

N-Channel Enhancement Mode MOSFET

1. Product Information

1.1 Features

- ☒ Advanced trench cell design
- ☒ Low Thermal Resistance

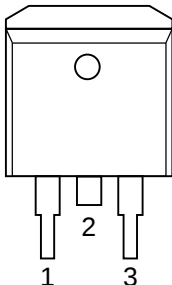
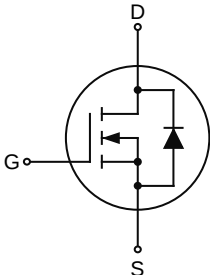
1.2 Applications

- ☒ BMS appliances
- ☒ High power inverter system
- ☒ Power appliances

1.3 Quick reference

- ☒ $BV \geq 80\text{ V}$
- ☒ $R_{DS(ON)} \leq 6.0\text{ m}\Omega @ V_{GS} = 10\text{ V}$
- ☒ $P_{tot} \leq 280\text{ W}$
- ☒ $I_D \leq 140\text{ A}$

2. Pin Description

Pin	Description	Simplified Outline	Symbol
1	Gate(G)	 Top View TO-263	
2	Drain(D)		
3	Source(S)		

3. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DS}	Drain-Source Voltage	$T_C=25^{\circ}\text{C}$	80	-	V
V_{GS}	Gate-Source Voltage	$T_C=25^{\circ}\text{C}$	-	± 20	V
$I_D^{*,***}$	Drain Current (DC)	$T_C=25^{\circ}\text{C}, V_{GS}=10\text{ V}$	-	140	A
$I_{DM}^{*,**,***}$	Drain Current (Pulsed)	$T_C=25^{\circ}\text{C}, V_{GS}=10\text{ V}$	-	560	A
P_{tot}^*	Drain power dissipation	$T_C=25^{\circ}\text{C}$	-	220	W
T_J, T_{stg}	Operating Junction and Storage Temperature Range		-55	150	$^{\circ}\text{C}$
I_S	Continuous-Source Current	$T_C=25^{\circ}\text{C}$	-	140	A
E_{AS}^*	Single Pulsed Avalanche Energy	$V_{DD}=50\text{ V}, L=0.5\text{ mHR}_G=1\ \Omega$	-	1450	mJ
$R_{\theta JC}^*$	Thermal Resistance- Junction to Case		-	0.63	$^{\circ}\text{C}/\text{W}$

Notes:

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

4. Marking Information

Product Name	Marking
KJ065N08D	065N08 YWWXXX YWWXXX: Date Code

5. Ordering Code

Product Name	Package	Reel Size	Tape width	Quantity	Note
KJ065N08D	TO-263	13"	24 mm	800	

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)

