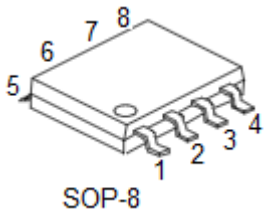
1. Features

- $R_{DS(ON)}$=40mΩ (typ.) @ V_{GS}=-10V
- -5V Logic Level Control
- P Channel SOP-8 Package
- Pb−Free, RoHS Compliant

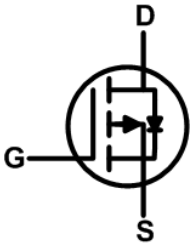
2. Applications

- Load Switch
- Switching circuits
- High-speed line driver
- Power Management Functions

3. Pin configuration



SOP-8



Pin	Function
1,2,3	Source
4	Gate
5,6,7,8	Drain

4. Ordering Information

Part Number	Package	Brand
KPE4403B	SOP-8	KIA

5. Absolute maximum ratings

T_A=25℃ unless otherwise specified

Parameter		Symbol	Rating	Unit
Gate-Source Voltage		V_{GS}	±20	V
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	-30	V
Maximum Junction Temperature		T_J	150	°C
Storage Temperature Range		T_{STG}	-50 to 150	°C
Pulse Drain Current Tested [1)]		I_{DM}	-24	A
Continuous Drain Current	T_A=25°C	I_D	-5	A
	T_A =70°C		-4.8	A
Maximum Power Dissipation	T_A =25°C	P_D	1.56	W
	T_A =70°C		1.25	W
Thermal Resistance Junction-Ambient		$R_{\theta JA}$	80	°C/W

6. Electrical characteristics

(T_J=25°C,unless otherwise notes)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V I_D=-250μA	-30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V, V_{GS}=0V，T_A=25°C	--	--	-1	μA
		V_{DS}=-24V, V_{GS}=0V，T_A=125°C	--	--	-100	uA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	--	--	±100	nA
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=-250μA	-1.2	-1.6	-2.5	V
Drain-Source On-State Resistance 2)	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-4A	--	40	50	mΩ
		V_{GS}=-4.5V, I_D=-3A	--	63	80	mΩ
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz	--	490	--	pF
Output Capacitance	C_{oss}		--	68	--	pF
Reverse Transfer Capacitance	C_{rss}		--	45	--	pF
Total Gate Charge	Q_g	V_{DS}=-15V I_D=-4A, V_{GS}=-10V	--	7.9	--	nC
Gate Source Charge	Q_{gs}		--	0.6	--	nC
Gate Drain Charge	Q_{gd}		--	2.5	--	nC
Turnon Delay Time	$t_{d(on)}$	V_{DD}=-15V, I_D=-1A, R_G=3.3Ω, V_{GS}=-10V	--	7	--	ns
Turnon Rise Time	t_r		--	4.5	--	ns
TurnOff Delay Time	$t_{d(off)}$		-	23	--	ns
TurnOff Fall Time	t_f		--	8.4	--	ns
Source drain current(Body Diode)	I_{SD}	T_A=25°C	--	--	-2	A
Forward on voltage 2)	V_{SD}	Tj=25°C, I_{SD}=-4A, V_{GS}=0V	--	-0.88	-1.2	V

Notes:
1.Pulse width limited by maximum allowable junction temperature
2.Pulse test ; Pulse width≤300 s, duty cycle≤2%.

