

Dual N-Channel Enhancement Mode MOSFET

1. Product Information

1.1 Features

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

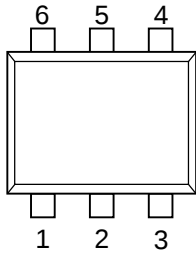
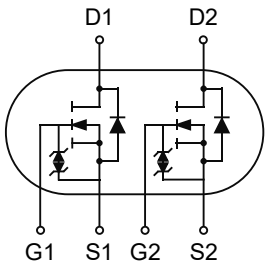
1.2 Applications

- ☒ Portable appliances
- ☒ Battery management

1.3 Quick reference

- ☒ $BV \geq 20V$
- ☒ $R_{DS(ON)} \leq 300m\Omega @ V_{GS} = 4.5V$
- ☒ $P_{tot} \leq 0.41W$
- ☒ $R_{DS(ON)} \leq 400m\Omega @ V_{GS} = 2.5V$
- ☒ $I_D \leq 0.9A$
- ☒ $R_{DS(ON)} \leq 572m\Omega @ V_{GS} = 1.8V$

2. Pin Description

Pin	Description	Simplified Outline	Symbol
1	Source(S1)	 Top View SOT-563	
2	Gate(G1)		
3	Drain(D2)		
4	Source(S2)		
5	Gate(G2)		
6	Drain(D1)		

3. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DS}	Drain-Source Voltage	$T_A=25^{\circ}\text{C}$	-	20	V
V_{GS}	Gate-Source Voltage	$T_A=25^{\circ}\text{C}$	-	± 10	V
I_D^*	Drain Current (DC)	$T_A=25^{\circ}\text{C}, V_{GS}=4.5\text{V}$	-	0.9	A
I_D^*	Drain Current (DC)	$T_A=100^{\circ}\text{C}, V_{GS}=4.5\text{V}$	-	0.41	A
$I_{DM}^{*,**,***}$	Drain Current (Pulsed)	$T_A=25^{\circ}\text{C}, V_{GS}=4.5\text{V}$	-	3.2	A
P_{tot}^*	Total Power Dissipation	$T_A=25^{\circ}\text{C}$	-	0.41	W
T_{stg}	Storage Temperature		-55	150	$^{\circ}\text{C}$
T_J	Junction Temperature		-	150	$^{\circ}\text{C}$
I_S	Diode Forward Current	$T_A=25^{\circ}\text{C}$	-	0.9	A
$R_{\theta JA}^*$	Thermal Resistance-Junction to Ambient		-	300	$^{\circ}\text{C/W}$

Notes:

- * Surface Mounted on 1 in² pad area, $t \leq 10$ sec
- ** Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$
- *** Limited by bonding wire

4. Marking Information

Product Name	Marking
KJ3134K	.34K

5. Ordering Code

Product Name	Package	Reel Size	Tape width	Quantity	Note
KJ3134K	SOT-563	-	-		

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} =0V, I _{DS} =250μA	20	-	-	V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	0.5	-	1.0	V
I _{DSS}	Drain Leakage Current	V _{DS} =16V, V _{GS} =0V	-	-	1	uA
I _{GSS}	Gate Leakage Current	V _{GS} =±10V, V _{DS} =0V	-	-	±10	uA
R _{DS(ON)} ^a	On-State Resistance	V _{GS} =4.5V, I _{DS} =0.5A	-	250	300	mΩ
		V _{GS} =2.5V, I _{DS} =0.3A	-	320	400	
		V _{GS} =1.8V, I _{DS} =0.1A	-	440	572	
Diode Characteristics						
V _{SD} ^a	Diode Forward Voltage	I _{SD} =0.5A, V _{GS} =0V	-	-	1.2	V
Dynamic Characteristics ^b						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =10V Frequency=1MHz	-	100	-	pF
C _{oss}	Output Capacitance		-	47	-	
C _{rss}	Reverse Transfer Capacitance		-	38	-	
t _{d(on)}	Turn-on Delay Time	V _{DS} =10V, V _{GEN} =4.5V, R _G =3.9Ω, R _L =20Ω, I _{DS} =0.5A	-	234	-	ns
t _r	Turn-on Rise Time		-	511	-	
t _{d(off)}	Turn-off Delay Time		-	1046	-	
t _f	Turn-off Fall Time		-	1648	-	
Gate Charge Characteristics ^b						
Q _g	Total Gate Charge	V _{GS} =10V, V _{DS} =4.5V, I _{DS} =0.5A	-	1.0	-	nC
Q _{gs}	Gate-Source Charge		-	0.14	-	
Q _{gd}	Gate-Drain Charge		-	0.16	-	

