteristics

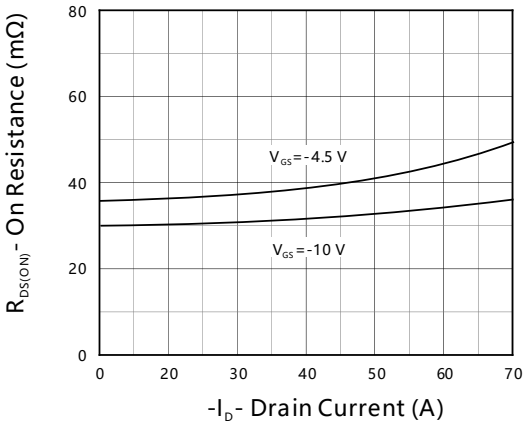


Fig 6. On Resistance

7. Typical Characteristics (cont.)

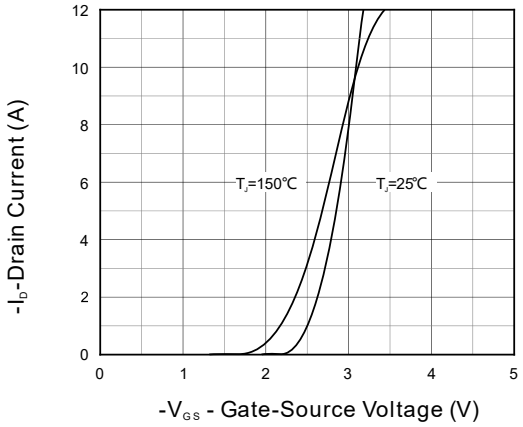


Fig 7. Transfer Characteristics

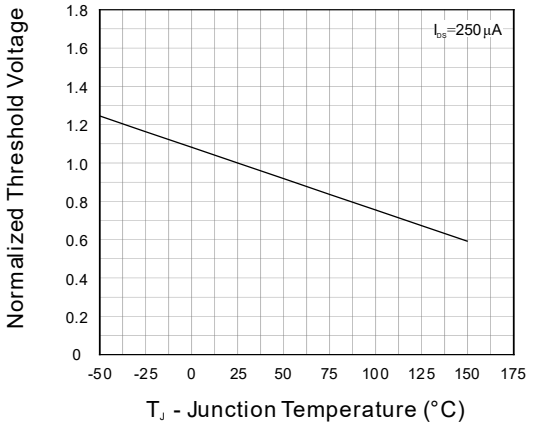


Fig 8. Normalized Threshold Voltage

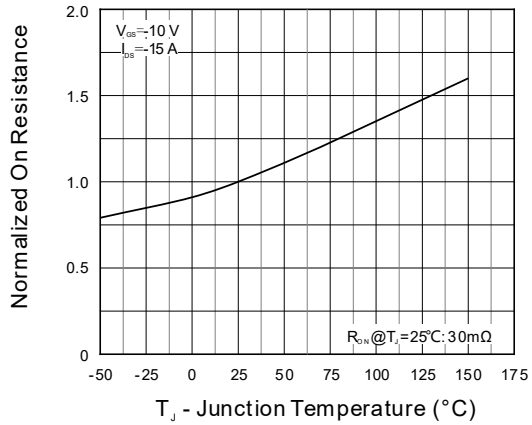


Fig 9. Normalized On Resistance

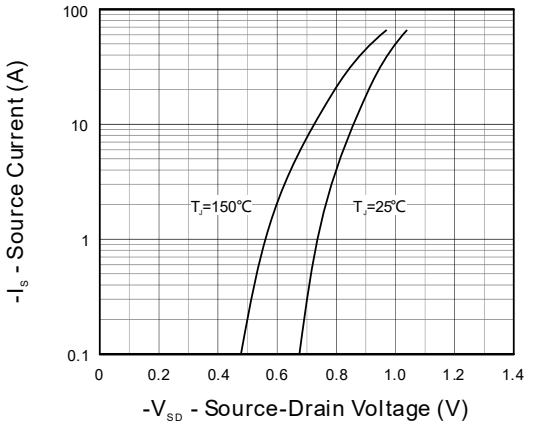


Fig 10. Diode Forward Current

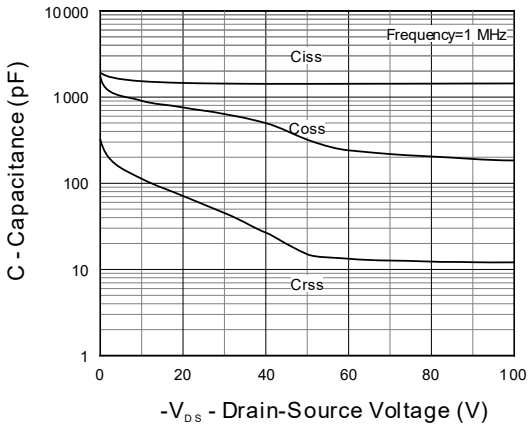