7. Typical Characteristics

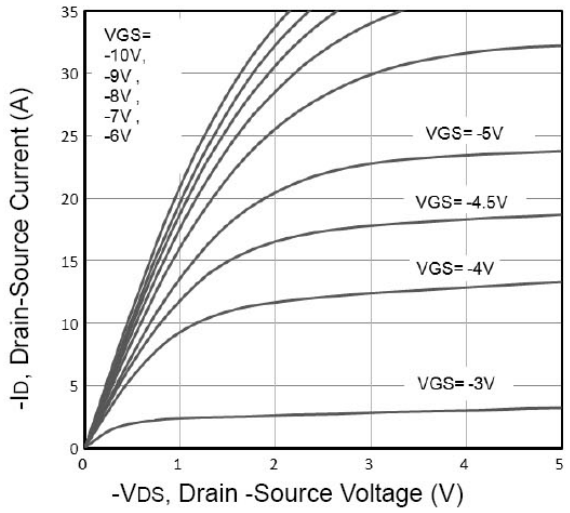


Fig1. Typical Output Characteristics

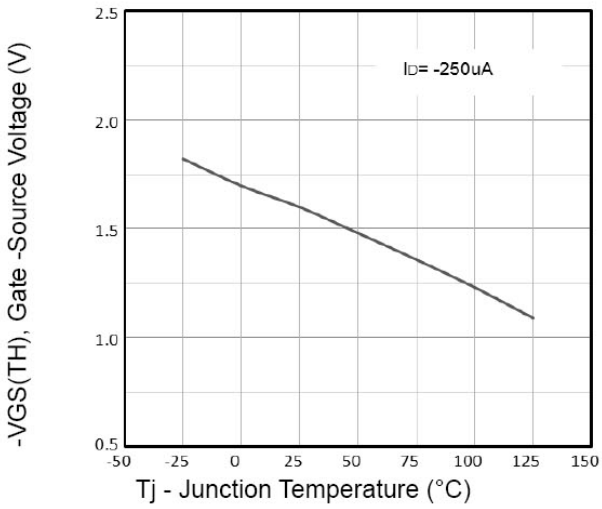


Fig2. Normalized Threshold Voltage Vs. Temperature

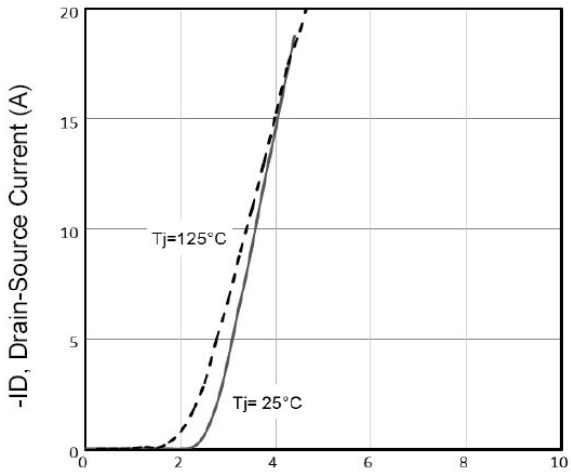


Fig3. Typical Transfer Characteristics

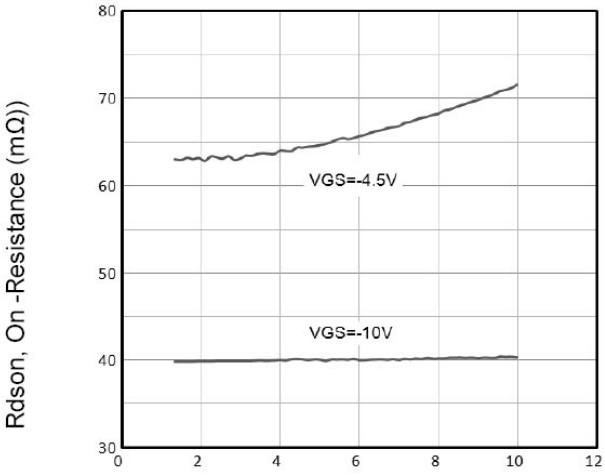


Fig4. On-Resistance vs. Drain Current and Gate

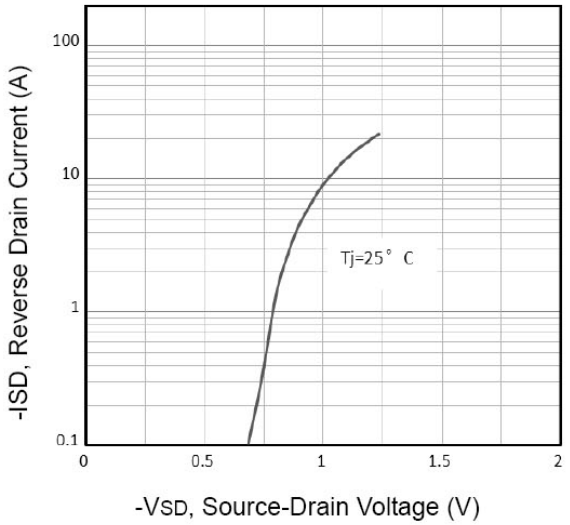


Fig5. Typical Source-Drain Diode Forward Voltage

