

Dual P-Channel Enhancement Mode MOSFET

1. Product Information

1.1 Features

- ☒ Surface-mounted package
- ☒ Ultra-low on-resistance
- ☒ Low gate charge

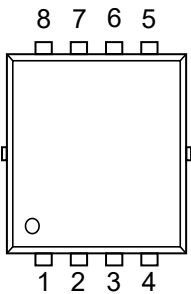
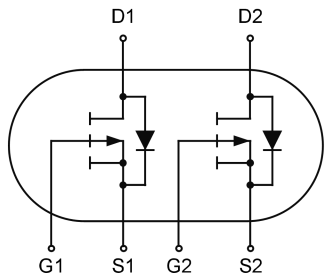
1.2 Applications

- ☒ PWM applications
- ☒ Load switch

1.3 Quick reference

- ☒ $BV \geq -30\text{ V}$
- ☒ $R_{DS(ON)} \leq 16\text{ m}\Omega @ V_{GS} = -10\text{ V}$
- ☒ $P_{tot} \leq 25\text{ W}$
- ☒ $R_{DS(ON)} \leq 30\text{ m}\Omega @ V_{GS} = -4.5\text{ V}$
- ☒ $I_D \leq -15\text{ A}$

2. Pin Description

Pin	Description	Simplified Outline	Symbol
1	Source (S2)		
2	Gate (G2)		
3	Source (S1)		
4	Gate (G1)		
5,6	Drain (D1)		
7,8	Drain (D2)		

Top View
PDFN3.3x3.3-8L

3. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DS}	Drain-Source Voltage	$T_A=25^{\circ}\text{C}$	-30	-	V
V_{GS}	Gate-Source Voltage	$T_A=25^{\circ}\text{C}$	-	± 20	V
I_D	Drain Current	$T_A=25^{\circ}\text{C}, V_{GS}=-10\text{ V}$	-	-15	A
		$T_A=70^{\circ}\text{C}, V_{GS}=-10\text{ V}$	-	-11	A
I_{DM}^*	Pulsed Source Current	$T_A=25^{\circ}\text{C}, V_{GS}=-10\text{ V}$	-	-60	A
P_{tot}	Total Power Dissipation	$T_A=25^{\circ}\text{C}$	-	25	W
T_J, T_{stg}	Operating Junction and Storage Temperature Range		-55	150	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient		-	62.5	$^{\circ}\text{C/W}$
$R_{\theta JC}$	Thermal Resistance-Junction to Case		-	5	

Notes:

* Surface mounted on 1 in² pad area, $t \leq 10$ sec.

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

*** Limited by bonding wire.

4. Marking Information

Product Name	Marking
KJ15P03QD	15P03D XXXX

5. Ordering Code

Product Name	Package	Reel size	Tape width	Quantity (pcs)
KJ15P03QD	PDFN 3.3x3.3-8L	13"	12 mm	5000

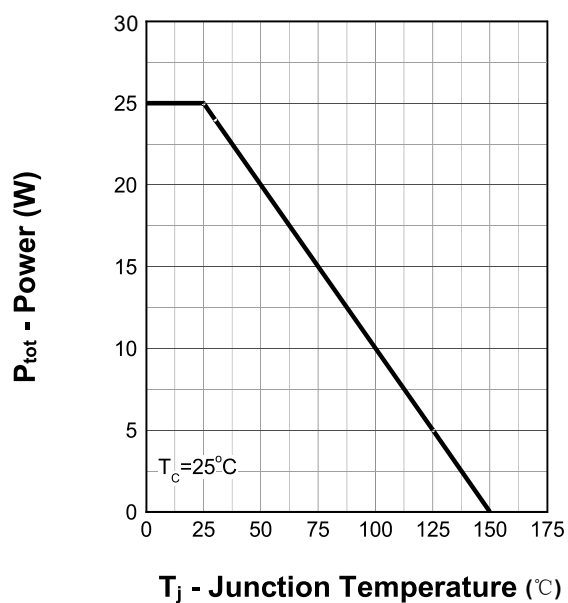
Note: KUAJIEXIN defines "Green" as lead-free (RoHS compliant) and halogen free (Br or Cl does not exceed 900 ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500 ppm by weight; Follow IEC 61249-2-21 and IPC/JEDEC J-STD-020C).

