

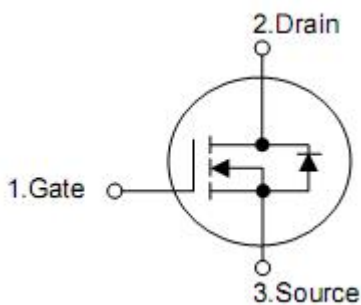
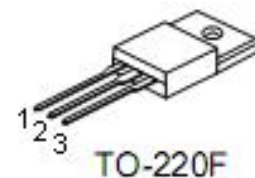
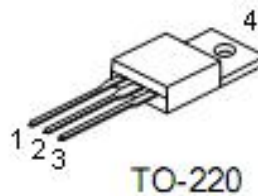
1. Product Features

- RoHS Compliant
- $R_{DS(ON),typ.}=9.6\Omega@V_{GS}=10V$
- Low Gate Charge Minimize Switching Loss
- Fast Recovery Body Diode

2. Applications

- Adaptor
- Charger
- SMPS Standby Power

3. Pin configuration



Pin	Function
1	Gate
2	Drain
3	Source
4	Drain

4. Ordering Information

Part Number	Package	Brand
KND41100A	TO-252	KIA
KNP41100A	TO-220	KIA
KNF41100A	TO-220F	KIA

5. Absolute maximum ratings

(T_c= 25 °C , unless otherwise specified)

Symbol	Parameter	Ratings	Unit
V _{DSS}	Drain-to-Source Voltage T _J =25 °C	1000	V
V _{GSS}	Gate-to-Source Voltage	±30	
I _D	Continuous Drain Current @ T _c =25 °C	2.0	A
I _{DM}	Pulsed Drain Current at V _{GS} =10V Limited by T _{Jmax}	8.0	
E _{AS}	Single Pulse Avalanche Energy(V _{DD} =50V)	80	mJ
P _D	Maximum Power Dissipation	60	W
T _{Jmax}	Max. Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55 to 150	

6. Thermal characteristics

Symbol	Parameter	Ratings	Unit
R _{θJC}	Thermal Resistance, Junction-to-Case	2.08	°C /W
R _{θJA}	Thermal Resistance, Junction-to-Ambient	75	

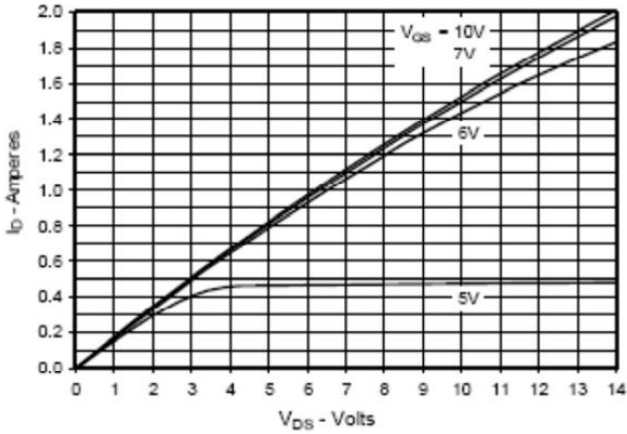
7. Electrical characteristics

(T_J=25°C, unless otherwise specified)

