

## N-Channel Enhancement Mode MOSFET

### 1. Product Information

#### 1.1 Features

- Surface-mounted package  
 Advanced trench cell design
- Extremely low threshold voltage

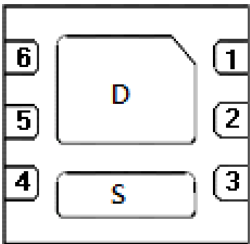
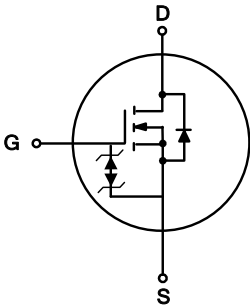
#### 1.2 Applications

- Portable appliances
- Battery management

#### 1.3 Quick reference

- $BV \geq 30\text{ V}$   
  $P_{tot} \leq 1.56\text{ W}$   
  $I_D \leq 4.9\text{ A}$
- $R_{DS(ON)} \leq 43\text{ m}\Omega @ V_{GS} = 4.5\text{ V}$   
  $R_{DS(ON)} \leq 54\text{ m}\Omega @ V_{GS} = 2.5\text{ V}$   
  $R_{DS(ON)} \leq 74\text{ m}\Omega @ V_{GS} = 1.8\text{ V}$

### 2. Pin Description

Pin	Description	Simplified Outline	Symbol
1,2,5,6	Drain	 <p>Bottom View DFN2X2-6L</p>	
3	Gate		
4	Source		



## 3. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V <sub>DS</sub>	Drain-Source Voltage	T <sub>A</sub> = 25 °C	30	-	V
V <sub>GS</sub>	Gate-Source Voltage	T <sub>A</sub> = 25 °C	-	± 10	V
I <sub>D</sub> *	Drain Current	T <sub>A</sub> = 25 °C, V <sub>GS</sub> = 4.5 V	-	4.9	A
I <sub>DM</sub> **,**	Pulsed Drain Current	T <sub>A</sub> = 25 °C, V <sub>GS</sub> = 4.5 V	-	19.6	A
P <sub>tot</sub> *	Total Power Dissipation	T <sub>A</sub> = 25 °C	-	1.56	W
T <sub>stg</sub>	Storage Temperature		- 55	150	°C
T <sub>J</sub>	Junction Temperature		-	150	°C
I <sub>S</sub> *	Diode Forward Current	T <sub>A</sub> = 25 °C	-	4.9	A
R <sub>θJA</sub> *	Thermal Resistance- Junction to Ambient		-	80	°C / W

Notes :

- \* Surface Mounted on 1 in<sup>2</sup> pad area, t ≤ 10 sec
- \*\* Pulse width ≤ 300 μs, duty cycle ≤ 2 %
- \*\*\* Limited by bonding wire

## 4. Marking Information

Product Name	Marking
KJ4800N2S	<div style="display: inline-block; border: 1px solid black; padding: 2px;">4800 YWWXXX</div> <span style="margin-left: 20px;">YWWXXX: Date Code</span>