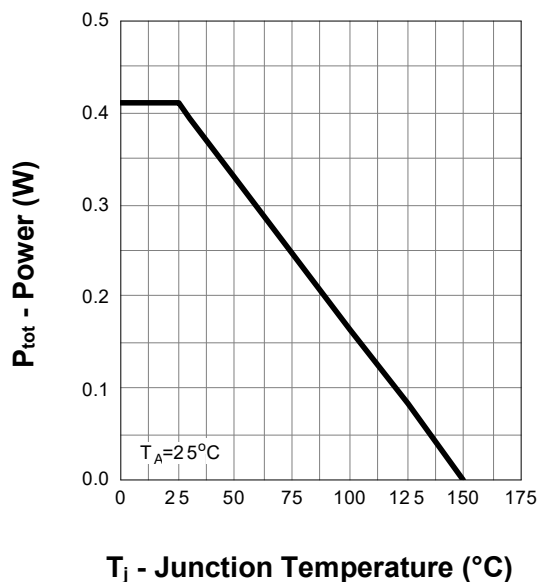
Notes:

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

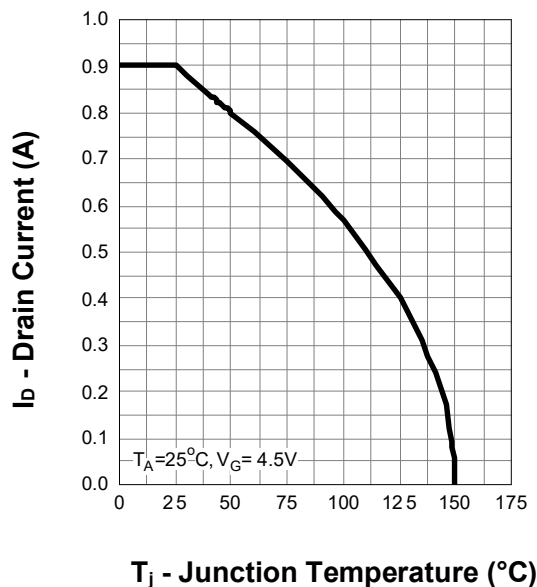
b: Guaranteed by design, not subject to production testing

