

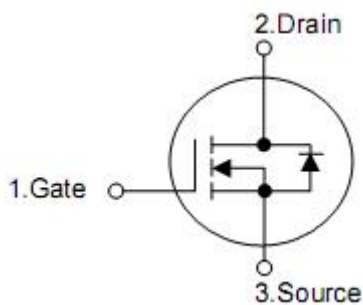
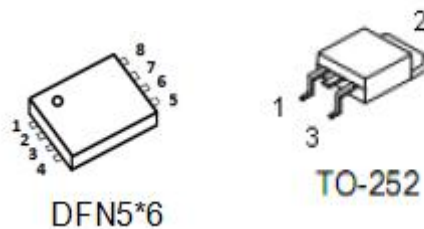
1. Features

KNX3403B is an N-channel enhancement mode power Mosfet field effect transistor which is produced using KIA's LVMosfet technology.the improved process and cell structure have been especially tailored to minimize on-state resistance,provide superior switching performance. This device is widely used in UPS,Power Management for Inverter Systems.

2. Features

- 85A, 30V, $R_{DS(on)}$ typ. = $4.5m\Omega$ (typ.)@ $V_{GS} = 10 V$
- Low gate charge
- Low Crss
- Fast switching
- Improved dv/dt capability

3. Pin configuration



Pin DFN5*6	Pin TO-252	Function
4	1	Gate
5,6,7,8	2	Drain
1,2,3	3	Source

4. Ordering Information

Part Number	Package	Brand
KND3403B	TO-252	KIA
KNY3403B	DFN5*6	KIA

5. Absolute maximum ratings

(T_C = 25°C , unless otherwise noted)

Symbol	Parameter	Value	Units
V _{DSS}	Drain-Source Voltage	30	V
I _D	Drain Current -Continuous (T _C = 25 °C)	85	A
	-Continuous (T _C = 100 °C)	61	A
I _{DM}	Drain Current -Pulsed	340	A
V _{GSS}	Gate-Source Voltage	±20	V
E _{AS}	Single Pulsed Avalanche Energy (Note 1)	156	mJ
P _D	Power Dissipation (T _C = 25 °C)	71	W
	-Derate above 25 °C	0.47	W/°C
T _J , T _{STG}	Operating and Storage Temperature Range	-55 to +150	°C

6. Thermal Characteristics

Symbol	Parameter	Value	Units
R _{θJC}	Thermal Resistance, Junction-to-Case	2.1	°C /W
R _{θJA}	Thermal Resistance, Junction-to-Ambient	62	°C /W

7. Electrical characteristics

($T_C = 25^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
Off Characteristics						
$B_{V_{DS}}$	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = 250\text{ }\mu\text{A}$	30	--	--	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}$	--	--	1	μA
I_{GSS}	Gate- Source Leakage Current	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$	--	--	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\text{ }\mu\text{A}$	0.8	1.3	2.5	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS} = 10\text{ V}, I_D = 20\text{ A}$	--	4.5	5.5	m Ω
		$V_{GS} = 4.5\text{ V}, I_D = 15\text{ A}$	--	5.5	7.2	m Ω
R_G	Gate Resistance	$f = 1.0\text{ MHz}$	--	5.0	--	Ω
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS} = 25\text{ V}, V_{GS} = 0\text{ V},$ $f = 1.0\text{ MHz}$	--	2200	--	pF
C_{oss}	Output Capacitance		--	270	--	pF
C_{rss}	Reverse Transfer Capacitance		--	205	--	pF
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 20\text{ V}, V_{GS} = 4.5\text{ V},$ $I_D = 60\text{ A}, R_G = 1.8\text{ }\Omega$ (Note 2,3)	--	11	--	ns
t_r	Turn-On Rise Time		--	87	--	ns
$t_{d(off)}$	Turn-Off Delay Time		--	140	--	ns
t_f	Turn-Off Fall Time		--	82	--	ns
Q_g	Total Gate Charge	$V_{DD} = 24\text{ V}, I_D = 30\text{ A},$ $V_{GS} = 10\text{ V}$ (Note 2,3)	--	47	--	nC
Q_{gs}	Gate-Source Charge		--	8.5	--	nC
Q_{gd}	Gate-Drain Charge		--	9.9	--	nC
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Continuous Source Current	Integral Reverse P-N Junction Diode in the MOSFET	--	--	85	A
I_{SM}	Pulsed Source Current		--	--	340	A
V_{SD}	Drain-Source Diode Forward Voltage	$V_{GS} = 0\text{ V}, I_S = 20\text{ A}$	--	--	1.4	V
t_{rr}	Reverse Recovery Time	$V_{GS} = 0\text{ V}, I_S = 30\text{ A},$ $dI_F / dt = 100\text{ A}/\mu\text{s}$ (Note 2)	--	15	--	ns
Q_{rr}	Reverse Recovery Charge		--	7.0	--	μC

Notes:

1. $L = 0.5\text{ mH}, V_{DD} = 15\text{ V}, V_{GS} = 10\text{ V}, R_G = 25\text{ }\Omega$, Starting $T_J = 25^\circ\text{C}$
2. Pulse Test : Pulse width $\leq 300\text{ }\mu\text{s}$, Duty cycle $\leq 2\%$
3. Essentially independent of operating temperature