## 5. Ordering Code

Product Name	Package	Reel Size	Tape width	Quantity	Note
KJN4800N2S	DFN2*2			5000	

Note: KJAIJIXIN 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<sub>A</sub> = 25 °C Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit	
<b>Static Characteristics</b>							
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> = 0 V, I <sub>DS</sub> = 250 μA	30	-	-	V	
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>DS</sub> = 250 μA	0.5	-	1.0	V	
I <sub>DSS</sub>	Drain Leakage Current	V <sub>DS</sub> = 24 V, V <sub>GS</sub> = 0 V T <sub>J</sub> = 85 °C	-	-	1	μA	
			-	-	30	μA	
I <sub>GSS</sub>	Gate Leakage Current	V <sub>GS</sub> = ± 10 V, V <sub>DS</sub> = 0 V	-	-	± 10	uA	
R <sub>DS(ON)</sub> <sup>a</sup>	On-State Resistance		V <sub>GS</sub> = 4.5 V, I <sub>DS</sub> = 4 A	-	36	43	m Ω
			V <sub>GS</sub> = 2.5 V, I <sub>DS</sub> = 3 A	-	43	54	
			V <sub>GS</sub> = 1.8 V, I <sub>DS</sub> = 2 A	-	57	74	
<b>Diode Characteristics</b>							
V <sub>SD</sub> <sup>a</sup>	Diode Forward Voltage	I <sub>SD</sub> = 4 A, V <sub>GS</sub> = 0 V	-	-	1.2	V	
t <sub>rr</sub>	Reverse Recovery Time	I <sub>SD</sub> = 4 A, dI <sub>SD</sub> / dt = 100 A / μs	-	6.3	-	nS	
Q <sub>rr</sub>	Reverse Recovery Charge		-	2.2	-	nC	
<b>Dynamic Characteristics<sup>b</sup></b>							
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> = 0 V, V <sub>DS</sub> = 15 V Frequency = 1 MHz	-	526	-	pF	
C <sub>oss</sub>	Output Capacitance		-	38	-		
C <sub>rss</sub>	Reverse Transfer Capacitance		-	33	-		
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>DS</sub> = 15 V, V <sub>GEN</sub> = 4.5 V, R <sub>G</sub> = 4.5 Ω, R <sub>L</sub> = 3.75 Ω, I <sub>DS</sub> = 4 A	-	4.4	-	uS	
t <sub>r</sub>	Turn-on Rise Time		-	29	-		
t <sub>d(off)</sub>	Turn-off Delay Time		-	22	-		
t <sub>f</sub>	Turn-off Fall Time		-	21	-		
<b>Gate Charge Characteristics<sup>b</sup></b>							
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 4.5 V, I <sub>DS</sub> = 4 A	-	6.6	-	nC	
Q <sub>gs</sub>	Gate-Source Charge		-	1.8	-		
Q <sub>gd</sub>	Gate-Drain Charge		-	1.4	-		

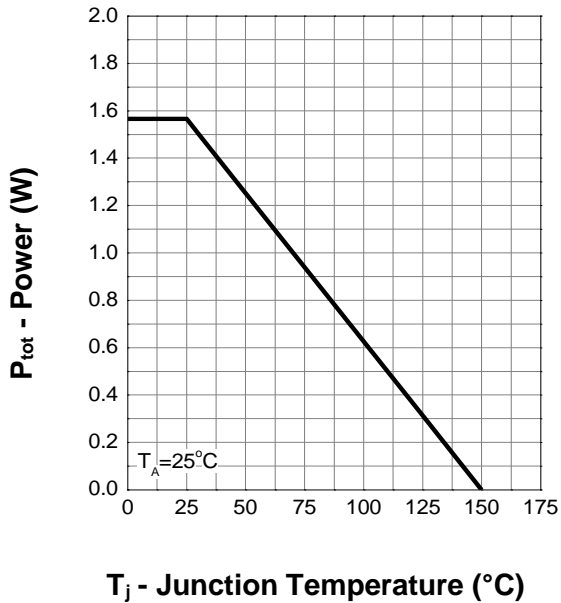
Notes :

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

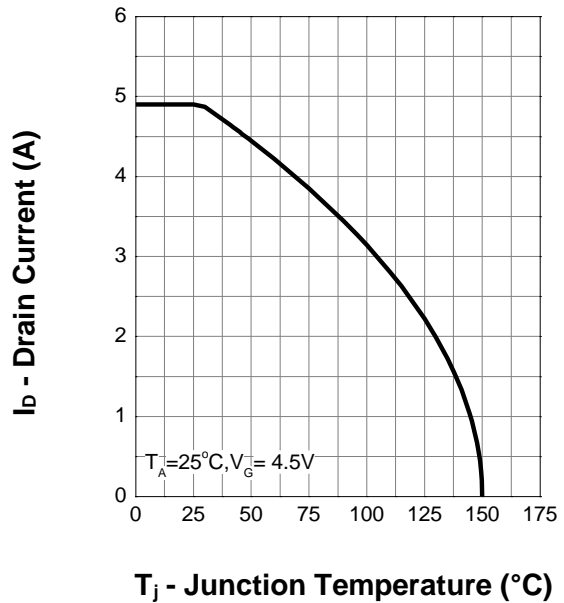
b : Guaranteed by design, not subject to production testing

