快捷芯
KUAIJIEXIN

KJ4P06A

P-Channel Enhancement Mode MOSFET

1. Product Information

Features

Advanced trench technology

Excellent $R_{DS(ON)}$

Low gate charge

Applications

PWM applications

Load switch

Quick reference

V_{DS} = -60V

I_D = -4A

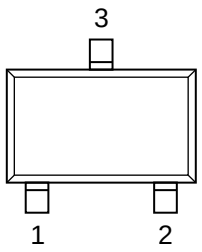
$R_{DS(ON)}$ ≦110mΩ @ V_{GS} = -4.5V (Type: 90mΩ)

$R_{DS(ON)}$ ≦ 90mΩ @ V_{GS} = -10 V (Type: 75mΩ)

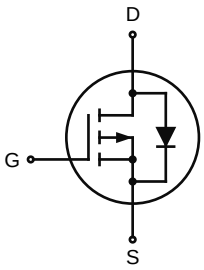
Pin Description

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

Simplified Outline	Symbol



Top View
SOT23-3L



Package Marking and Ordering Information

Product Name	Package	Marking	Reel Size	Tape width	Quantity
KJ4P06A	**SOT23-3L**	**JX4P06**	**-**	**-**	**3000**

2. Absolute Maximum Ratings (T_A=25℃ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source voltage		V_{DS}	-60	V
Gate-source voltage		V_{GS}	±20	V
Continuous drain current	T_A = 25℃	I_D	-4	A
	T_A = 70℃		-3.5	
Pulsed drain current [c]		I_{DM}	-16	
Power dissipation [b]	T_A = 25℃	P_D	1.4	W
	T_A = 70℃		0.9	
Operating junction and storage temperature range		T_J, T_{stg}	-55—150	℃

3. Thermal Characteristics

Parameter		Symbol	Typ	Max	Unit
Maximum Junction-to-Ambient [a]	t ≤ 10s	$R_{\theta JA}$	70	90	℃/W
Maximum Junction-to-Ambient [a d]	Steady-State		100	125	
Maximum Junction-to-Lead	Steady-State	$R_{\theta JL}$	62	80	

Notes:

a. The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25℃. The value in any given application depends on the user's specific board design.

b. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using ≤ 10s junction-to-ambient thermal resistance.

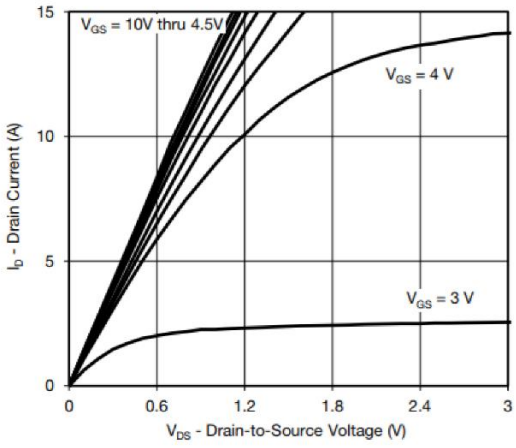
c. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150℃. Ratings are based on low frequency and duty cycles to keep initial T_J=25℃.

d. The $R_{\theta JA}$ is the sum of the thermal impedence from junction to lead $R_{\theta JL}$ and lead to ambient.

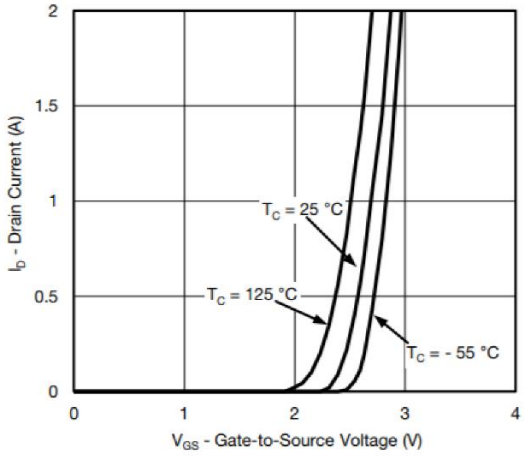
4. Electrical Characteristics (T_A=25℃, unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF Characteristics						
Drain-source breakdown voltage	B_{VDSS}	V_{GS}=0V, I_D=-250μA	-60	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=-60V, V_{GS}=0V	-	-	-1	μA
Gate-body leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±20V	-	-	±100	nA
ON Characteristics						
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	-1.0	-1.5	-2.2	V
Drain-source on-state resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-4A	-	75	90	mΩ
		V_{GS}=-4.5V, I_D=-3A	-	90	110	
Forward transconductance	gfs	V_{DS}=-30V, I_D=-4A	-	11	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS}=-30V, V_{GS}=0V F=1.0MHz	-	832	-	pF
Output capacitance	C_{oss}		-	88	-	
Reverse transfer capacitance	C_{rss}		-	63	-	
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=-30V I_D=-3A V_{GS}=-10V R_L=10.7Ω R_{GEN}=1Ω	-	8	-	nS
Turn-on Rise Time	t_r		-	6	-	
Turn-off Delay Time	$t_{d(off)}$		-	35	-	
Turn-off Fall Time	t_f		-	16	-	
Total Gate Charge	Q_g	V_{DS}=-30V I_D=-4A V_{GS}=-10V	-	20	-	nC
Gate-Source Charge	Q_{gs}		-	3.3	-	
Gate-Drain Charge	Q_{gd}		-	3.9	-	
Drain-source Diode Characteristics						
Diode forward voltage	V_{SD}	V_{GS}=0V, I_S=-4A	-	-0.81	-1.2	V