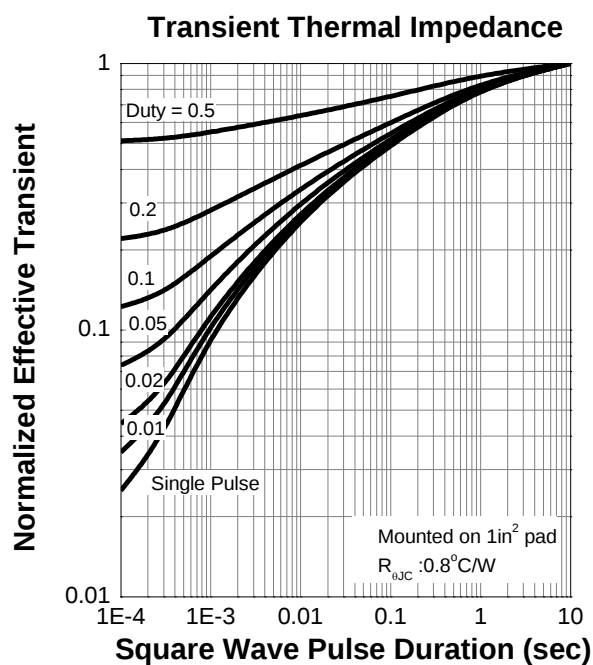
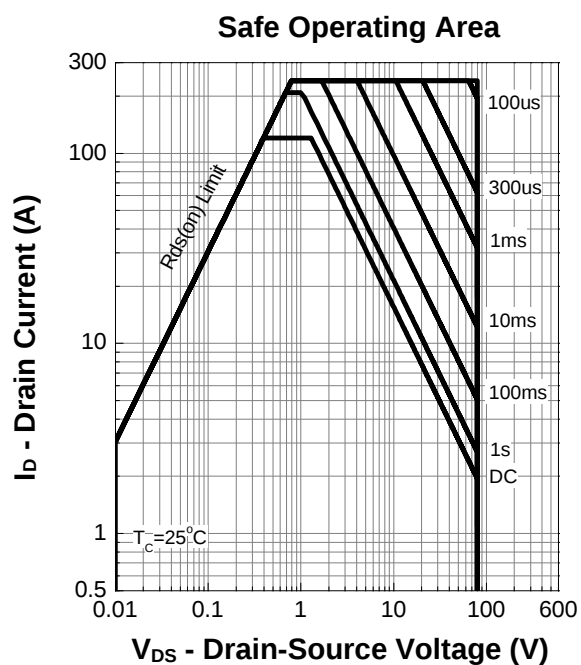
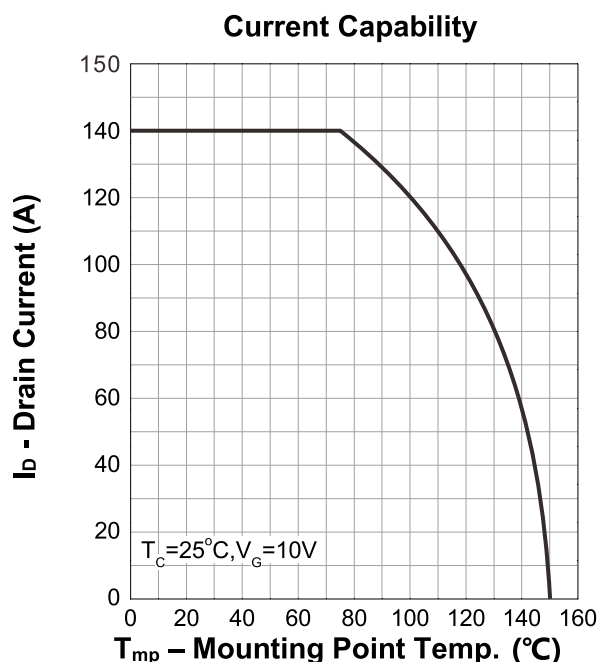
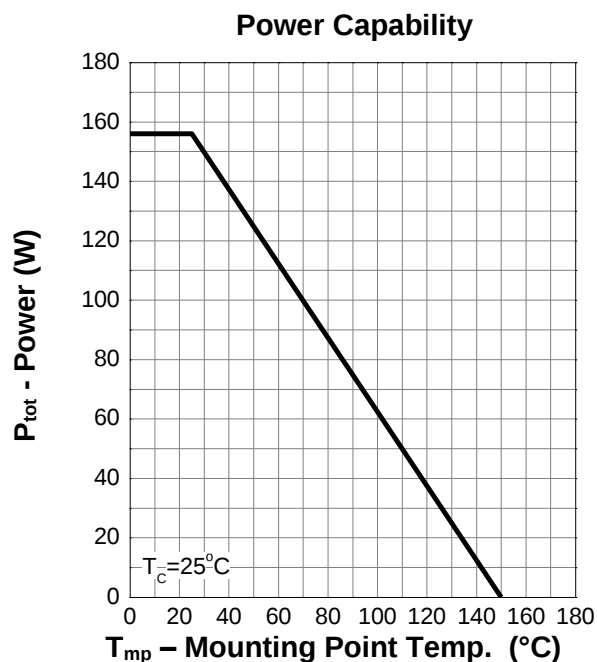
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0 V, I _{DS} =250 μA	80	-	-	V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250 μA	2	-	4	V
I _{DSS}	Drain Leakage Current	V _{DS} =64 V, V _{GS} =0 V	-	-	1	μA
		T _J = 85°C	-	-	30	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} =35 A	-	5.5	6.0	mΩ
Diode Characteristics						
V _{SD} ^a	Diode Forward Voltage	I _{SD} =30 A, V _{GS} =0 V	-	-	1.2	V
t _{rr}	Reverse Recovery Time	I _{DS} =30 A, V _{GS} =0 V, dI _{SD} /dt=100 A/μs	-	65	-	ns
Q _{rr}	Reverse Recovery Charge		-	83	-	nC
Dynamic Characteristics ^b						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =25V, Frequency=1MHz	-	8000	-	pF
C _{oss}	Output Capacitance		-	450	-	
C _{rss}	Reverse Transfer Capacitance		-	390	-	
t _{d(on)}	Turn-on Delay Time	V _{DS} =30 V, V _{GEN} =10 V, R _G =4.5 Ω, R _L =1.3 Ω, I _{DS} =40 A	-	24	-	ns
t _r	Turn-on Rise Time		-	41	-	
t _{d(off)}	Turn-off Delay Time		-	75	-	
t _f	Turn-off Fall Time		-	25	-	
Gate Charge Characteristics ^b						
Q _g	Total Gate Charge	V _{DS} =40 V, V _{GS} =10 V, I _{DS} =20 A	-	159	-	nC
Q _{gs}	Gate-Source Charge		-	30	-	
Q _{gd}	Gate-Drain Charge		-	50	-	