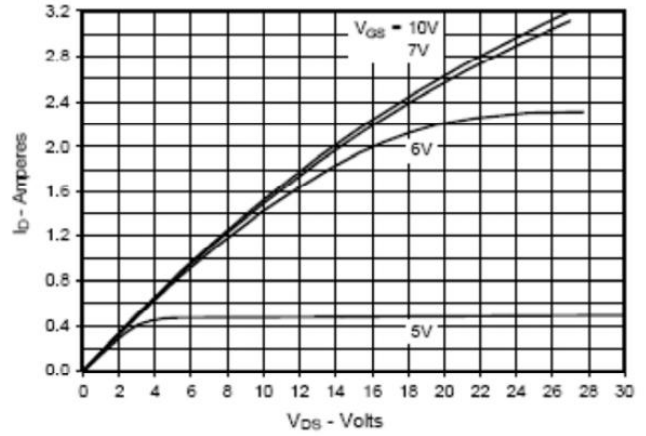
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-to-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	1000	--	--	V
I _{DSS}	Drain-to-Source Leakage Current	V _{DS} =1000V, V _{GS} =0V	--	--	1	uA
I _{GSS}	Gate-to-Source Leakage Current	V _{GS} =±30V, V _{DS} =0V	-100	--	100	nA
R _{DS(ON)}	Drain-to-Source ON Resistance	V _{GS} =10V, I _D =1.0A		9.6	12	Ω
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	2.0	--	4.0	V
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =25V, f=1.0MHZ	--	370	--	pF
C _{rss}	Reverse Transfer Capacitance		--	4.0	--	
C _{oss}	Output Capacitance		--	40	--	
Q _g	Total Gate Charge	V _{DD} =500V, I _D =2.0A, V _{GS} =10V	--	15	--	nC
Q _{gs}	Gate-to-Source Charge		--	2.1	--	
Q _{gd}	Gate-to-Drain (Miller) Charge		--	6.0	--	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =500V, I _D =2.0A, R _G =12Ω V _{GS} = 10V (Resistive Load)	--	8.0	--	nS
t _{rise}	Rise Time		--	6.0	--	
t _{d(OFF)}	Turn-Off Delay Time		--	36	--	
t _{fall}	Fall Time		--	15	--	
I _{SD}	Continuous Source Current		--	--	2	A
V _{SD}	Forward Voltage	I _S =2.0A, V _{GS} =0V	--	-	1.5	V
t _{rr}	Reverse recovery time	V _{GS} =0V, I _F =2.0A, diF/dt=-100A/μs	--	320	--	ns
Q _{rr}	Reverse recovery charge		--	1.0	--	uC

8. Test circuits and waveforms

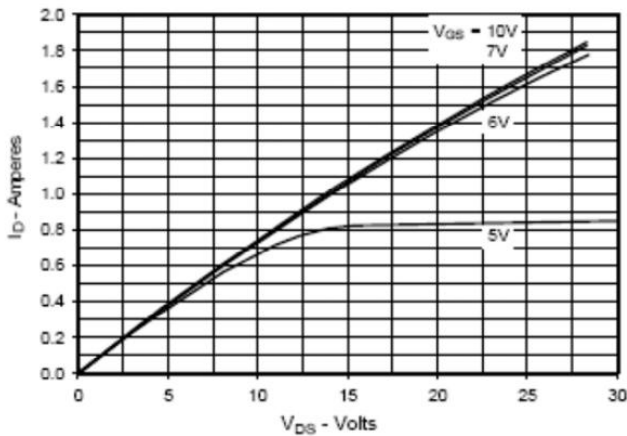
**Fig. 1. Output Characteristics
@ 25°C**



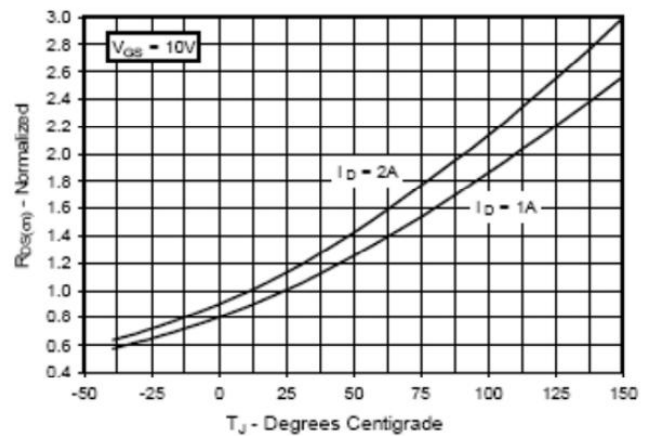
**Fig. 2. Extended Output Characteristics
@ 25°C**