6. Electrical Characteristics (T_A=25°C unless otherwise noted)

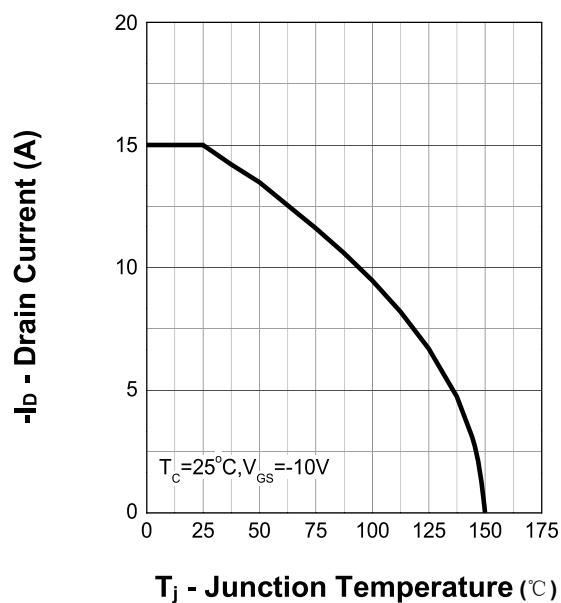
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0 V, I _{DS} =-250 μA	-30	-	-	V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250 μA	-1	-1.5	-2.5	V
I _{DSS}	Drain Leakage Current	V _{DS} =-30 V, V _{GS} =0 V	-	-	-1	μA
I _{GSS}	Gate Leakage Current	V _{GS} =±20 V, V _{DS} =0 V	-	-	±100	nA
R _{DS(ON)}	On-State Resistance	V _{GS} =-10 V, I _D =-15 A	-	18	20	mΩ
		V _{GS} =-4.5 V, I _D =-10 A	-	20	30	
g _{fs}	Forward transconductance	V _{GS} =-5 V, I _D =-15 A	-	19	-	S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-15 V, V _{GS} =-0 V, f=1 MHz	-	1040	-	pF
C _{oss}	Output Capacitance		-	180	-	
C _{rss}	Reverse Transfer Capacitance		-	125	-	
t _{d(on)}	Turn-on Delay Time	V _{DS} =-15 V, V _{GEN} =-10 V, R _{GEN} =1 Ω, I _D =-15 A	-	10	-	ns
t _r	Turn-on Rise Time		-	5.5	-	
t _{d(off)}	Turn-off Delay Time		-	26	-	
t _f	Turn-off Fall Time		-	9	-	
Gate Charge Characteristics						
Q _g	Total Gate Charge	V _{DS} =-15 V, V _{GS} =-10 V, I _D =-10 A	-	19	-	nC
Q _{gs}	Gate-Source Charge		-	9.6	-	
Q _{gd}	Gate-Drain Charge		-	3.6	-	
Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _{SD} =-5 A, V _{GS} =0 V	-	0.8	-1.2	V

