

P-Channel Enhancement Mode MOSFET

1. Product Information

1.1 Features

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

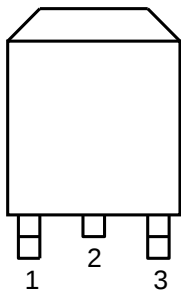
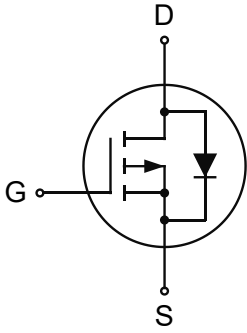
1.2 Applications

- ☒ Portable appliances
- ☒ Battery management
- ☒ High speed switch
- ☒ Low power DC to DC Converter

1.3 Quick reference

- ☒ $BV \geq -60\text{ V}$
- ☒ $R_{DS(ON)} \leq 130\text{ m}\Omega @ V_{GS} = -10\text{ V}$
- ☒ $P_{tot} \leq 20\text{ W}$
- ☒ $R_{DS(ON)} \leq 160\text{ m}\Omega @ V_{GS} = -4.5\text{ V}$
- ☒ $I_D \leq -15\text{ A}$

2. Pin Description

Pin	Description	Simplified Outline	Symbol
1	Gate(G)	 Top View TO-252	
2	Drain(D)		
3	Source(S)		

3. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V _{DS}	Drain-Source Voltage	T _A = 25 °C	-60	-	V
V _{GS}	Gate-Source Voltage	T _A = 25 °C	-	±20	V
I _D *	Drain Current	T _A = 25 °C, V _{GS} = -10 V	-	-15	A
		T _A = 25 °C, V _{GS} = -10 V	-	-5	A
I _{DM} **,**	Pulsed Source Current	T _A = 25 °C, V _{GS} = -10 V	-	-30	A
P _{tot}	Drain power dissipation	T _A = 25 °C	-	20	W
T _{stg}	Storage Temperature		- 55	150	°C
T _J	Junction Temperature		-	150	°C
I _S	Diode Forward Current	T _A = 25 °C	-	-15	A
R _{θJA} *	Thermal Resistance-Junction to Ambient		-	150	°C/W

Notes:

* Surface Mounted on 1 in² pad area, t ≤ 10 sec

** Pulse width ≤ 10μs, duty cycle ≤ 2%

4. Marking Information

Product Name	Marking
KJ15P06K	15P06 YWWXXX YWWXXX: Date Code

5. Ordering Code

Product Name	Package	Reel Size	Tape width	Quantity	Note
KJ15P06K	TO-252	-	-	2500	

Note: KUAJIEXIN 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)

