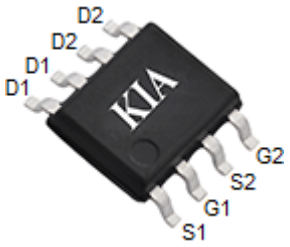
1. Features

- Low $R_{DS(on)}$=14.5mΩ(typ.) @ V_{GS}=10V
- 5V Logic Level Control
- 100% EAS Guaranteed
- ESD protected up to 2KV

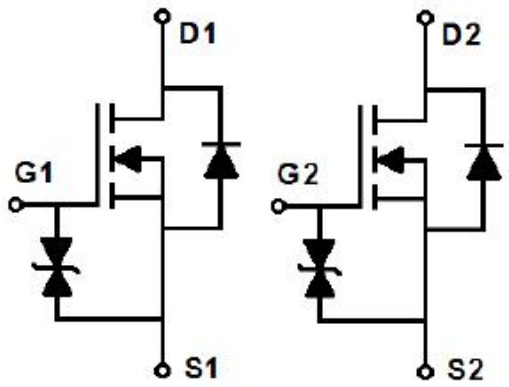
2. Application

- Load Switch
- Switching Circuits
- High Speed line Driver
- Power management

3. Pin configuration



SOP8



Pin	Function
G1,G2	Gate
D1,D2	Drain
S1,S2	Source

4. Ordering Information

Part Number	Package	Brand
KNE7106B	SOP8	KIA

5. Absolute maximum ratings

T_A=25°C unless otherwise noted

Parameter		Symbol	Ratings	Units
Drain-Source Voltage		V_{DSS}	65	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	T_A=25°C	I_D	20	A
	T_A=70°C	I_D	16	A
Drain Current Pulsed [1]	T_A=25°C	I_{DM}	26	A
Power Dissipation	T_A=25°C	P_D	1.6	W
Single Pulsed Avalanche Energy [2]		EAS	31	mJ
Maximum Junction Temperature		T_J	150	°C
Storage Temperature Range		T_{STG}	-50 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

6. Thermal characteristics

Parameter	Symbol	Ratings	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	80	°C/W

7. Electrical characteristics

(T_J=25°C, unless otherwise notes)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Static Electrical Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=250uA	65	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V,V_{GS}=0V T_A=25°C	-	-	1	uA
		V_{DS}=48V, V_{GS}=0V, T_A=125°C	-	-	100	nA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±20	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	1.0	1.6	2.5	V
Static Drain-Source On-Resistance 2)	$R_{DS(on)}$	V_{GS}=10V,I_D=10A	-	14.5	19	mΩ
		V_{GS}=4.5V,I_D=8A	-	20.5	27	mΩ
Dynamic Electrical Characteristics						
Input Capacitance	C_{iss}	V_{DS}=30V,V_{GS}=0V, f=1MHz	-	385	-	pF
Output Capacitance	C_{oss}		-	170	-	pF
Reverse Transfer Capacitance	C_{rss}		-	10	-	pF
Total Gate Charge	Q_g	V_{DS}=30V,I_D=3A, V_{GS}=10V	-	6	-	nC
Gate-Source Charge	Q_{gs}		-	0.6	-	nC
Gate-Drain Charge	Q_{gd}		-	2.4	-	nC
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=30V,I_D=3A, R_G=6Ω,V_{GS}=10V	-	5	-	ns
Turn-On Rise Time	t_r		-	13	-	ns
Turn-Off Delay Time	$t_{d(off)}$		-	8	-	ns
Turn-Off Fall Time	t_f		-	17	-	ns
Source Drain Diode Characteristics						
Source drain current(Body Diode)	I_{SD}	T_A=25°C	-	-	12	A
Forward on Voltage	V_{SD}	V_{GS}=0V, I_{SD}=3A, T_J=25°C	-	-	1.2	V

Note：
1) Pulse width limited by maximum allowable junction temperature
2) Pulse test: Pulse width≤300us, duty cycle≤2%.

