

# Dual N-Channel Enhancement Mode MOSFET

## 1. Product Information

### 1.1 Features

- Surface-mounted package
- Advanced trench cell design
- ESD protected

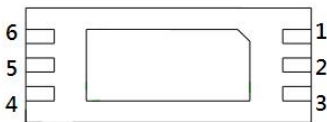
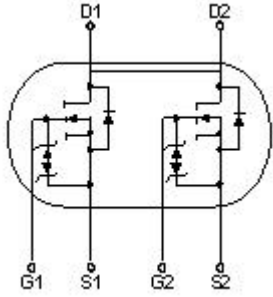
### 1.2 Applications

- Portable appliances
- Battery management

### 1.3 Quick reference

- $BV \geq 20\text{ V}$
- $R_{DS(ON)} \leq 6.8\text{ m}\Omega @ V_{GS} = 4.5\text{ V}$
- $P_{tot} \cong 1.7\text{ W}$
- $R_{DS(ON)} \leq 7.0\text{ m}\Omega @ V_{GS} = 3.9\text{ V}$
- $I_D \cong 20\text{ A}$
- $R_{DS(ON)} \leq 9.5\text{ m}\Omega @ V_{GS} = 2.5\text{ V}$

## 2. Pin Description

Pin	Description	Simplified Outline	Symbol
1,2	Source(S1)		
3	Gate(G1)		
5,6	Source(S2)		
4	Gate(G2)		

**Bottom View**  
**DFN2x5-6L**

### 3. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
$V_{DS}$	Drain-Source Voltage	$T_A = 25\text{ }^\circ\text{C}$	20	-	V
$V_{GS}$	Gate-Source Voltage	$T_A = 25\text{ }^\circ\text{C}$	-	$\pm 10$	V
$I_D^*$	Drain Current	$T_A = 25\text{ }^\circ\text{C}, V_{GS} = 10\text{ V}$	-	20	A
$I_{DM}^{**}$	Pulsed Drain Current	$T_A = 25\text{ }^\circ\text{C}, V_{GS} = 10\text{ V}$	-	52	A
$P_{tot}$	Total Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	-	1.7	W
$T_{stg}$	Storage Temperature		- 55	150	$^\circ\text{C}$
$T_J$	Junction Temperature		- 55	150	$^\circ\text{C}$
$I_S$	Diode Forward Current	$T_A = 25\text{ }^\circ\text{C}$	-	20	A
$R_{\theta JA}^*$	Thermal Resistance- Junction to Ambient		-	75	$^\circ\text{C} / \text{W}$

Notes :

\* Surface Mounted on 1 in<sup>2</sup> pad area,  $t \leq 10\text{ sec}$

\*\* Pulse width  $\leq 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$

### 4. Marking Information

Product Name	Marking
KJ5R65A	

### 5. Ordering Code

Product Name	Package	Reel Size	Tape width	Quantity	Note
KJ5R65A	DFN2*5			2000	

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 ( $T_A=25\text{ }^\circ\text{C}$ Unless Otherwise Noted )