Notes:

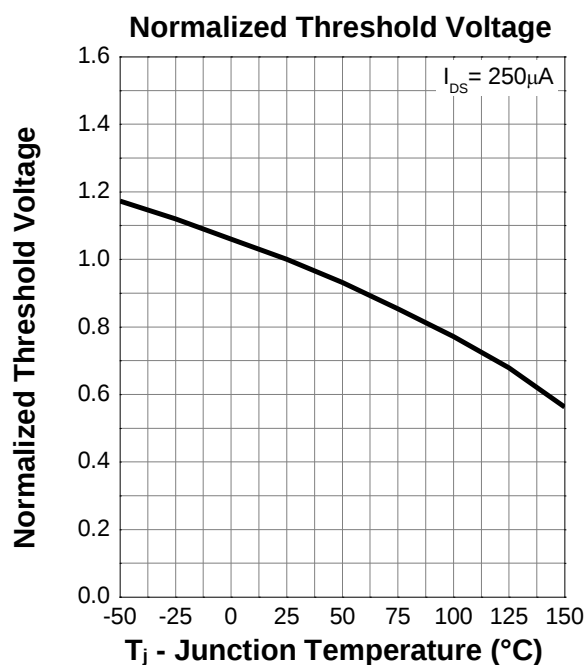
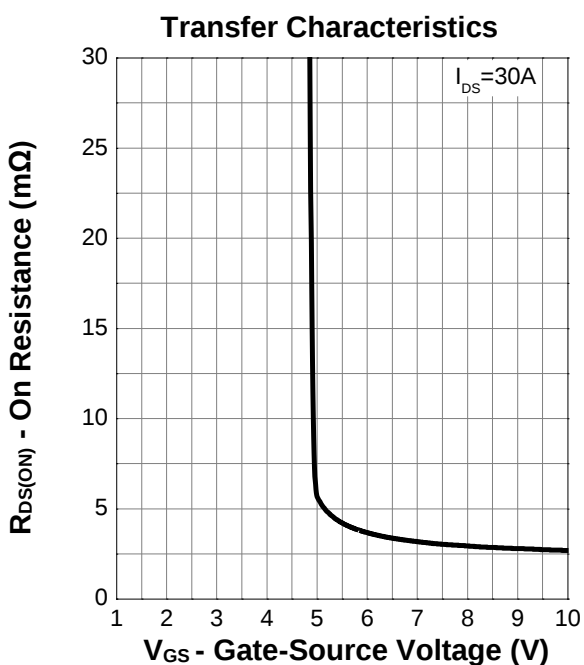
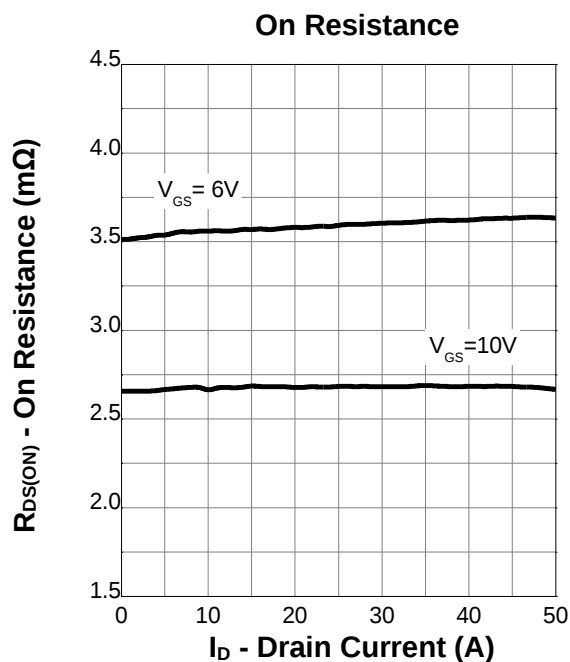
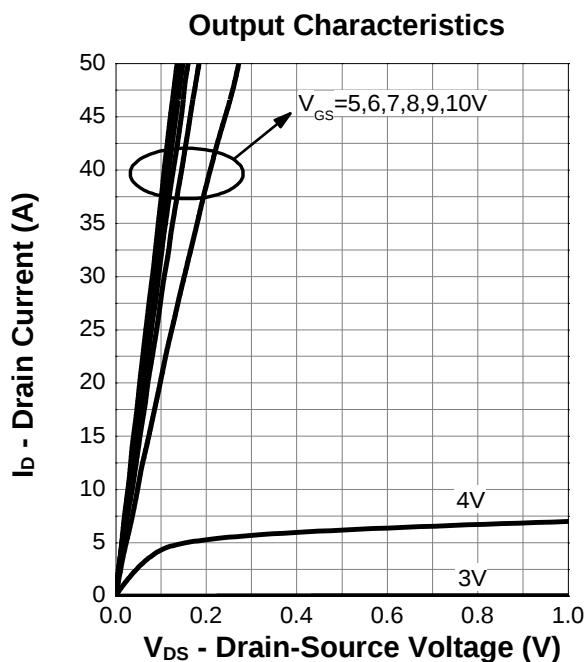
a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.

