

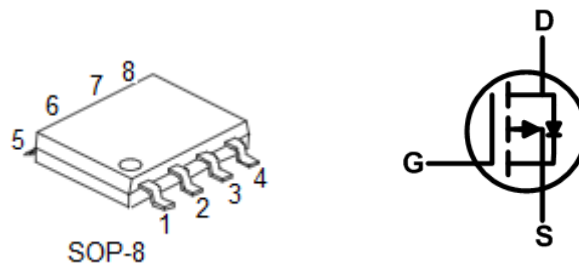
1. Features

- $R_{DS(ON)}=40m\Omega$ (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



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

$T_A=25^{\circ}\text{C}$ 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	$^{\circ}\text{C}$	
Storage Temperature Range	T_{STG}	-50 to 150	$^{\circ}\text{C}$	
Pulse Drain Current Tested ¹⁾	I_{DM}	-24	A	
Continuous Drain Current	$T_A=25^{\circ}\text{C}$	I_D	-5	A
	$T_A=70^{\circ}\text{C}$		-4.8	A
Maximum Power Dissipation	$T_A=25^{\circ}\text{C}$	P_D	1.56	W
	$T_A=70^{\circ}\text{C}$		1.25	W
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	80	$^{\circ}\text{C/W}$	

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}	T _J =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 μs, duty cycle≤2%.