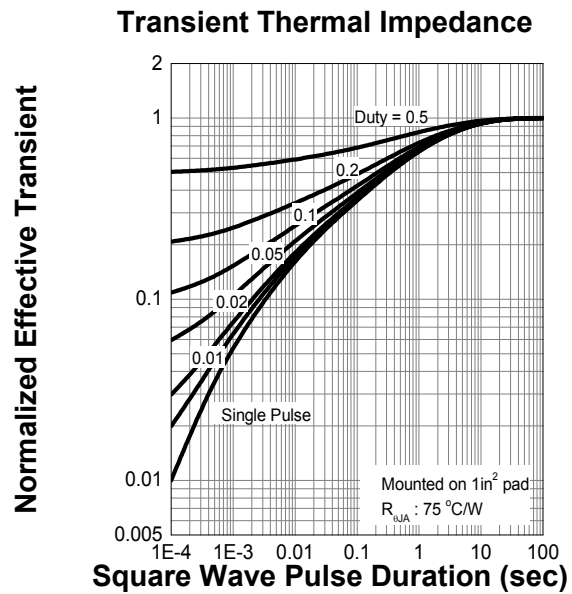
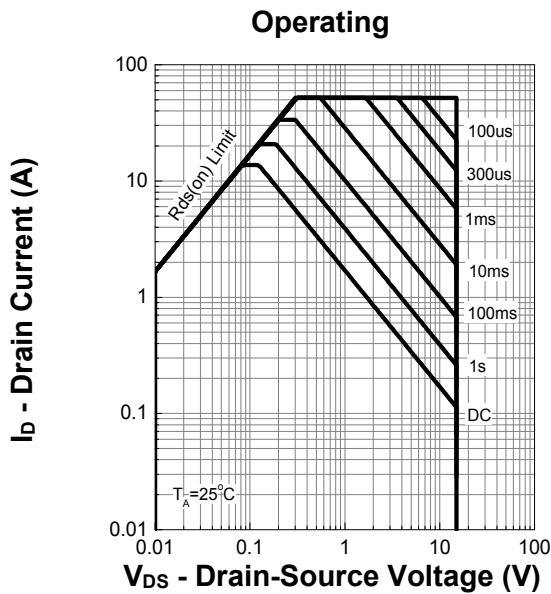
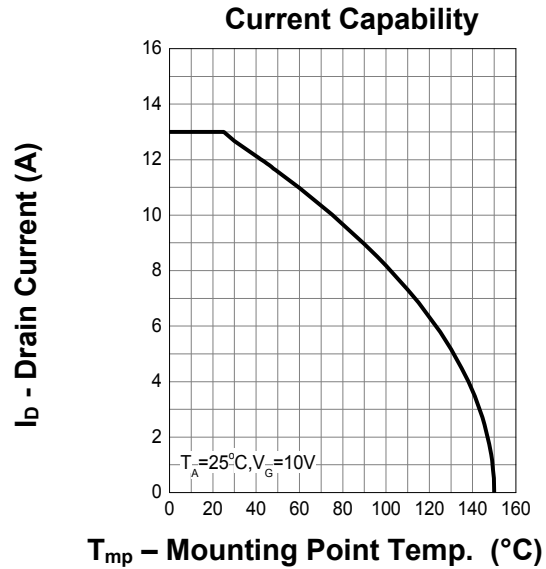
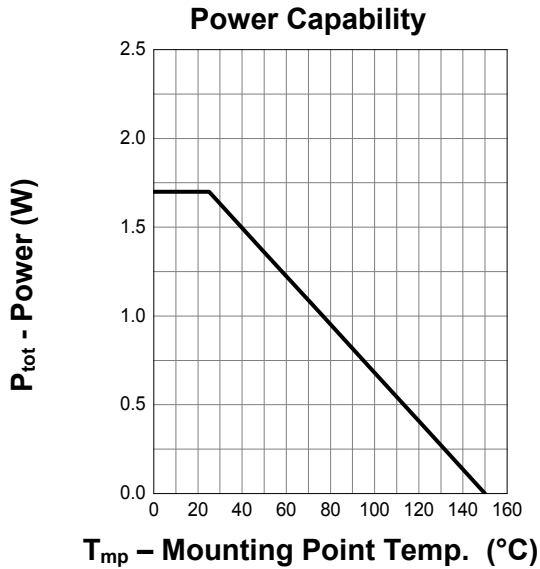
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_{DS} = 250\text{ }\mu\text{A}$	20	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_{DS} = 250\text{ }\mu\text{A}$	0.5	-	1.0	V
$I_{DSS}$	Drain Leakage Current	$V_{DS} = 15\text{ V}, V_{GS} = 0\text{ V}$	-	-	1	$\mu\text{A}$
		$T_J = 85\text{ }^\circ\text{C}$	-	-	30	$\mu\text{A}$
$I_{GSS}$	Gate Leakage Current	$V_{GS} = \pm 10\text{ V}, V_{DS} = 0\text{ V}$	-	-	$\pm 100$	nA
$R_{DS(on)}^a$	On-State Resistance	$V_{GS} = 4.5\text{ V}, I_{DS} = 10\text{ A}$	-	6.2	6.8	m $\Omega$
		$V_{GS} = 3.9\text{ V}, I_{DS} = 6\text{ A}$	-	6.5	7.0	
		$V_{GS} = 2.5\text{ V}, I_{DS} = 4\text{ A}$	-	8.5	9.5	
<b>Diode Characteristics</b>						
$V_{SD}^a$	Diode Forward Voltage	$I_{SD} = 10\text{ A}, V_{GS} = 0\text{ V}$	-	-	1.3	V
<b>Dyna10mic Characteristics<sup>b</sup></b>						
$C_{iss}$	Input Capacitance	$V_{GS} = 0\text{ V}, V_{DS} = 7.5\text{ V}$ Frequency = 1 MHz	-	1980	-	pF
$C_{oss}$	Output Capacitance		-	425	-	
$C_{rss}$	Reverse Transfer Capacitance		-	391	-	
$t_d(on)$	Turn-on Delay Time	$V_{DS} = 7.5\text{ V}, V_{GEN} = 10\text{ V},$ $R_G = 4.5\text{ }\Omega, R_L = 0.75\text{ }\Omega,$ $I_{DS} = 10\text{ A}$	-	1.0	-	uS
$t_r$	Turn-on Rise Time		-	2.2	-	
$t_d(off)$	Turn-off Delay Time		-	6.3	-	
$t_f$	Turn-off Fall Time		-	3.4	-	
<b>Gate Charge Characteristics<sup>b</sup></b>						
$Q_g$	Total Gate Charge	$V_{GS} = 4.5\text{ V}, V_{DS} = 7.5\text{ V},$ $I_{DS} = 10\text{ A}$	-	38	-	nC
$Q_{gs}$	Gate-Source Charge		-	5	-	
$Q_{gd}$	Gate-Drain Charge		-	7.4	-	