7. Typical Characteristics

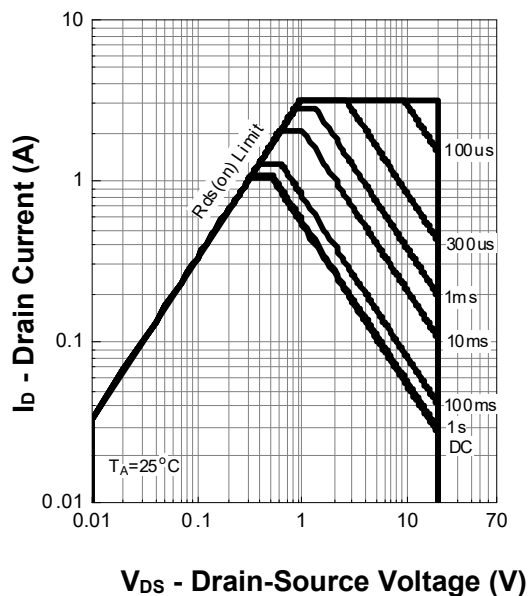
Power Capability



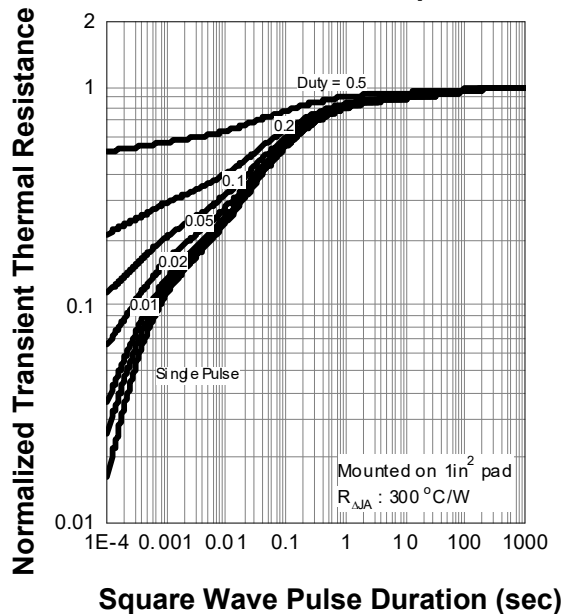
Current Capability



Safe Operation Area

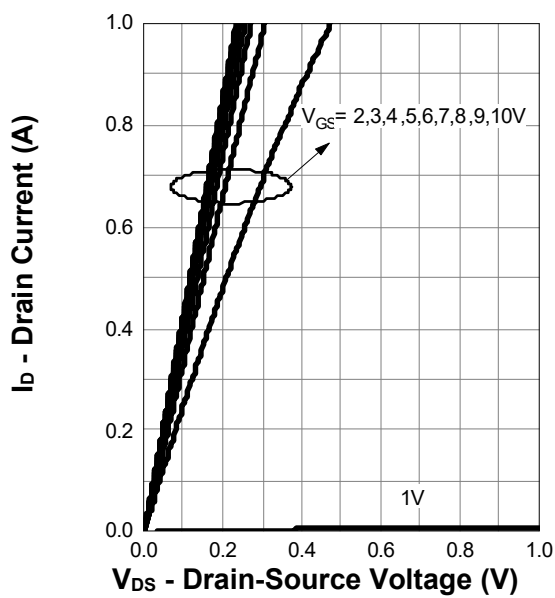


Transient Thermal Impedance

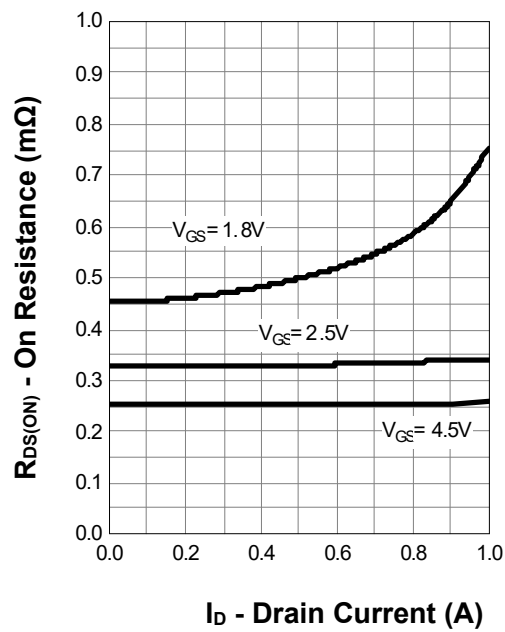


7. Typical Characteristics (cont.)