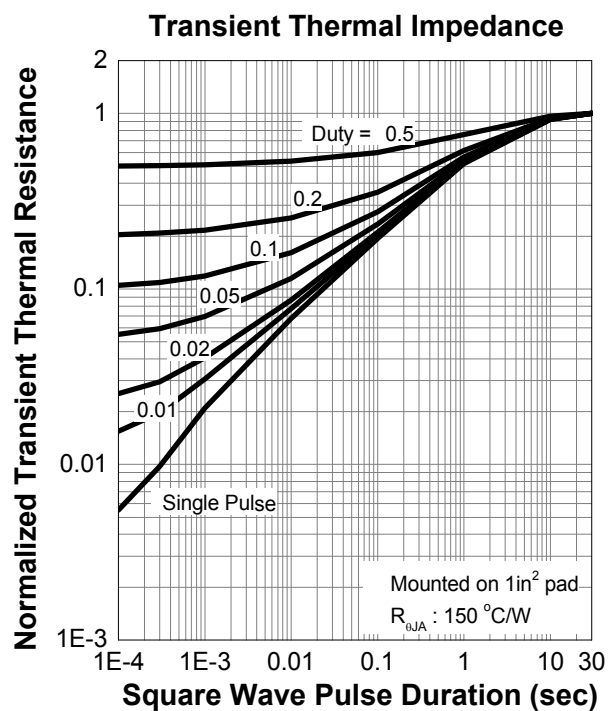
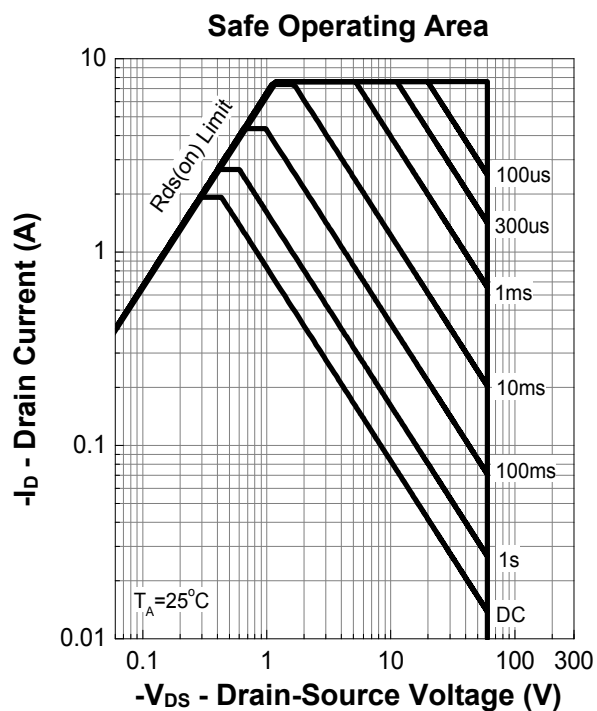
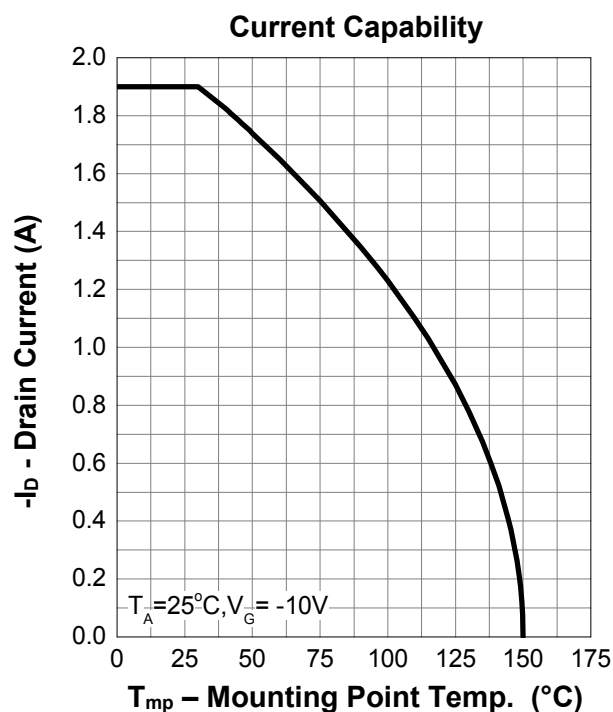
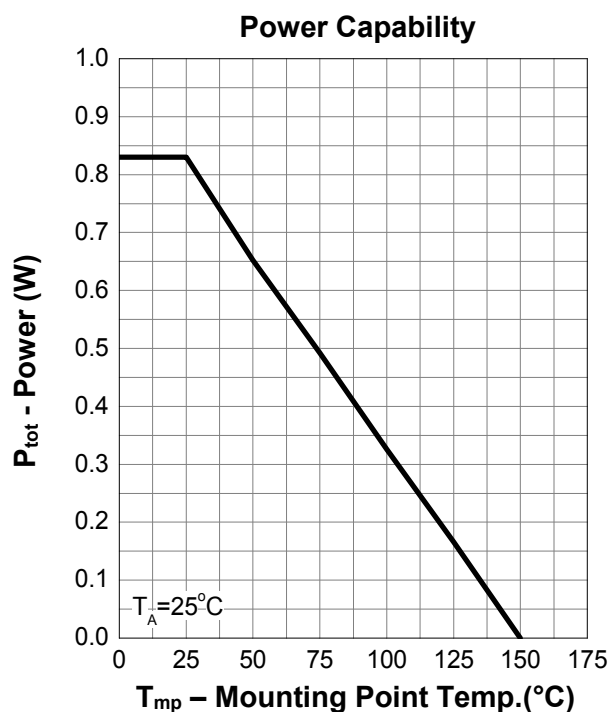
6. Electrical Characteristics (T_A=25°C Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0 V, I _{DS} = - 250 μA	- 60	–	–	V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _{DS} = - 250 μA	- 1	- 2	- 3	V
I _{DSS}	Drain Leakage Current	V _{DS} = - 48 V, V _{GS} = 0 V	-	-	- 1	μA
		T _J = 85 °C	-	-	- 30	μA
I _{GSS}	Gate Leakage Current	V _{GS} = ± 20 V, V _{DS} = 0 V	-	-	± 100	nA
R _{DS(ON)} ^a	On-State Resistance	V _{GS} = - 10 V, I _{DS} = - 1.5 A	-	105	130	m Ω
		V _{GS} = - 4.5 V, I _{DS} = - 1 A	-	145	160	
Diode Characteristics						
V _{SD} ^a	Diode Forward Voltage	I _{SD} = - 1 A, V _{GS} = 0 V	-	- 0.8	- 1.4	V
Dynamic Characteristics ^b						
C _{iss}	Input Capacitance	V _{GS} = 0 V, V _{DS} = -15 V Frequency = 1 MHz	-	580	-	pF
C _{oss}	Output Capacitance		-	52	-	
C _{rss}	Reverse Transfer Capacitance		-	35	-	
t _{d(on)}	Turn-on Delay Time	V _{DS} = - 15 V, V _{GEN} = - 10 V, R _G = 3.3 Ω, R _L = 15 Ω, I _{DS} = - 1 A	-	17.4	-	ns
t _r	Turn-on Rise Time		-	5.4	-	
t _{d(off)}	Turn-off Delay Time		-	37.2	-	
t _f	Turn-off Fall Time		-	2.4	-	
Gate Charge Characteristics ^b						
Q _g	Total Gate Charge	V _{GS} = - 10 V, V _{DS} = - 20 V, I _{DS} = - 1.5 A	-	9.5	-	nC
Q _{gs}	Gate-Source Charge		-	1.52	-	
Q _{gd}	Gate-Drain Charge		-	1.76	-	