## 7. Typical Characteristics

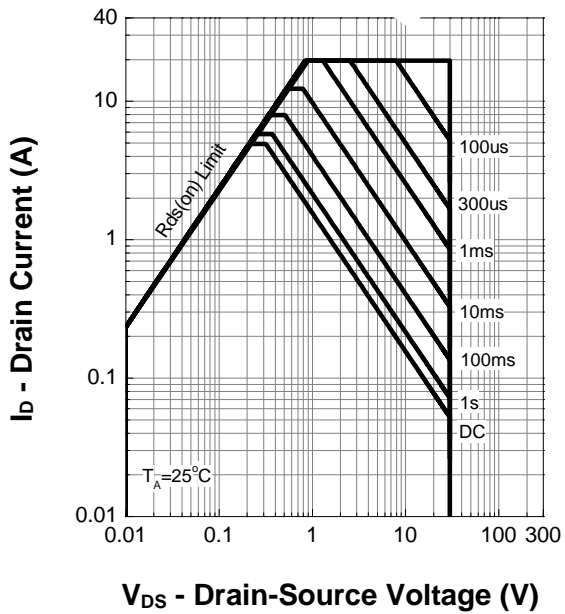
Power Capability



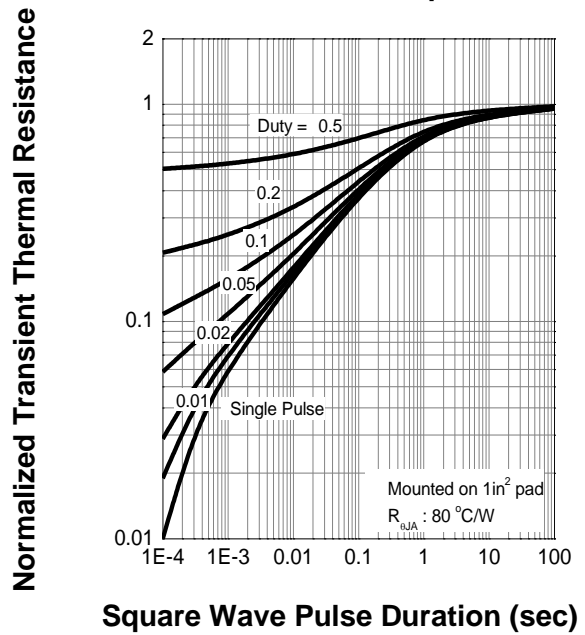
Current Capability



Safe Operz



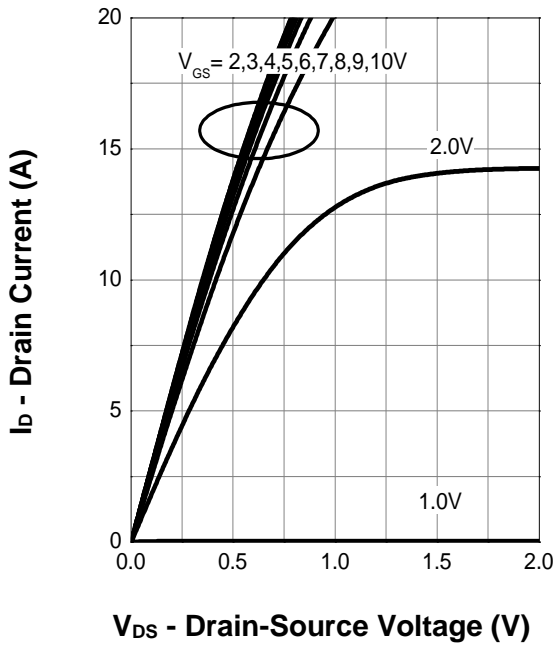
Transient Thermal Impedance



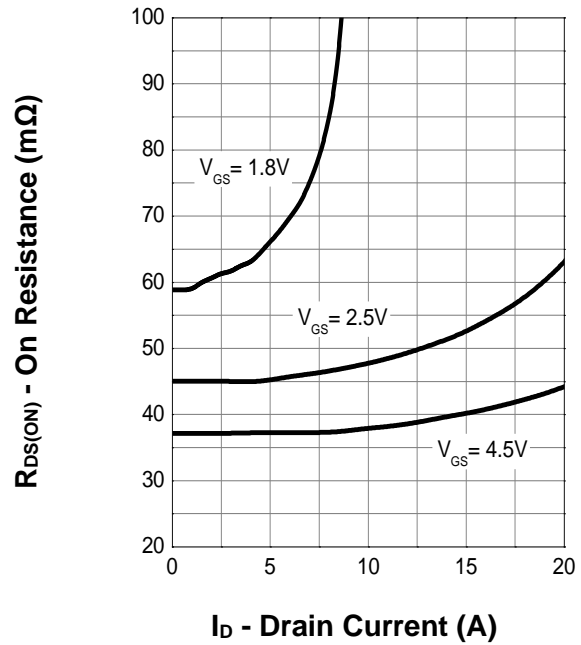