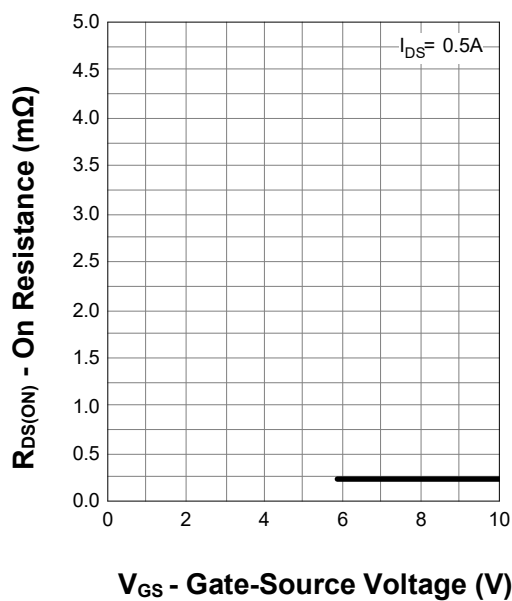
Output Characteristics



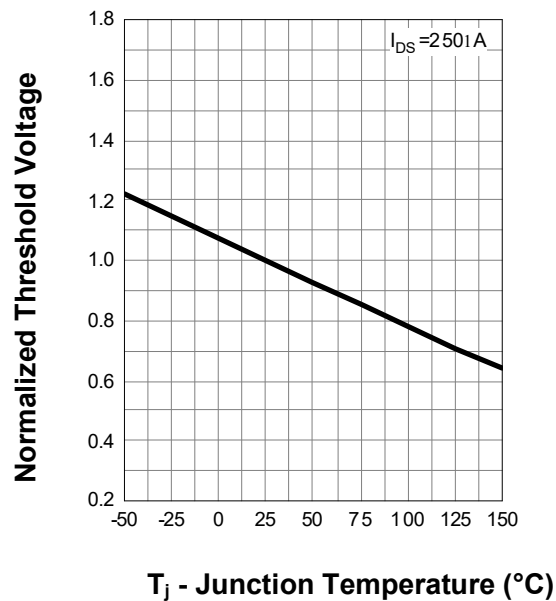
On Resistance



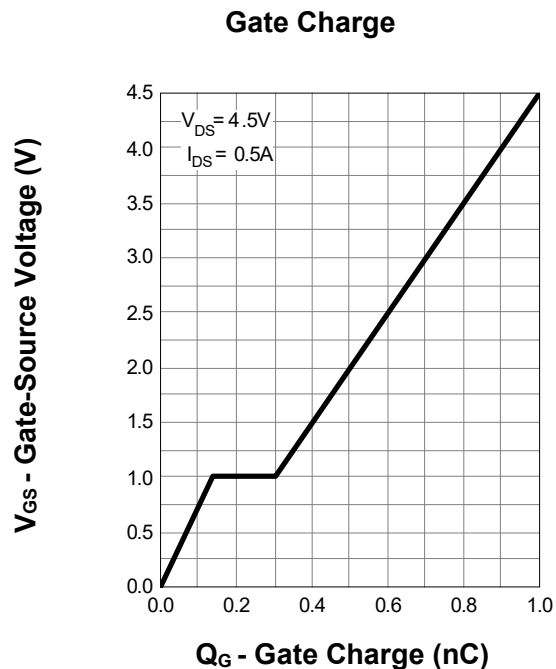
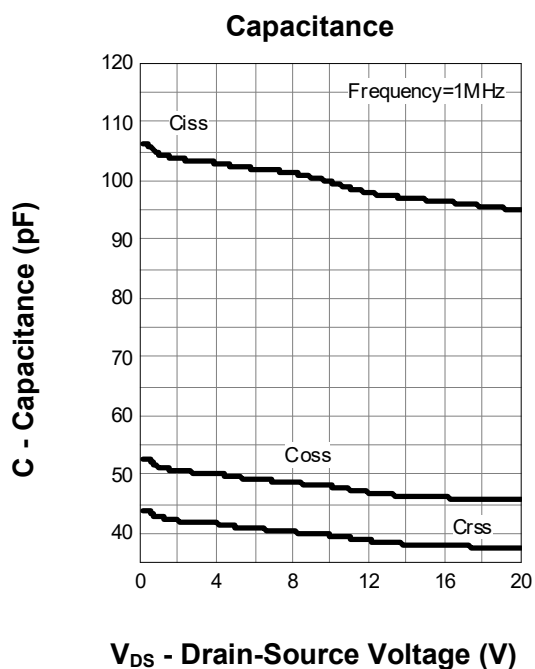
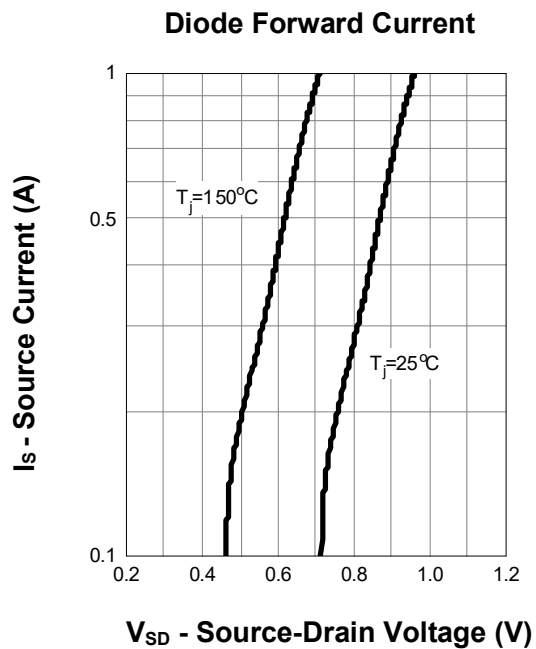
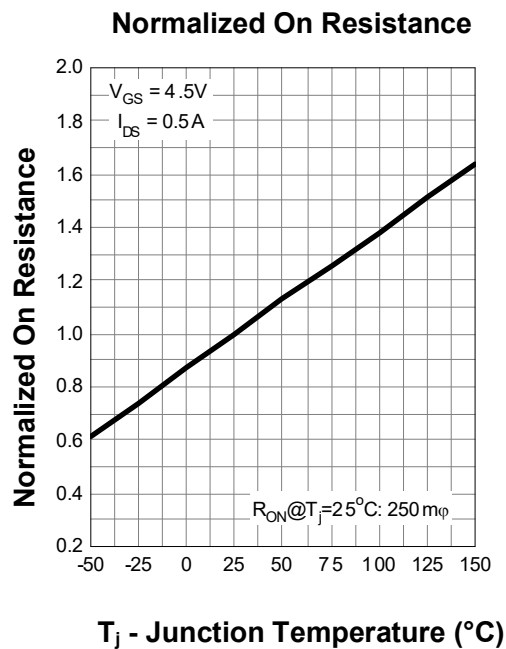
Transfer Characteristics