Notes :

a : Pulse test ; pulse width  $\leq 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$

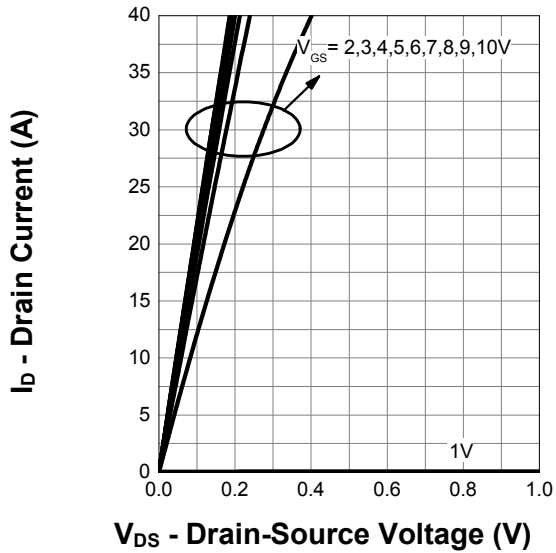
b : Guaranteed by design, not subject to production testing

## 7. Typical Characteristics

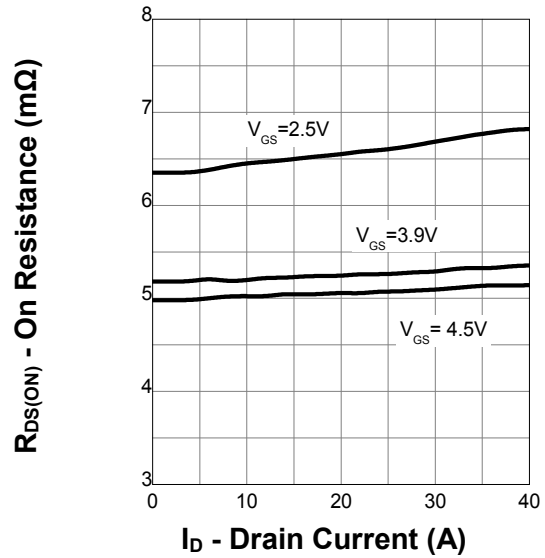


