KJ6880K

N-Channel Enhancement Mode MOSFET

1. Product Information

1.1 Features

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

1.2 Applications

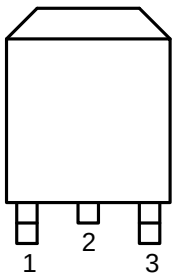
- ☑ BMS appliances
- ☑ Power Tool appliances
- ☑ High power inverter system

1.3 Quick reference

- ☑ BV ≧ 68 V
- ☑ P_{tot} ≦ 110 W
- ☑ I_D ≦ 80 A
- ☑ $R_{DS(ON)}$ ≦ 8 mΩ @ V_{GS} = 10 V

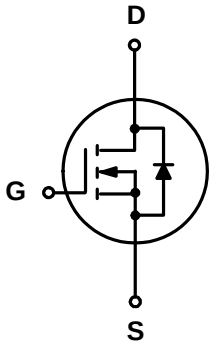
2. Pin Description

Pin	Description
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 ℃	68	-	V
V_{GS}	Gate-Source Voltage	T_C = 25 ℃	-	±20	V
I_D***	Drain Current (DC)	T_C = 25 ℃, V_{GS} = 10 V	-	80	A
		T_C = 100 ℃, V_{GS} = 10 V	-	68	A
I_{DM}*,***	Drain Current (Pulsed)	T_C = 25 ℃, V_{GS} = 10 V	-	320	A
P_{tot}	Drain power dissipation	T_C = 25 ℃	-	110	W
T_{stg}	Storage Temperature		-55	150	℃
T_J	Junction Temperature		-	150	℃
I_S	Continuous-Source Current	T_C = 25 ℃	-	80	A
E_{AS}	Single Pulsed Avalanche Energy	L=0.5mH, Ias=30A, TJ =25℃		390	mJ
$R_{\theta JA}$**	Thermal Resistance- Junction to Ambient		-	62.5	℃/W
$R_{\theta JC}$**	Thermal Resistance- Junction to Case		-	1.36	

Notes：

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

** Mounted on Large Heat Sink

*** limited by bonding wire

4. Marking Information

Product Name	Marking
KJ6880K	6880K YWWXXX YWW: Date Code

5. Ordering Code

Product Name	Package	Reel Size	Tape width	Quantity	Note
KJ6880K	TO-252			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_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	68	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_{DS} = 250 μA	2.0	-	4.0	V
I_{DSS}	Drain Leakage Current	V_{DS} = 60 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} = 20 A	-	7	8	mΩ
Diode Characteristics						
V_{SD}[a]	Diode Forward Voltage	I_{SD} = 20 A, V_{GS} = 0 V	-	-	1.2	V
Dynamic Characteristics[b]						
C_{iss}	Input Capacitance	V_{GS} = 0 V, V_{DS} = 30 V Frequency = 1 MHz	-	4000	-	pF
C_{oss}	Output Capacitance		-	290	-	
C_{rss}	Reverse Transfer Capacitance		-	210	-	
t_d(on)	Turn-on Delay Time	V_{DS} = 30 V, V_{GEN} = 10 V, R_G = 4.5 Ω, R_L = 1.5 Ω, I_{DS} = 20 A	-	8.5	-	ns
t_r	Turn-on Rise Time		-	7	-	
t_d(off)	Turn-off Delay Time		-	40	-	
t_f	Turn-off Fall Time		-	15	-	
Gate Charge Characteristics[b]						
Q_g	Total Gate Charge	V_{DS} = 30 V, V_{GS} = 10 V, I_{DS} = 20 A	-	90	-	nC
Q_{gs}	Gate-Source Charge		-	9	-	
Q_{gd}	Gate-Drain Charge		-	18	-	