## 7. Typical Characteristics (cont.)

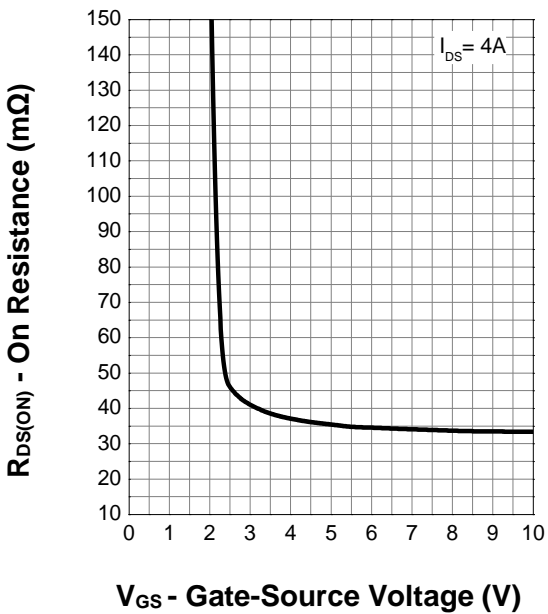
### Output Characteristics



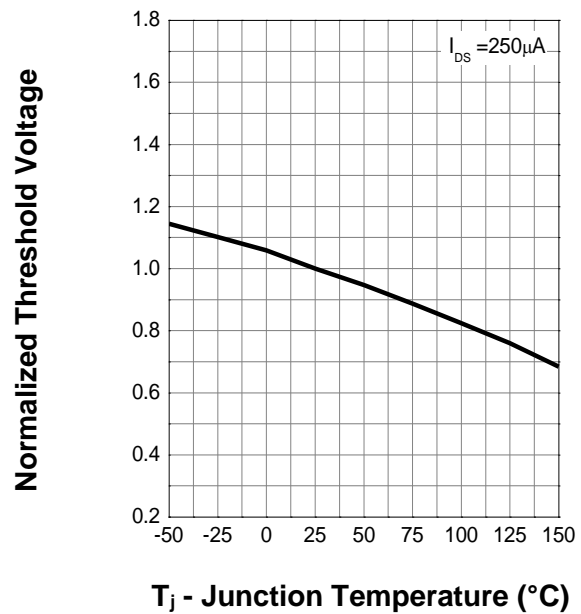
### On Resistance



### Transfer Characteristics

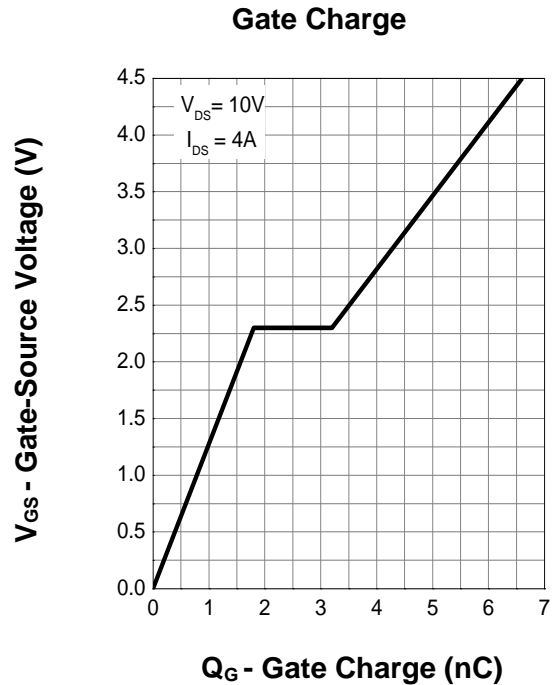
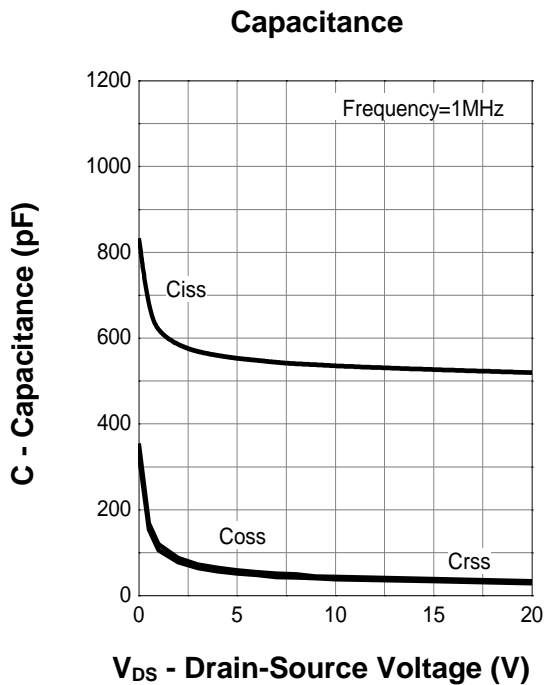