## 7. Typical Characteristics (cont.)

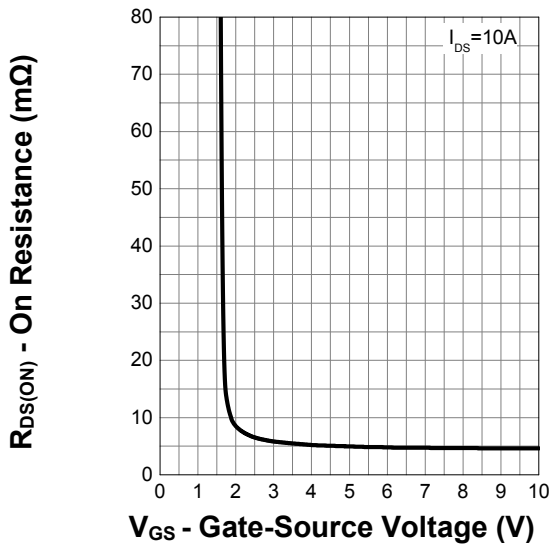
Output Characteristics



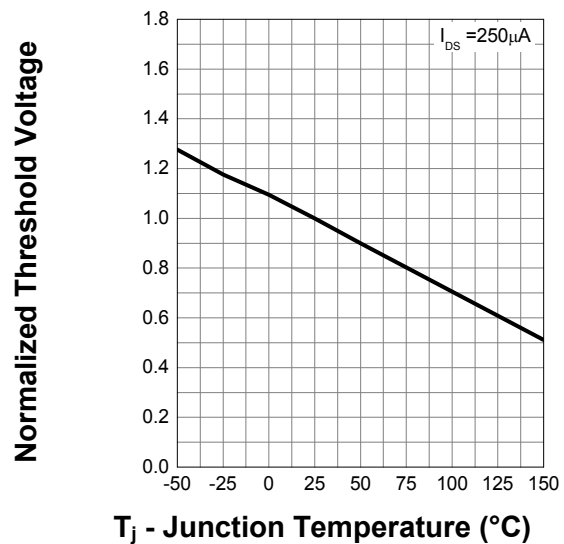
On Resistance



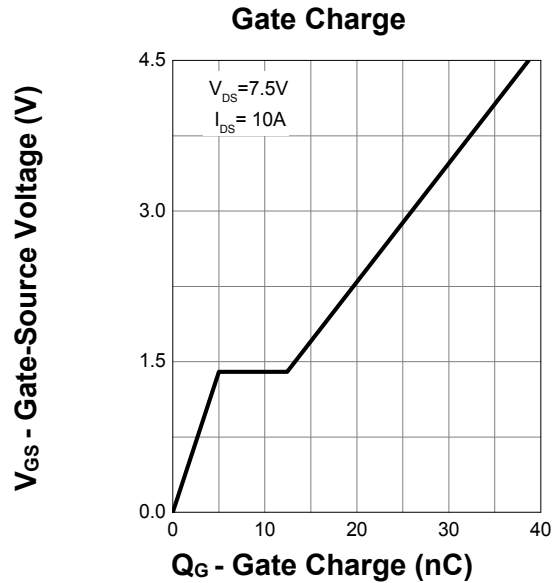
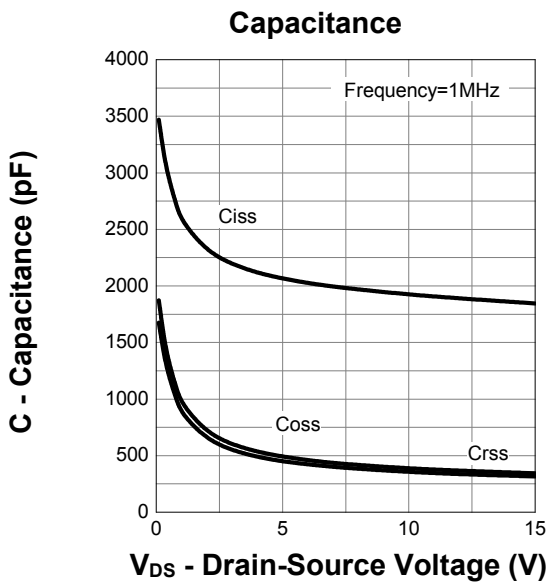
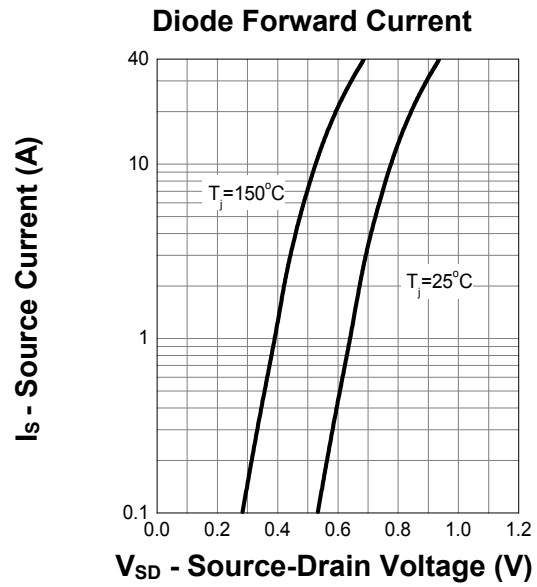
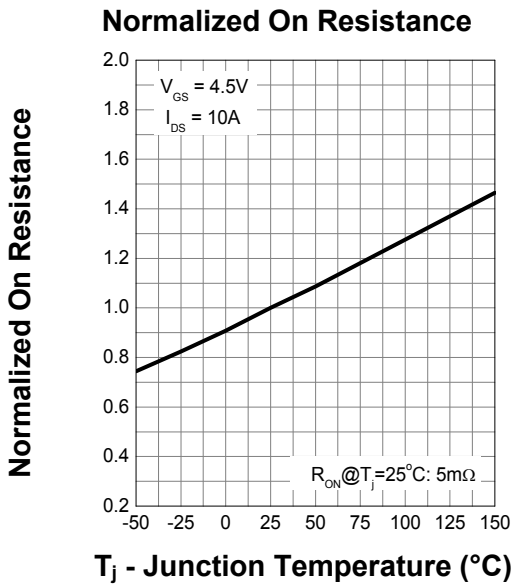
Transfer Characteristics