8. Typical Characteristics

Figure 1. Output Characteristics

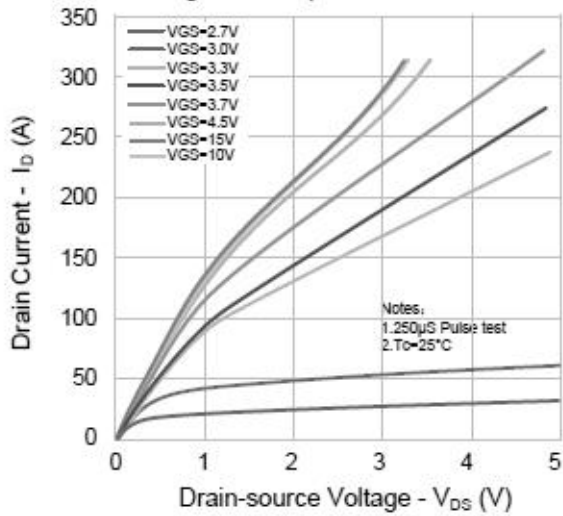


Figure 2. Transfer Characteristics

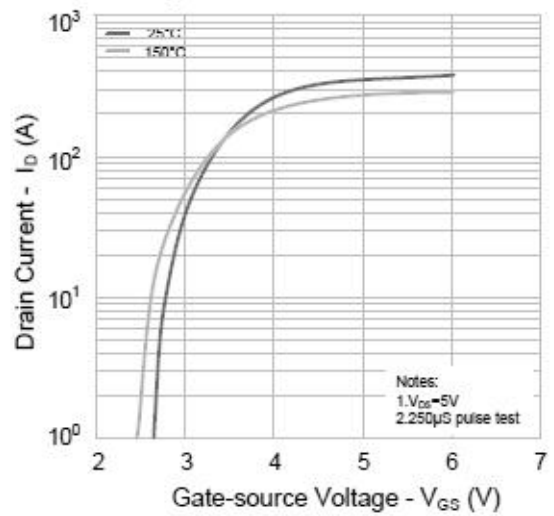


Figure 3. On-Resistance vs. Drain Current

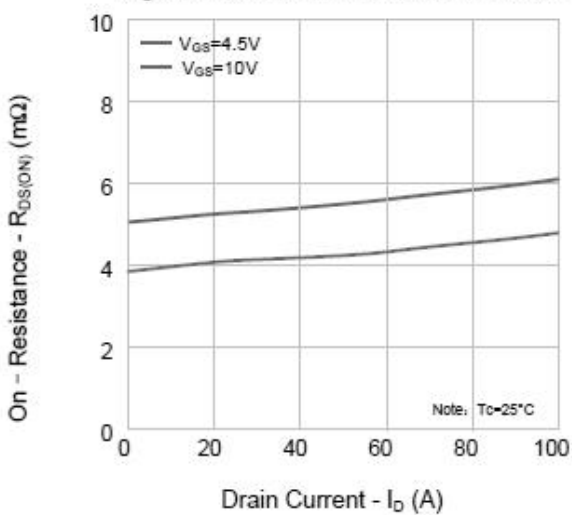


Figure 4. Body Diode Forward Voltage Variation vs. Source Current and Temperature

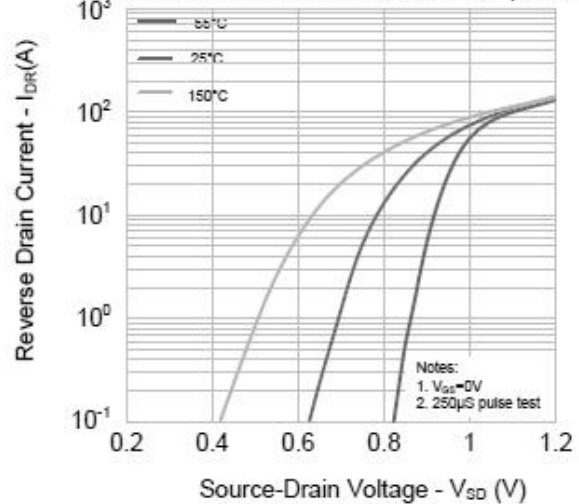


Figure 5. Capacitance Characteristics

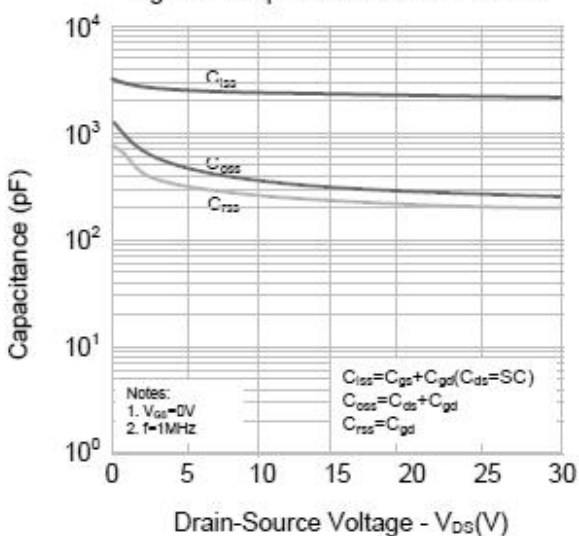


Figure 6. Gate Charge