Notes：

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

b : Guaranteed by design, not subject to production testing

7. Typical Characteristics

Figure 1 Output Characteristics

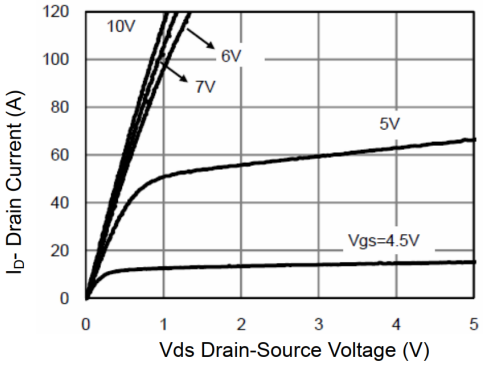


Figure 2 Transfer Characteristics

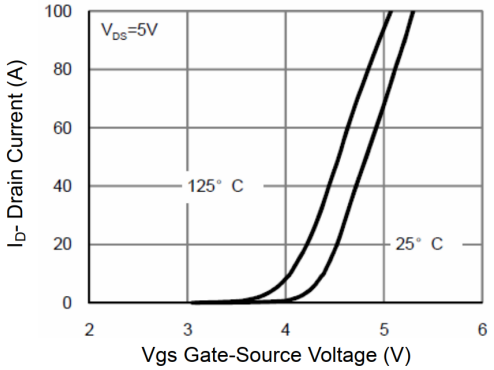


Figure 3 On-Resistance vs. I_D and V_{GS}

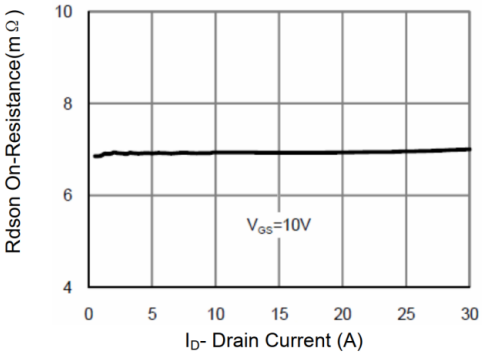


Figure 4 On-Resistance vs. Junction Temperature

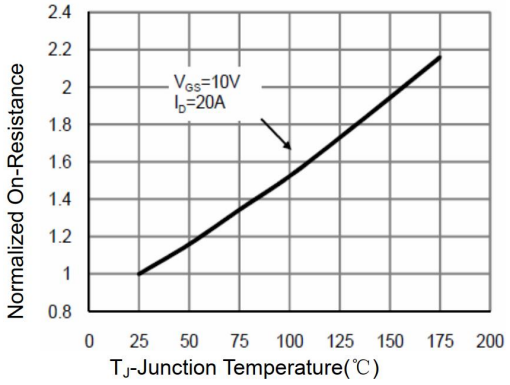


Figure 5 On-Resistance vs. V_{GS}

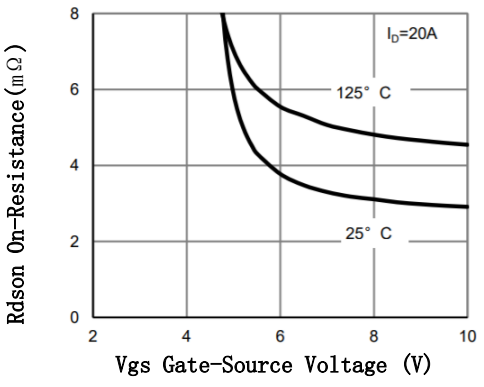
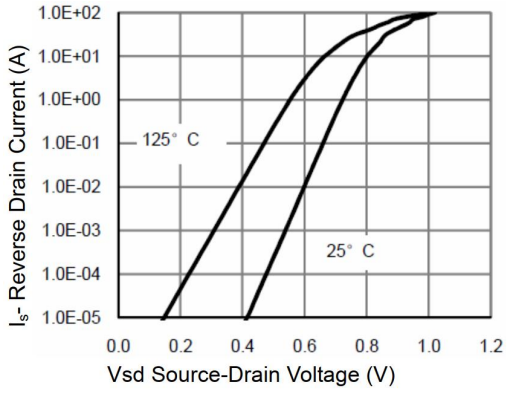