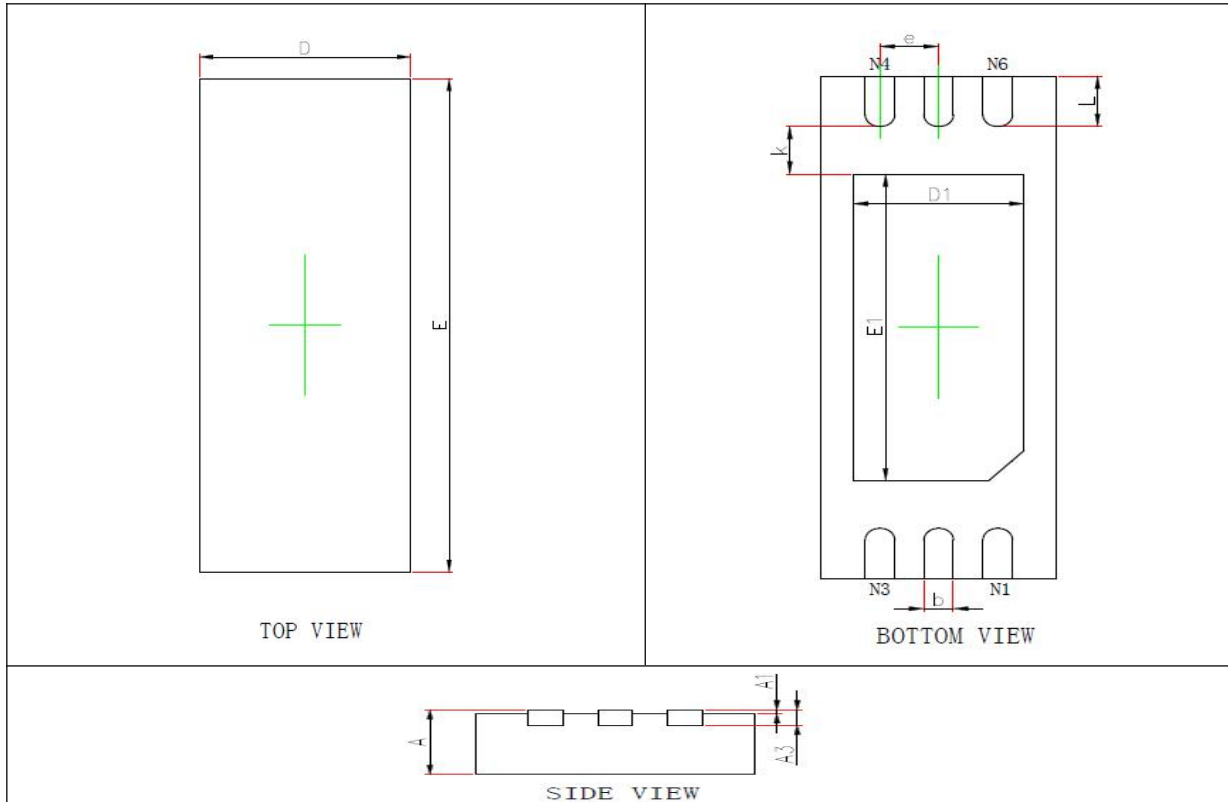
Normalized Threshold Voltage



## 7. Typical Characteristics (cont.)



## 8. Package Dimensions

**DFN2x5 - 6L Package**


PKG	DFN2*5-6L		
SYMBOL	MIN	TYP	MAX
A	0.70	0.75	0.90
A1	0.00	0.02	0.05
A3	0.203REF		
D	1.924	2.00	2.076
E	4.924	5.00	5.076
D1	1.35	1.30	1.55
E1	2.95	3.00	3.15
L	0.424	0.45	0.576
k	0.200		
b	0.2		0.3
e	0.5TYP		