Normalized Threshold Voltage

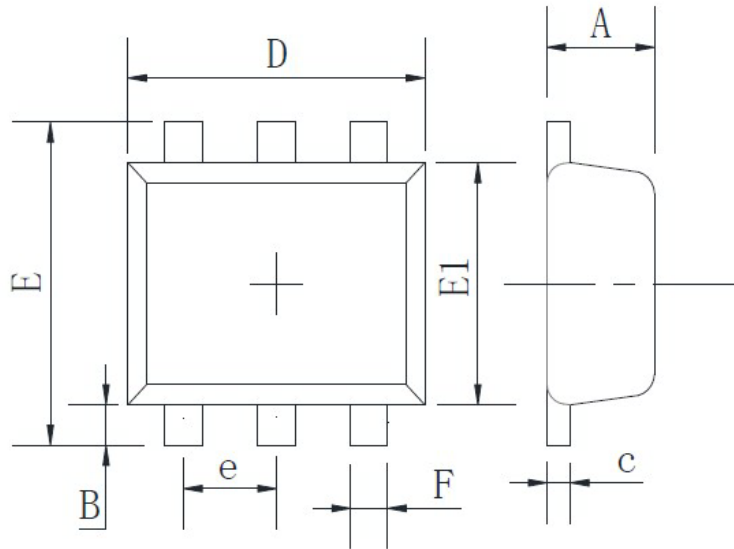


7. Typical Characteristics (cont.)



8. Package Dimensions

SOT-563 Package



Symbol	Min	Typ	Max
A	0.53	0.58	0.63
B	0.15	0.20	0.25
c	0.10	0.127	0.16
D	1.50	1.60	1.70
E	1.50	1.60	1.70
E1	1.10	1.20	1.30
e	0.40	0.50	0.60
F	0.15	0.20	0.25