7. Typical Characteristics

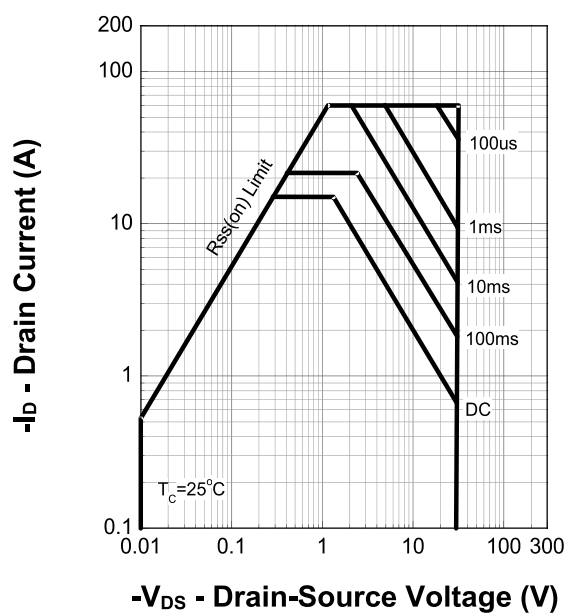
Power Capability



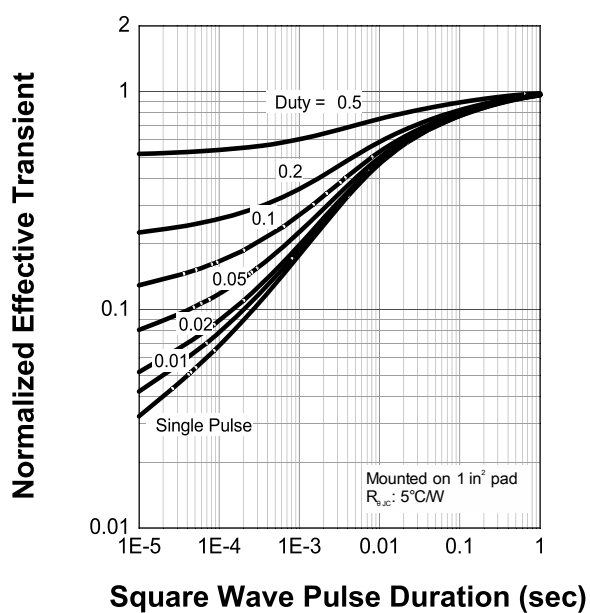
Current Capability



Safe Operation Area

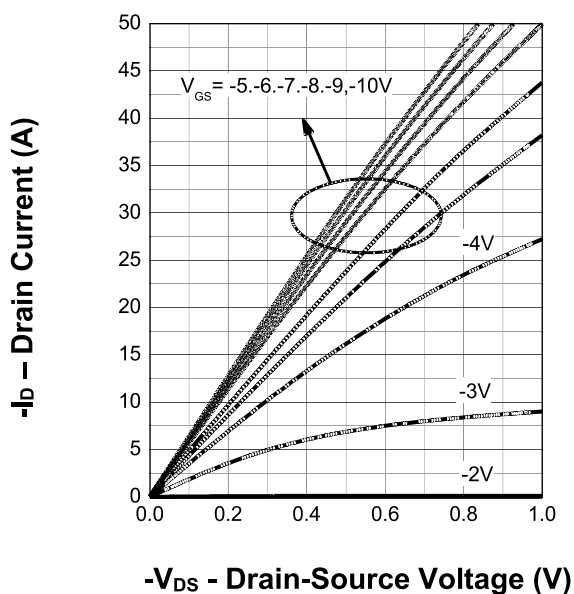


Thermal Transient Impedance

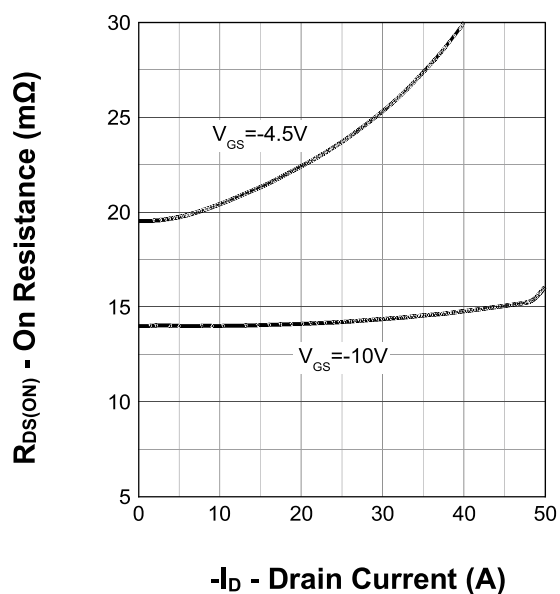


7. Typical Characteristics (cont.)

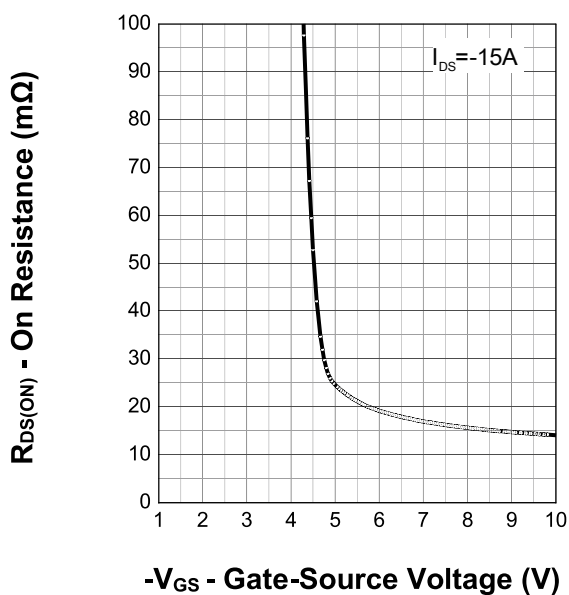
Output Characteristics