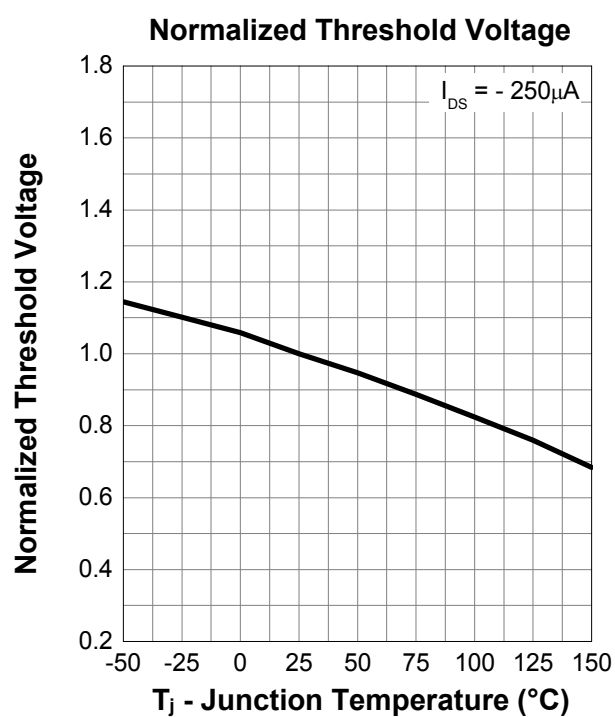
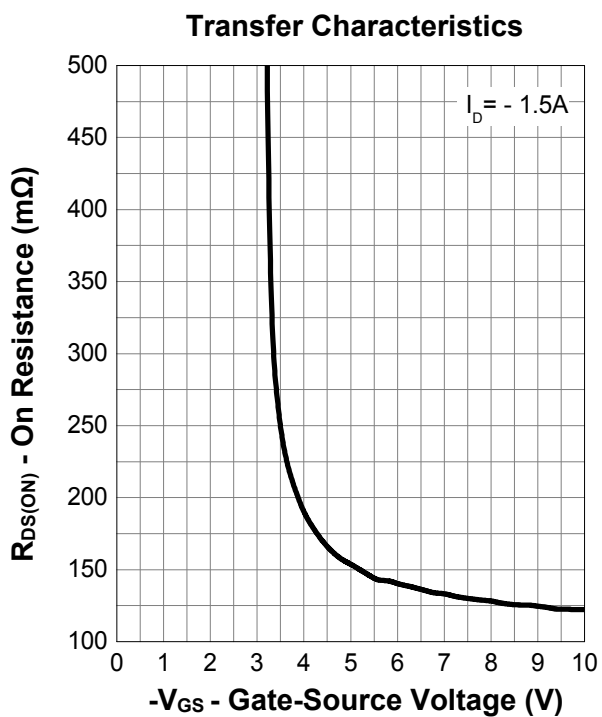
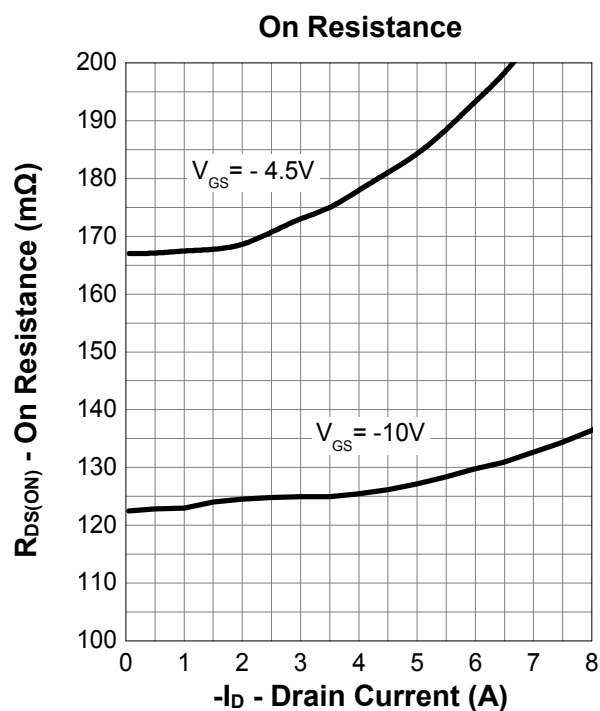
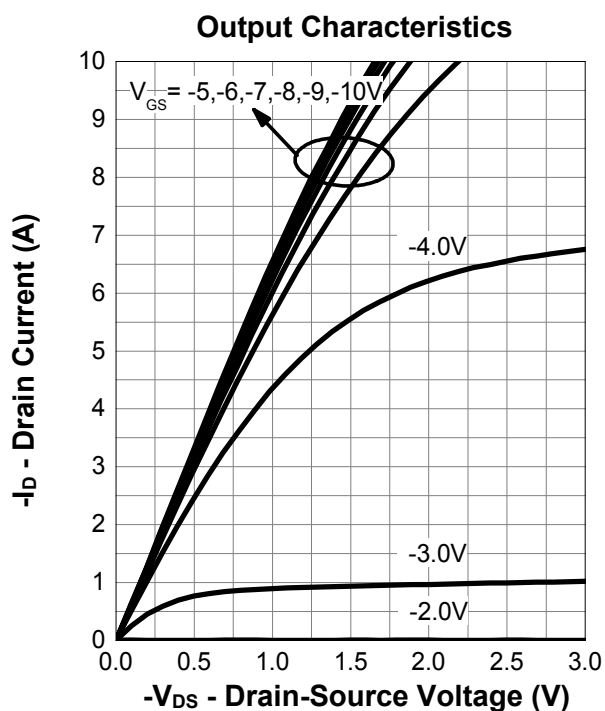
Notes : a : Pulse test ; pulse width ≤ 300 μs, duty cycle ≤ 2 %