b. Guaranteed by design, not subject to production testing.

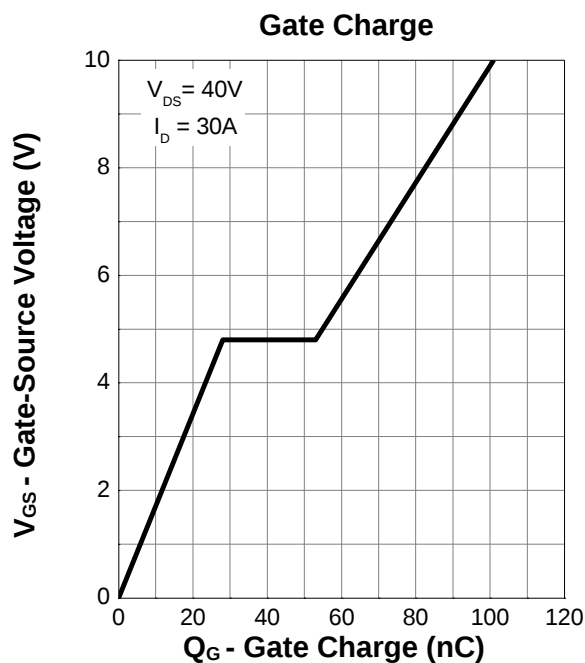
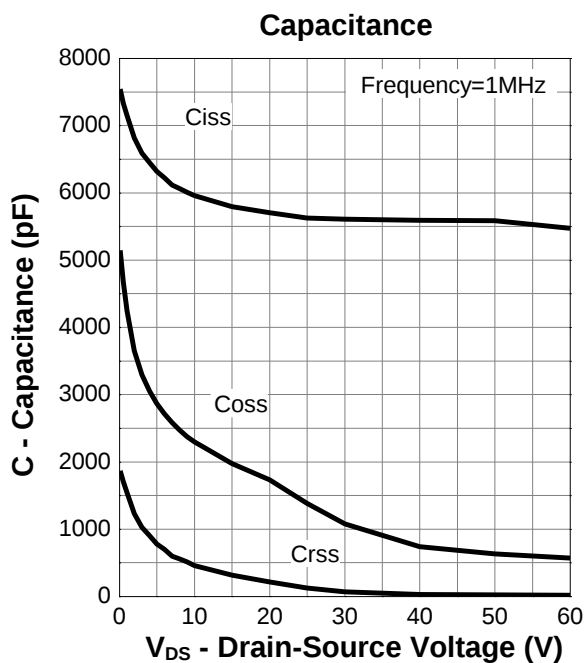
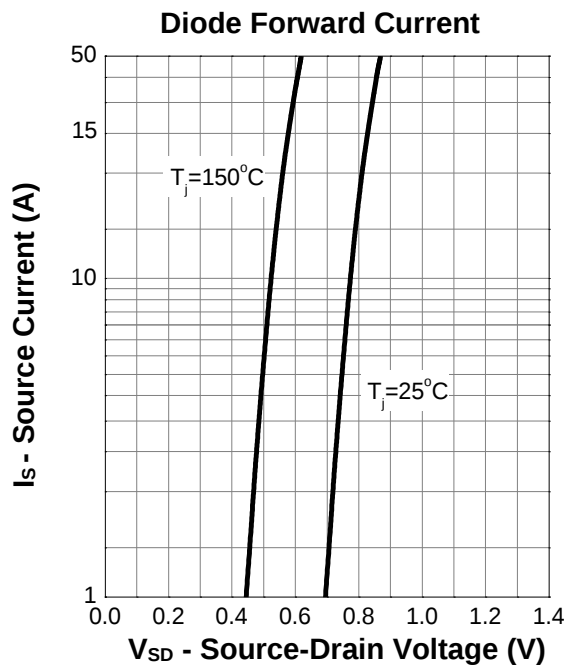
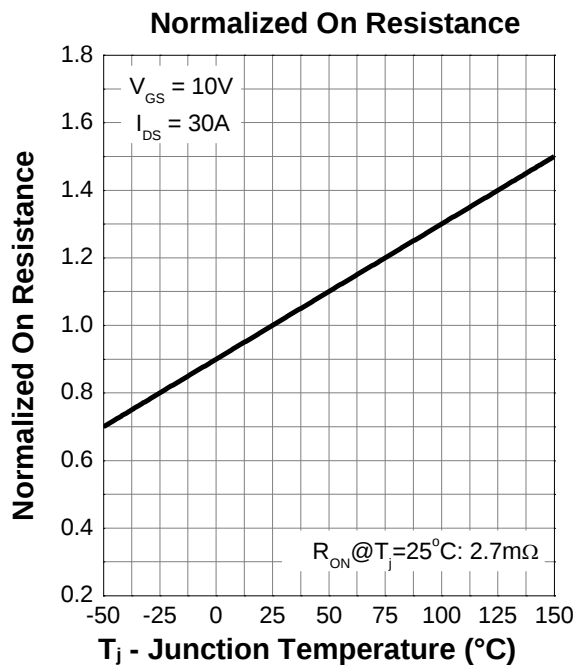
7. Typical Characteristics