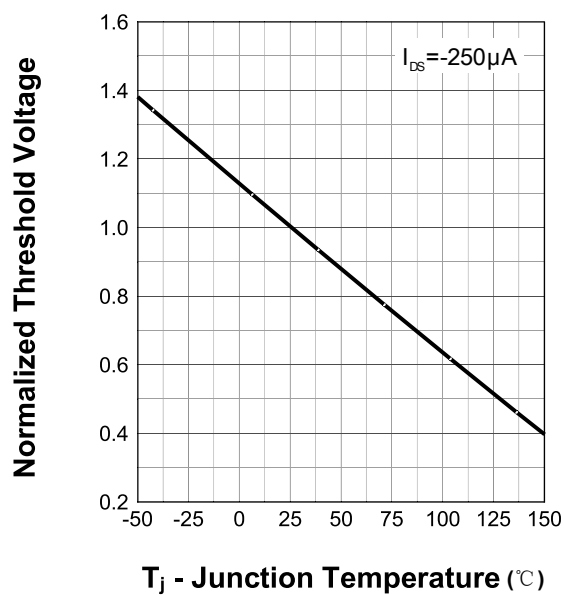
Drain-Source On Resistance



Transfer Characteristics

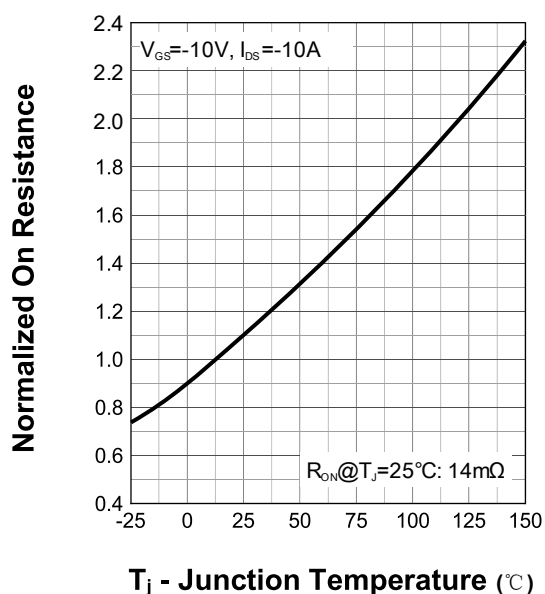


Gate Threshold Voltage

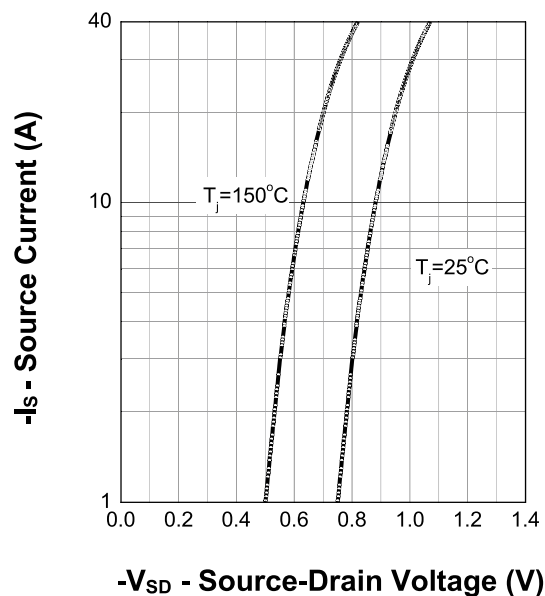


7. Typical Characteristics (cont.)

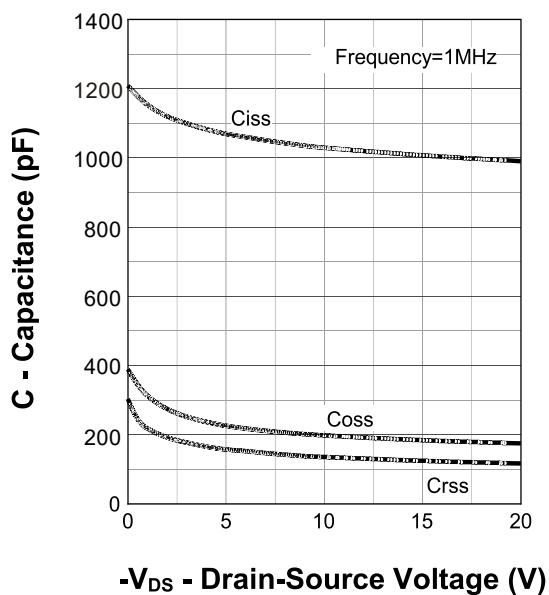
Drain-Source On Resistance



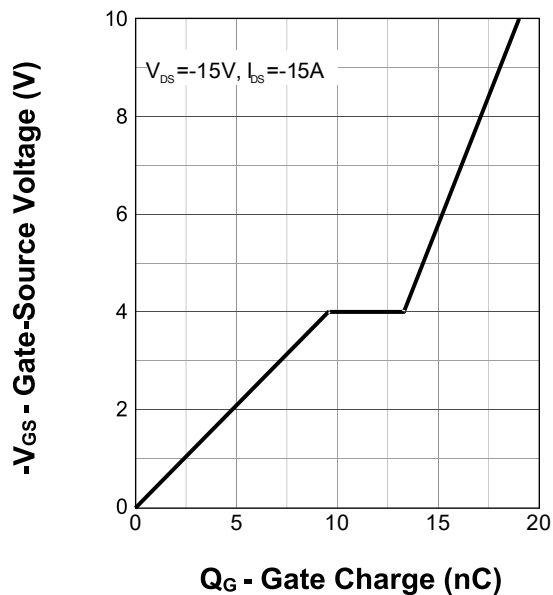
Body Diode Characteristics