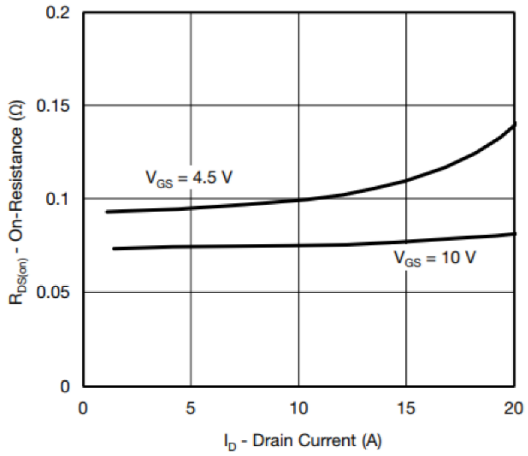
5. Typical Characteristics



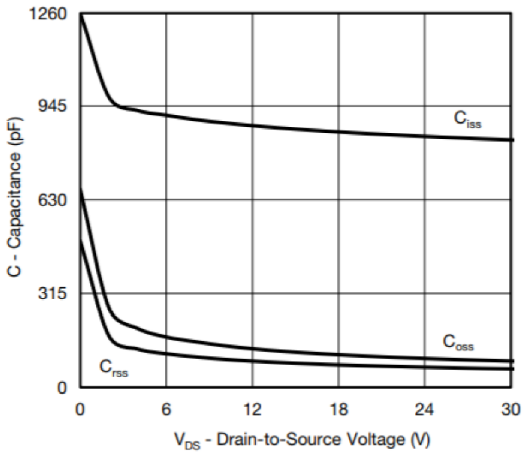
Output Characteristics



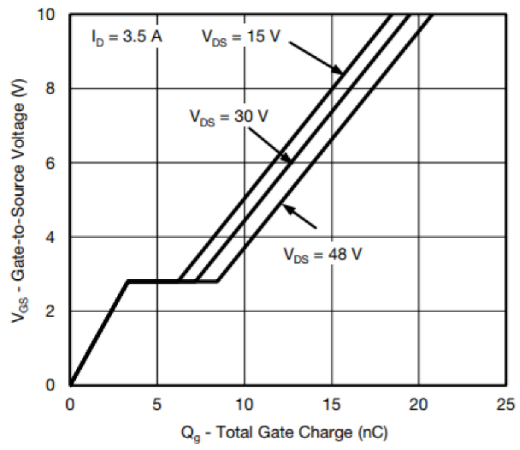
Transfer Characteristics



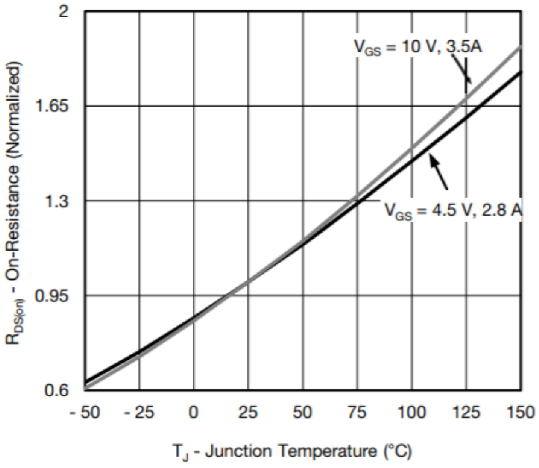
On-Resistance vs. Drain Current



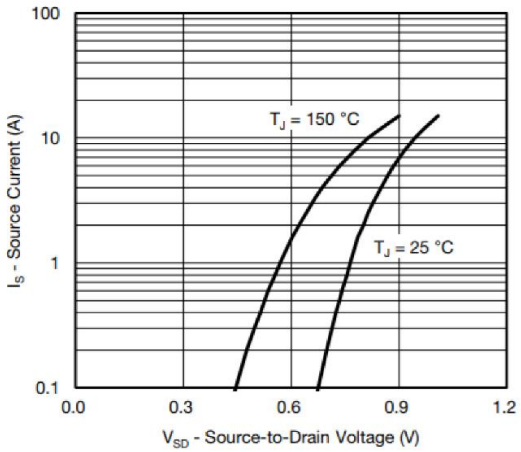
Capacitance



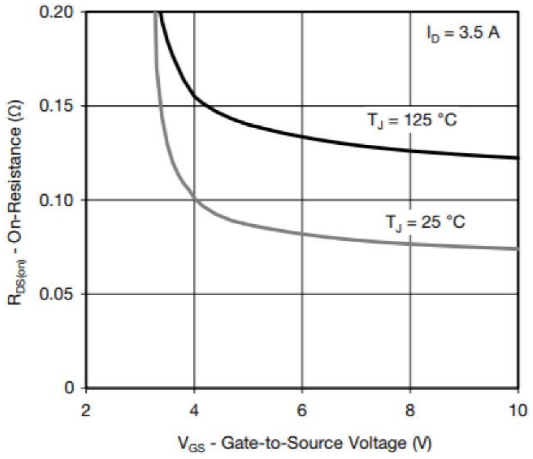