7. Typical Characteristics (cont.)

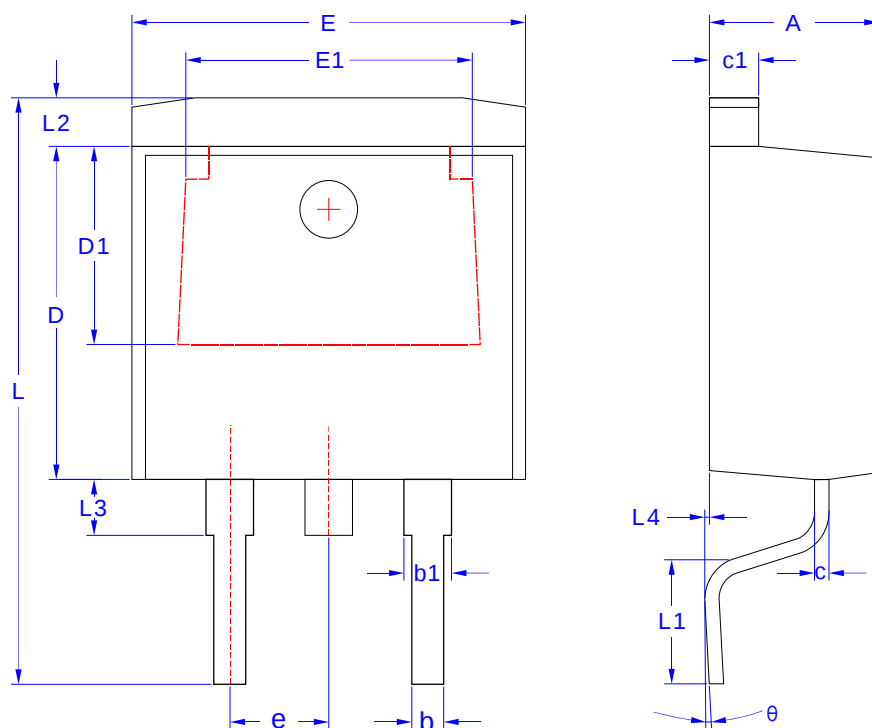


7. Typical Characteristics (cont.)



8. Package Dimensions

TO-263 Package



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	4.40	4.80
b	0.76	1.00
b1	1.17	1.47
c	0.36	0.50
c1	1.25	1.45
D	8.60	9.00
D1	5.10 REF	
E	9.80	10.40
E1	7.40 REF	
e	2.54 REF	
L	14.6	15.8
L1	2.29	2.79
L2	1.27 REF	
L3	1.50 REF	
L4	0.00	0.25
θ	0° ± 3°	