8. Typical Characteristics

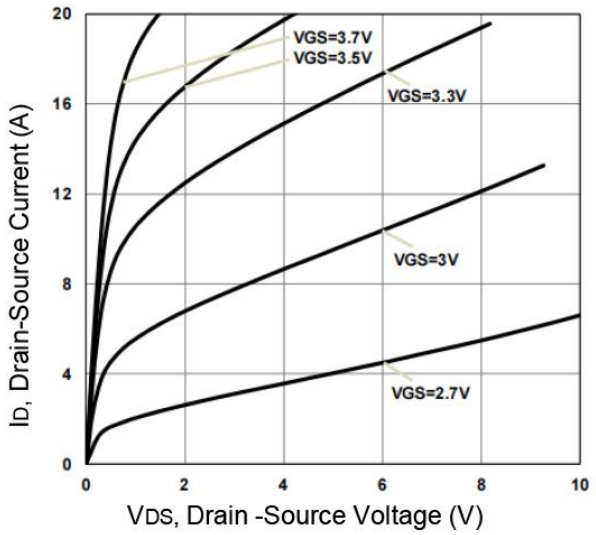


Fig1. Typical Output Characteristics

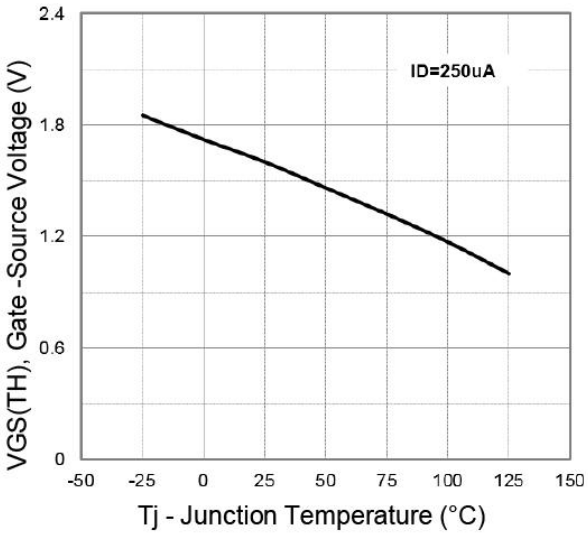


Fig2. Normalized Threshold Voltage Vs. Temperature

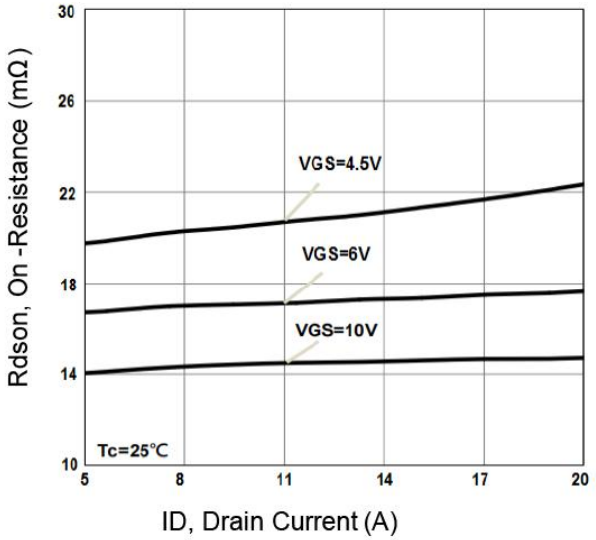


Fig3. On-Resistance vs. Drain Current and Gate

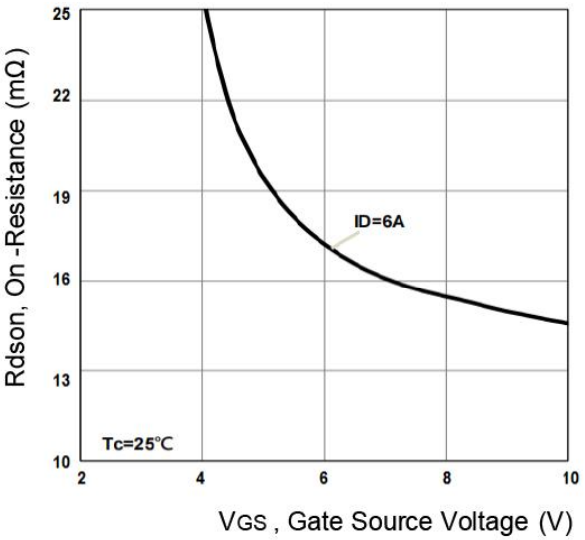


Fig4. On-Resistance vs. Gate Source Voltage

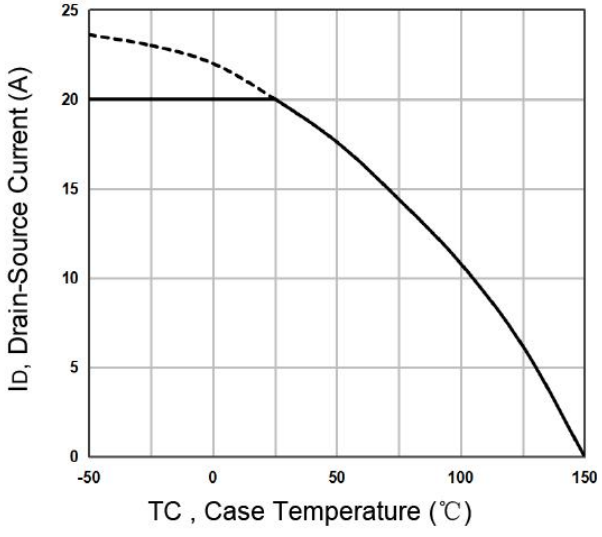