b : Guaranteed by design, not subject to production testing

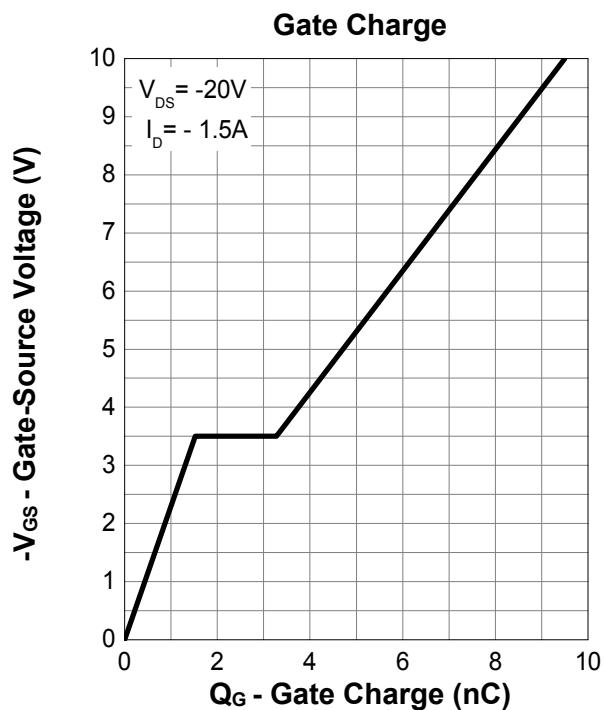
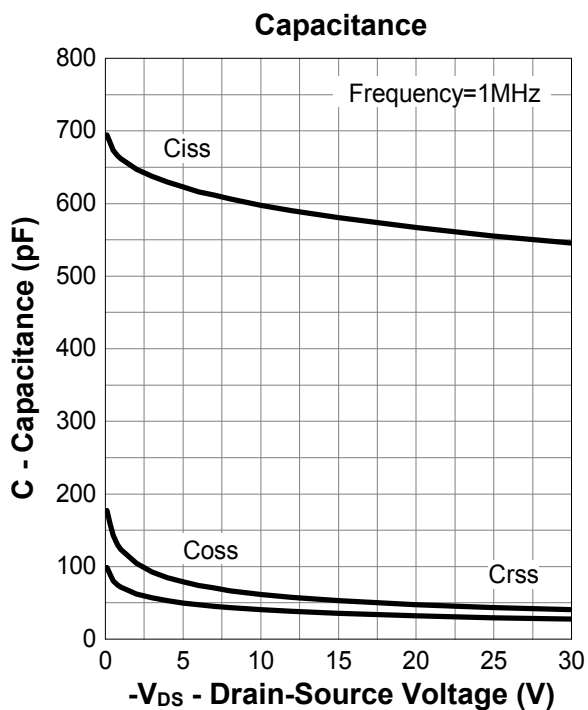
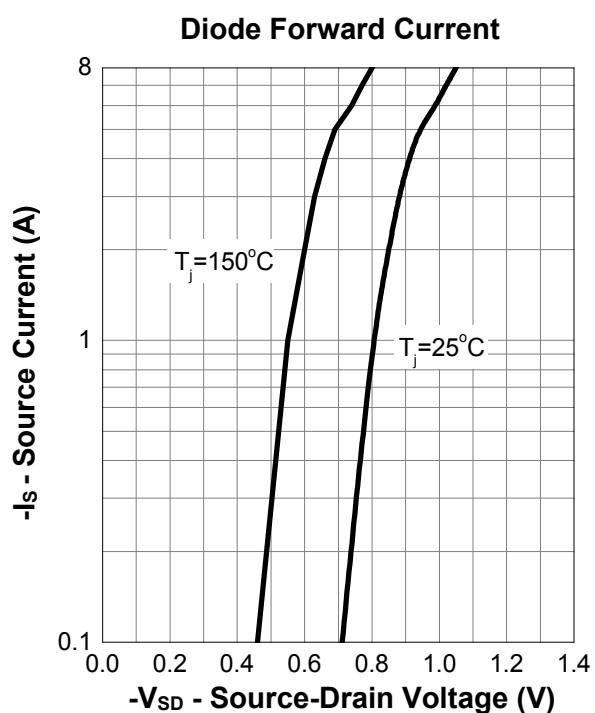
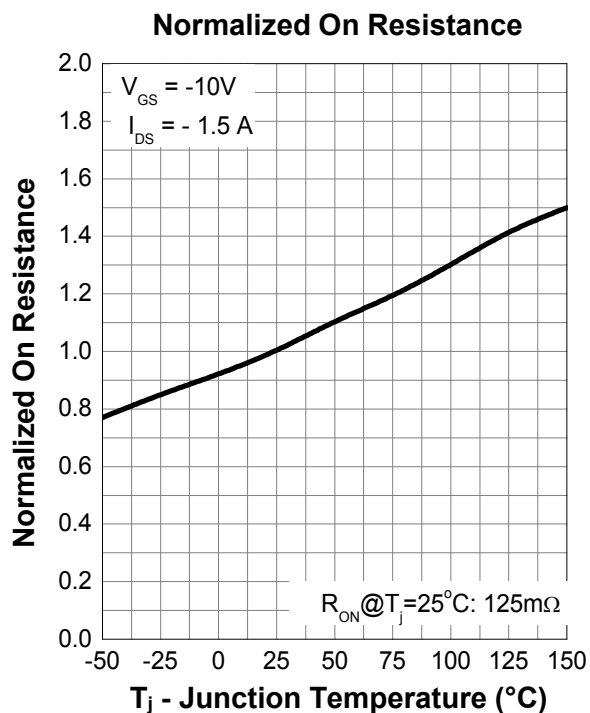
7. Typical Characteristics