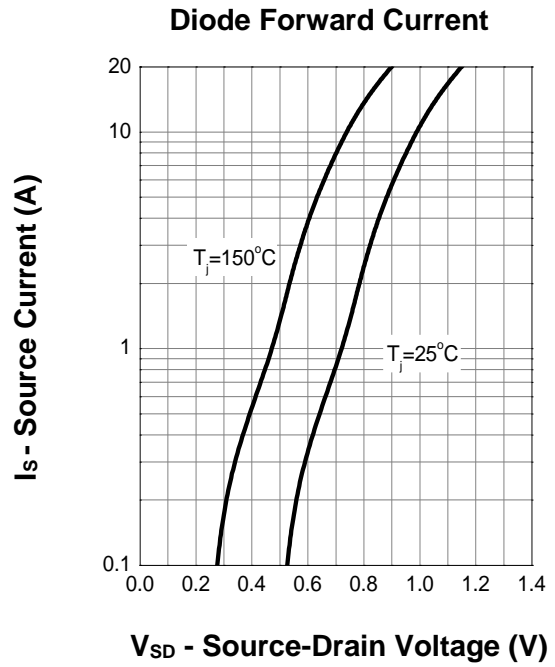
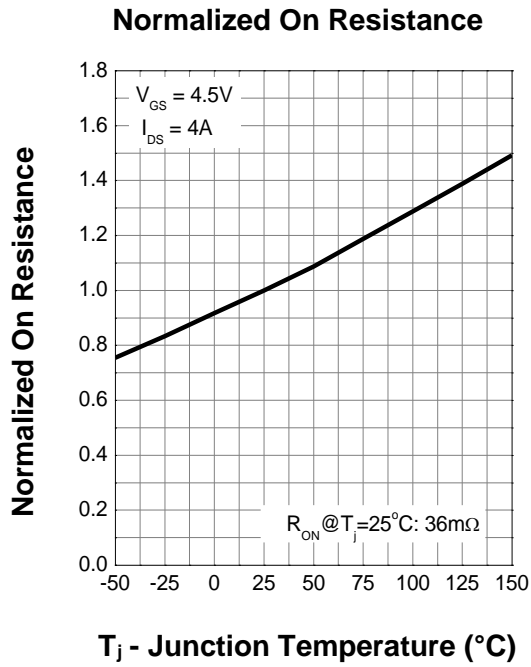


### Normalized Threshold Voltage





## 7. Typical Characteristics (cont.)





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KJ4800N2S

## 8.Package Dimensions

DFN2\*2-6L