Fig5. Continuous Drain Current vs. TC

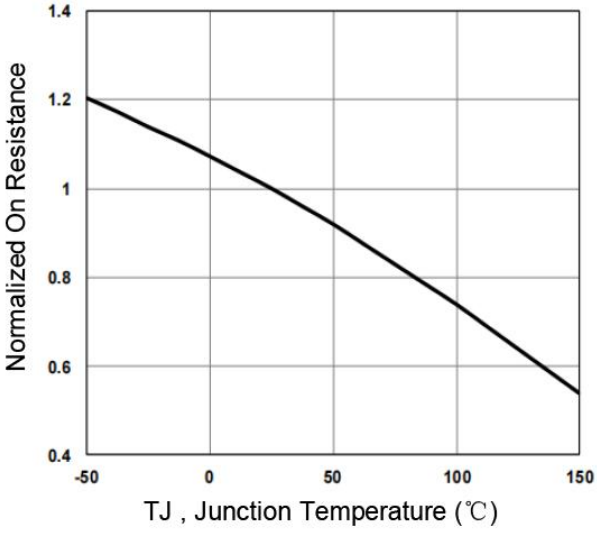


Fig6. Normalized RDSON vs. TJ

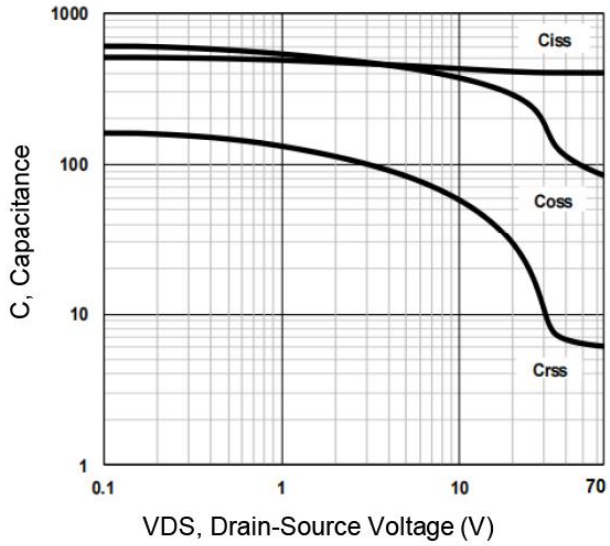


Fig7. Typical Capacitance Vs. Drain-Source Voltage

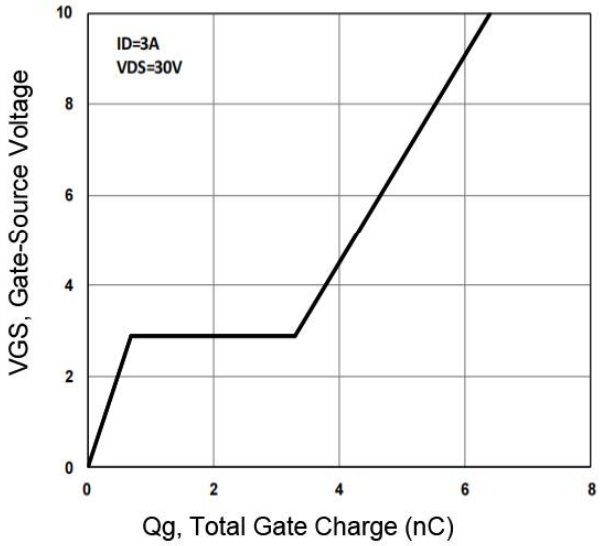


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

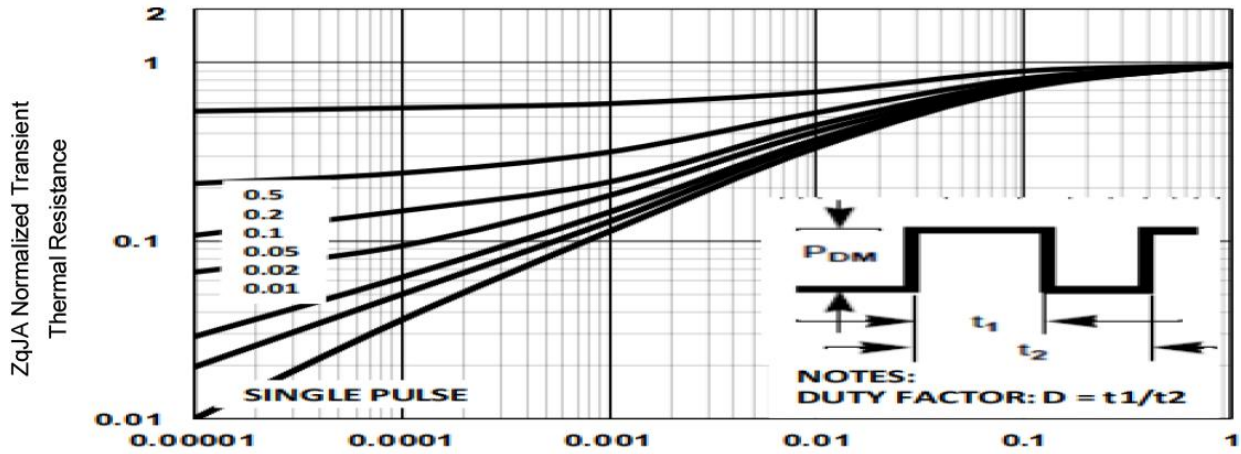


Fig9. Normalized Maximum Transient Thermal Impedance