7. Typical Characteristics (Cont.)

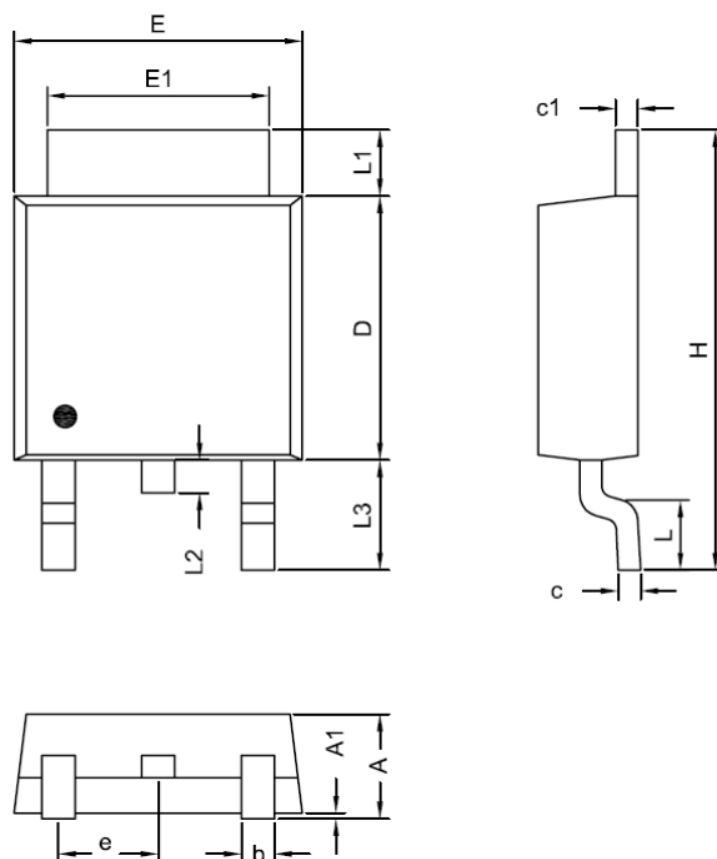


7. Typical Characteristics (Cont.)



8. Package Dimensions

TO-252 Package



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	2.19	2.38
A1	0.02	0.13
D	5.30	6.40
E	6.35	6.80
E1	5.20	5.50
c	0.40	0.60
c1	0.40	0.60
b	0.55	0.85
e	2.30 BCS	
L	1.00	1.80
L1	0.70	1.80
L2	0.70 BCS	
L3	2.40	2.80
H	9.20	10.40