Gate Charge



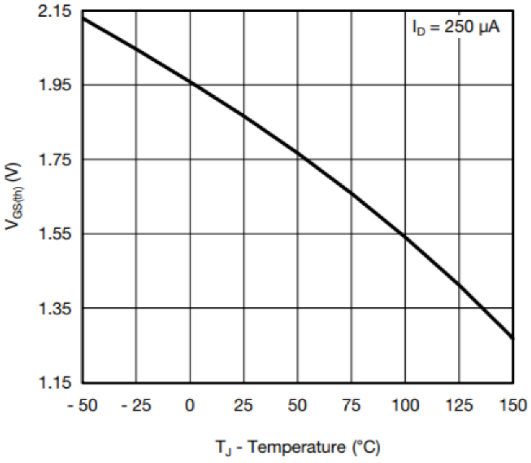
On-Resistance vs. Junction Temperature



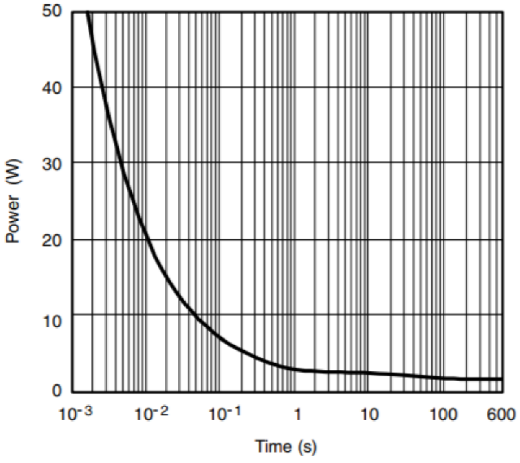
Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage



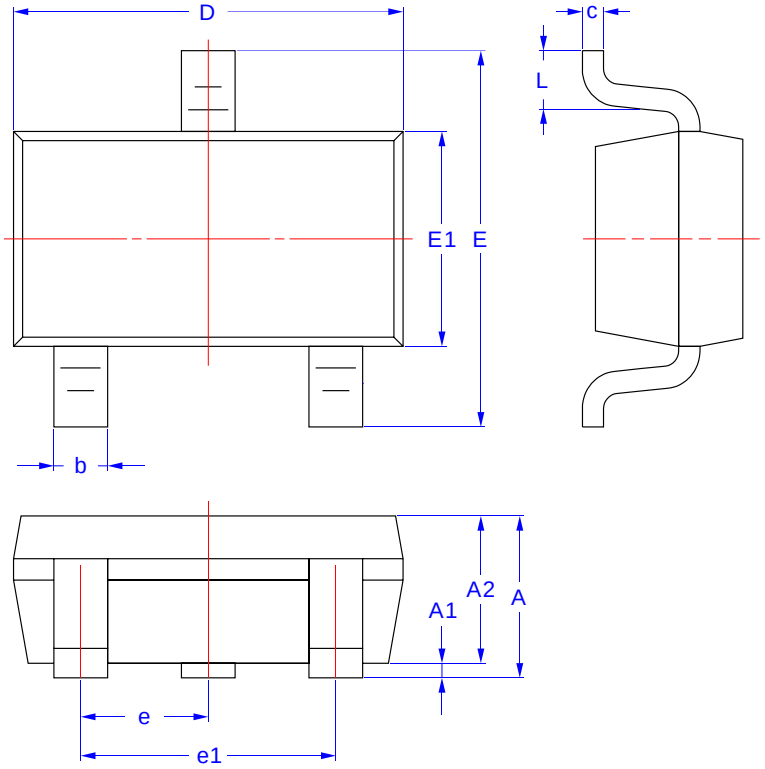
Threshold Voltage



Single Pulse Power, Junction-to-Ambient

6. Package Mechanical Data

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