Fig 11. Capacitance

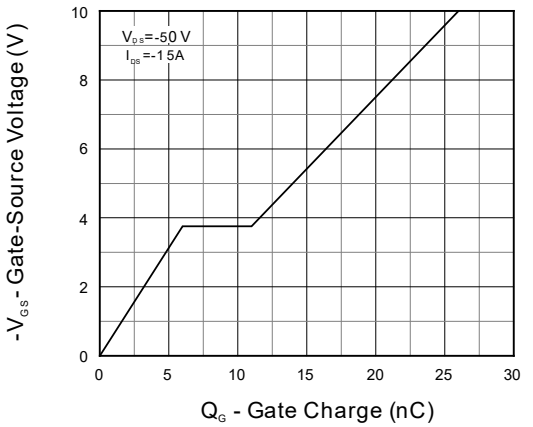
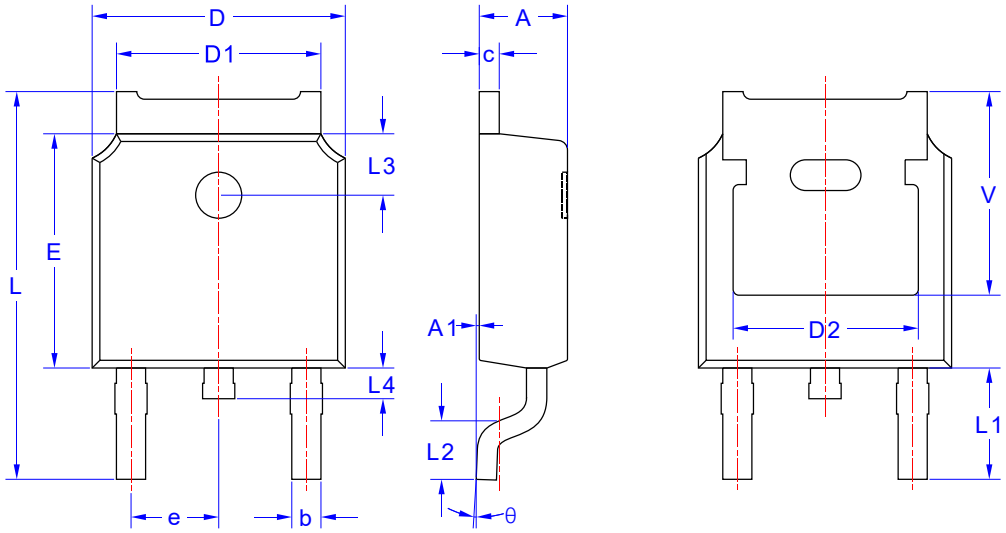


Fig 12. Gate Charge

8.Package Dimensions

TO-252 Package



Symbol	Dimensions in Millimeters	
	MIN	MAX
A	2.200	2.400
A1	0	0.127
b	0.660	0.860
c	0.460	0.580
D	6.500	6.700
D1	5.100	5.460
D2	4.830 REF.	
E	6.000	6.200
e	2.186	2.386
L	9.800	10.400
L1	2.900 REF.	
L2	1.400	1.700
L3	1.800 REF.	
L4	0.600	1.000
θ	0°	8°
V	5.600 REF.	