Capacitance

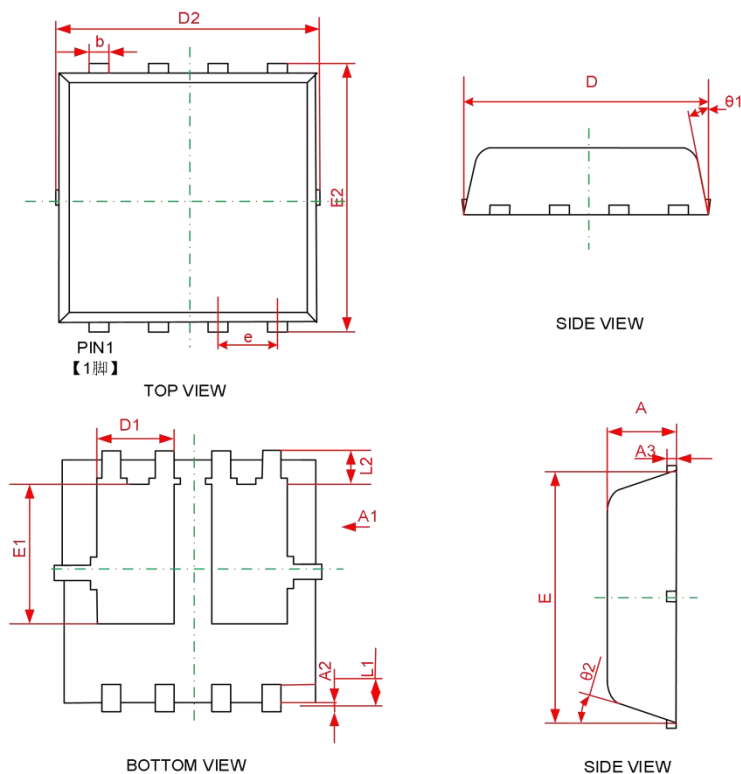


Gate Charge



8. Package Dimensions

PDFN 3.3x3.3-8L Package



Symbol	Dimensions in Millimeters	
	Min	Max
A	0.750	0.850
A1	0.000	0.050
A2	0.100	0.200
A3	0.152 REF.	
b	0.200	0.400
D	3.050	3.250
D1	0.935	1.135
D2	3.200	3.400
E	2.900	3.100
E1	1.635	1.835
E2	3.150	3.350
e	0.625	0.675
L1	0.350	0.450
L2	0.365	0.465
θ1	10°	12°
θ2	10°	12°