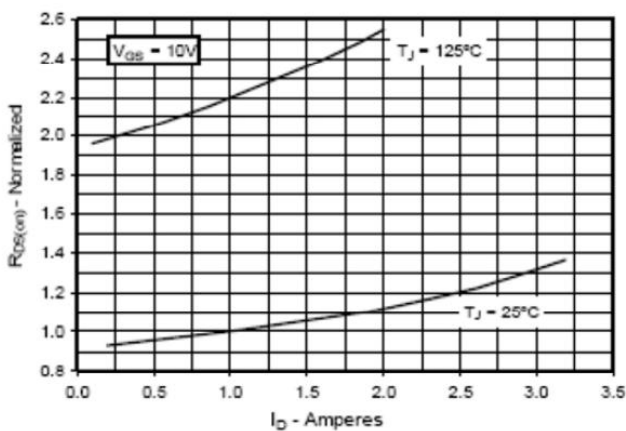
**Fig. 3. Output Characteristics
@ 125°C**



**Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 1A$ Value
vs. Junction Temperature**



**Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 1A$ Value
vs. Drain Current**



**Fig. 6. Maximum Drain Current vs.
Case Temperature**

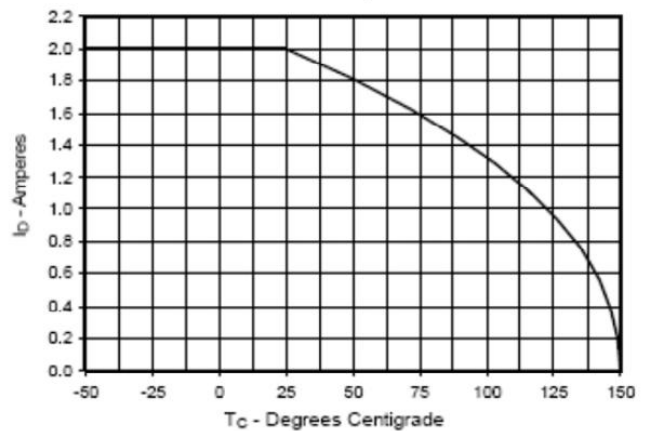


Fig. 7. Input Admittance

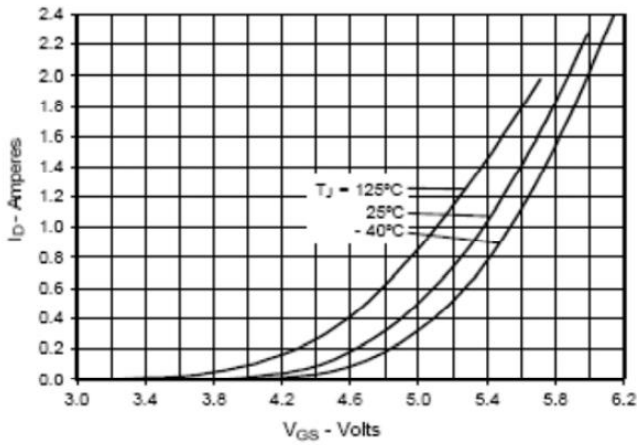