Figure 6 Body Diode Forward Voltage



7. Typical Characteristics (cont.)

Figure 7 Gate-Charge Characteristics

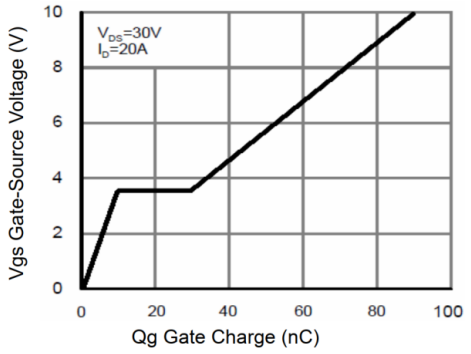


Figure 8 Capacitance Characteristics

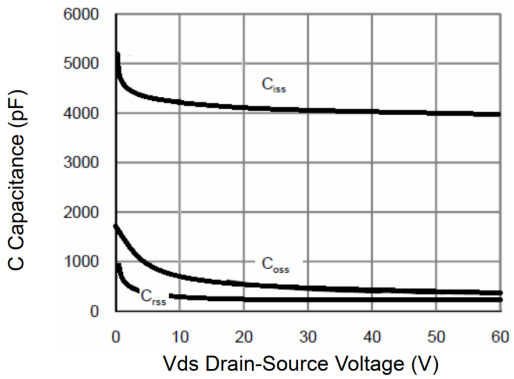


Figure 9a Maximum Forward Biased Safe

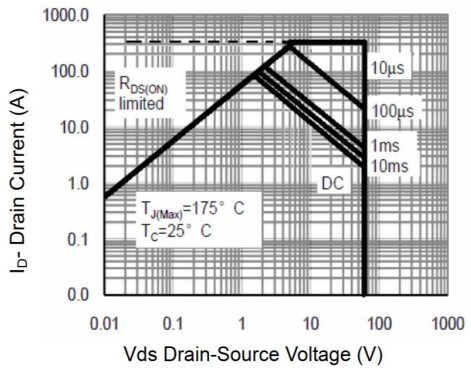


Figure 10a Single Pulse Power Rating

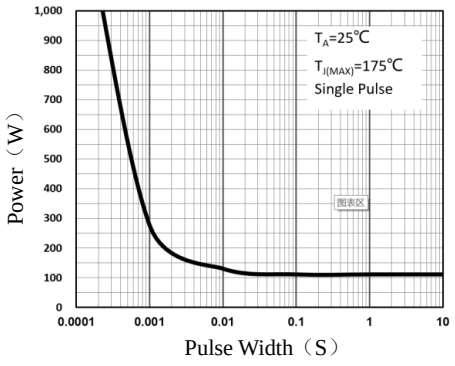
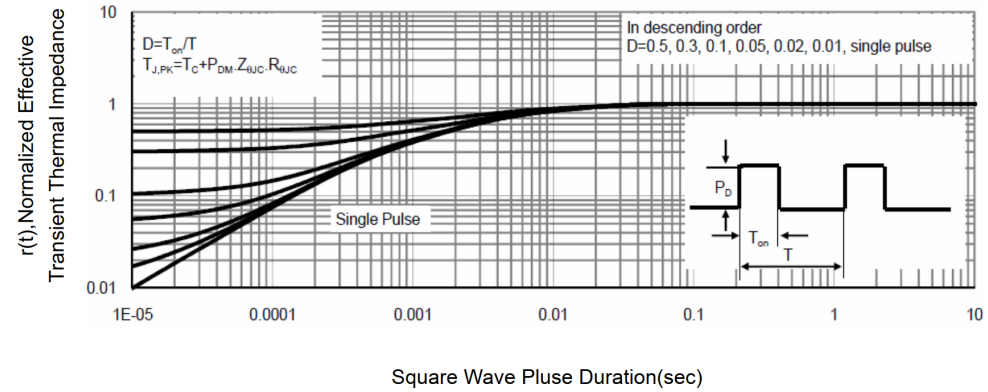
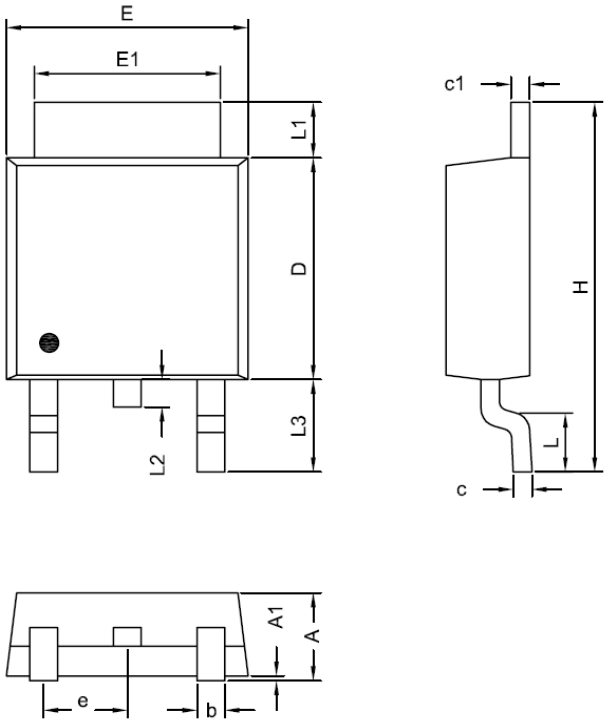


Figure 11a Normalized Maximum Transient Thermal Impedance



8.Package Dimensions

TO252-3L



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