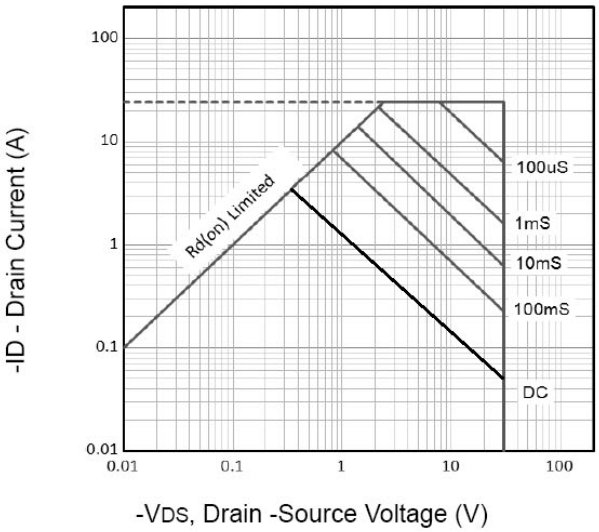


Fig6. Maximum Safe Operating Area

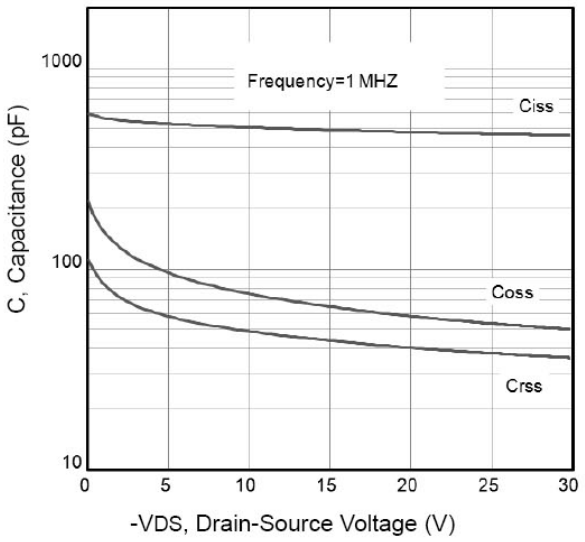


Fig7. Typical Capacitance Vs. Drain-Source Voltage

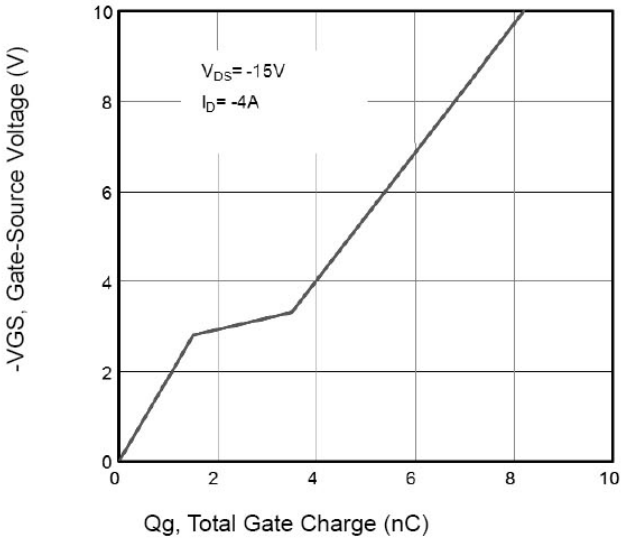


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

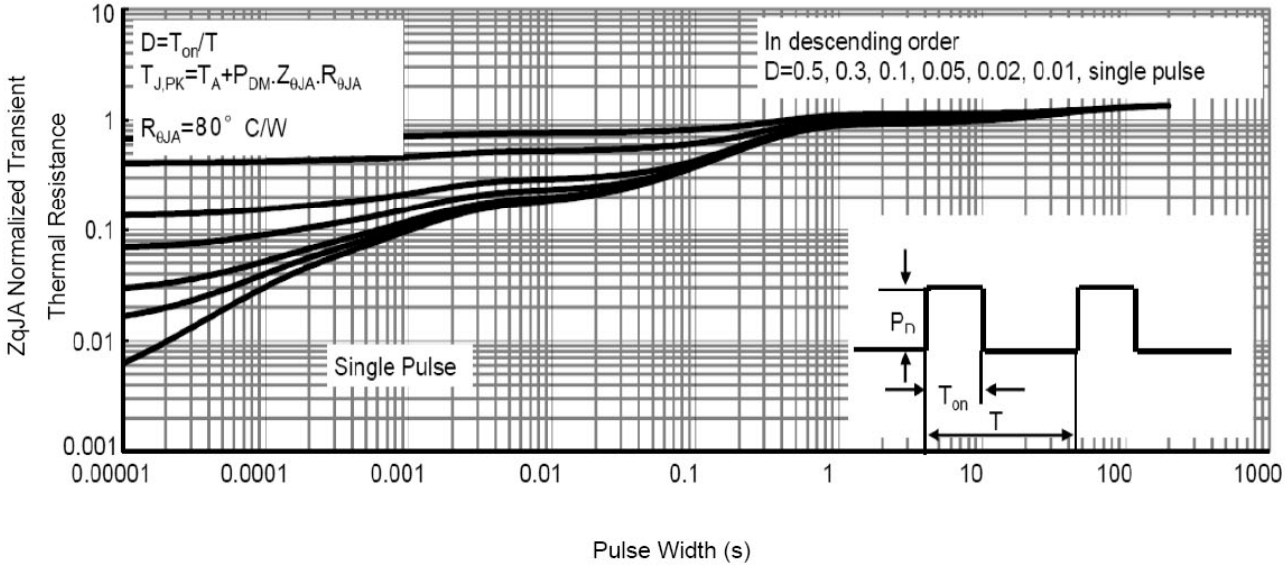


Fig9. Normalized Maximum Transient Thermal Impedance

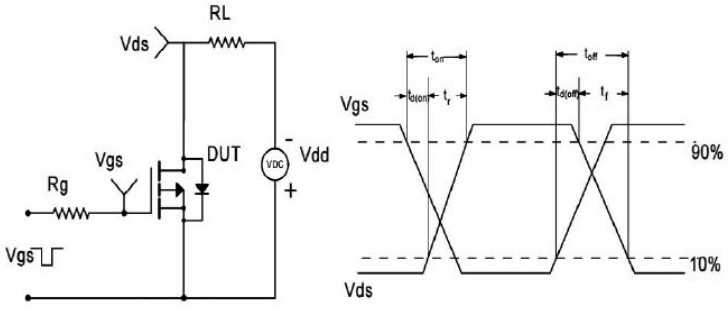


Fig10. Switching Time Test Circuit and waveforms