Fig. 8. Transconductance

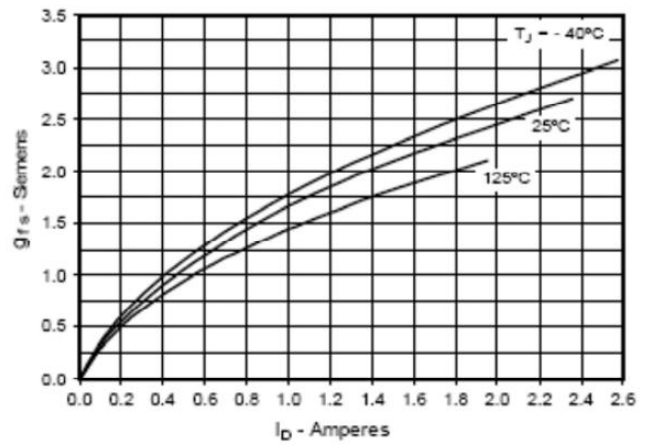


Fig. 9. Forward Voltage Drop of Intrinsic Diode

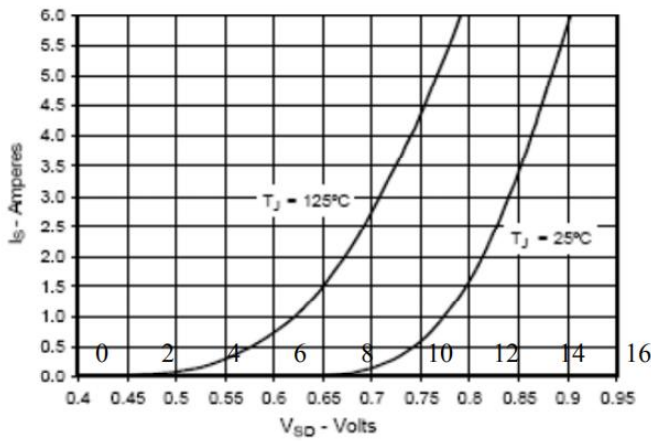


Fig. 10. Gate Charge

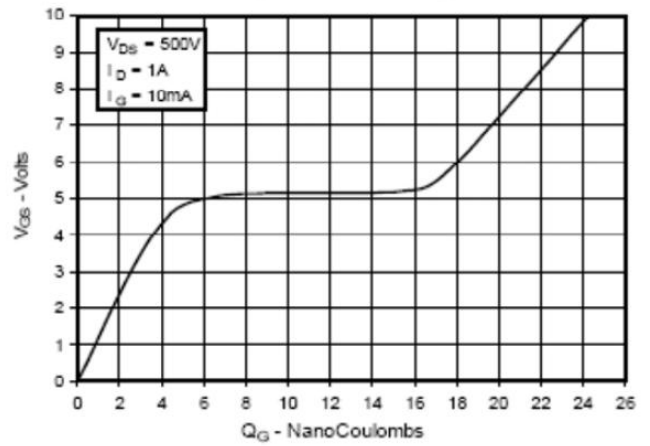


Fig. 11. Capacitance

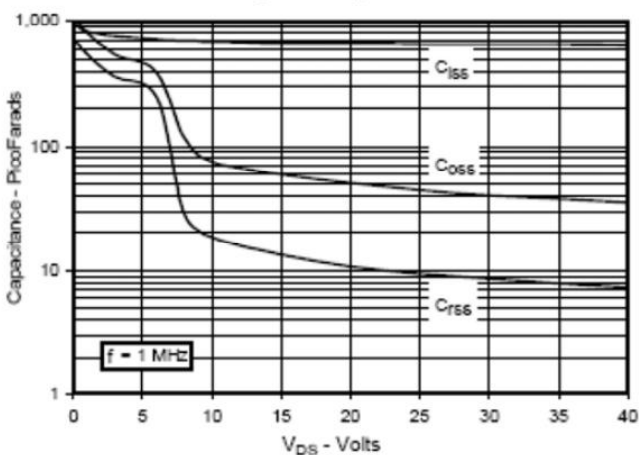
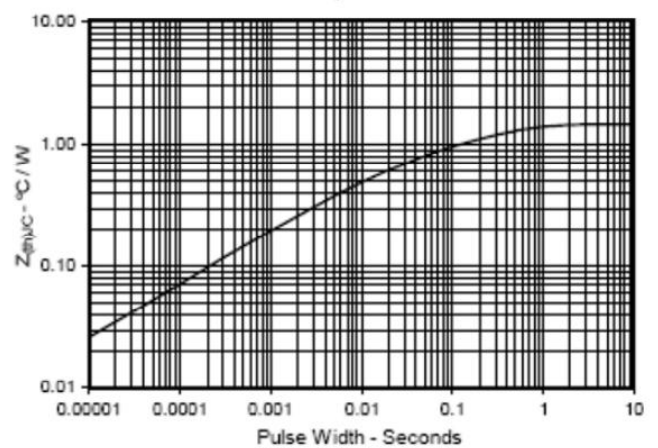


Fig. 12. Maximum Transient Thermal Impedance



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