7. Typical Characteristics

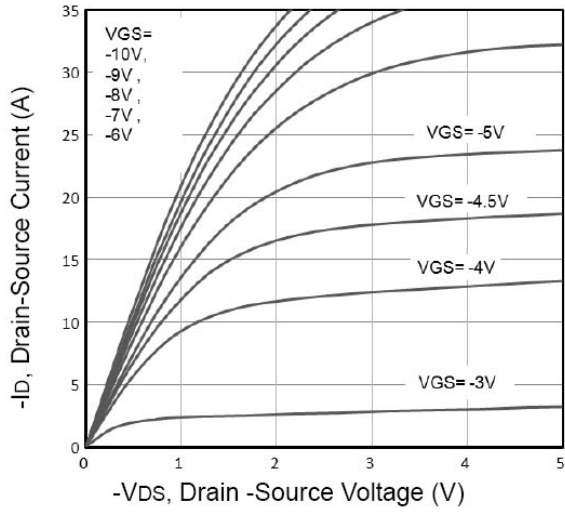


Fig1. Typical Output Characteristics

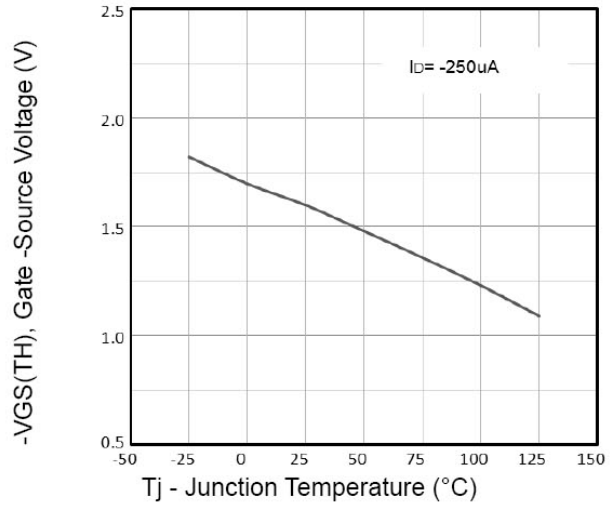


Fig2. Normalized Threshold Voltage Vs. Temperature

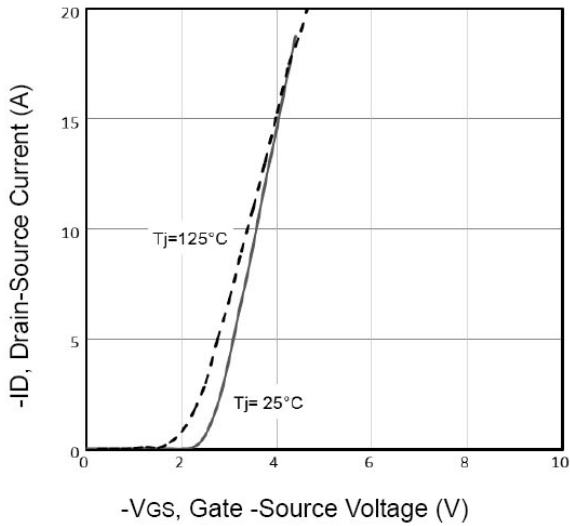


Fig3. Typical Transfer Characteristics

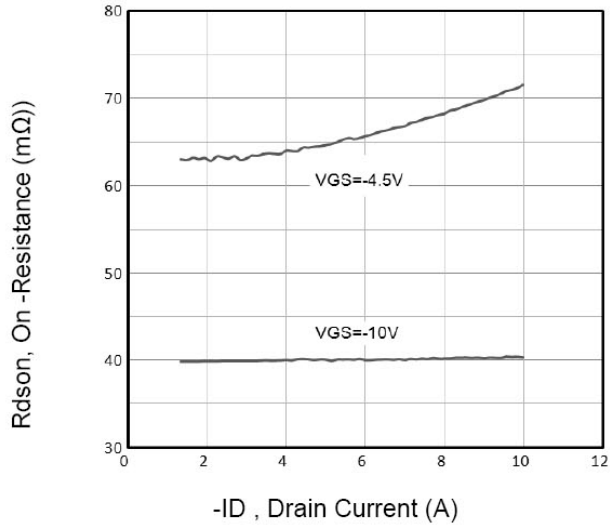


Fig4. On-Resistance vs. Drain Current and Gate

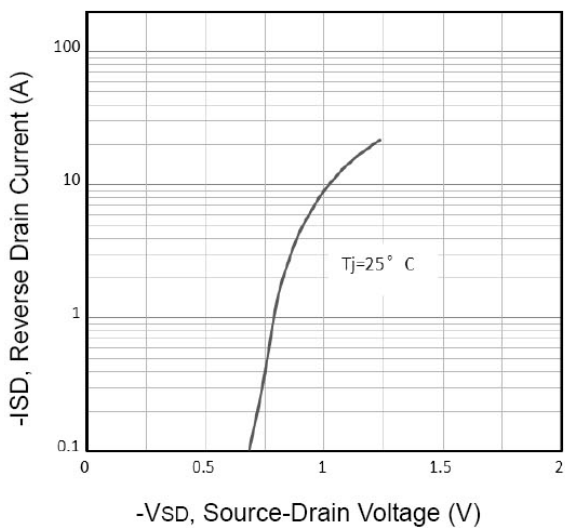


Fig5. Typical Source-Drain Diode Forward Voltage

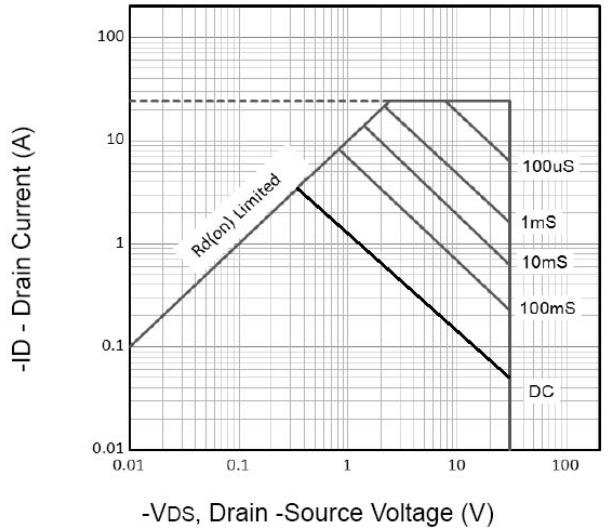


Fig6. Maximum Safe Operating Area

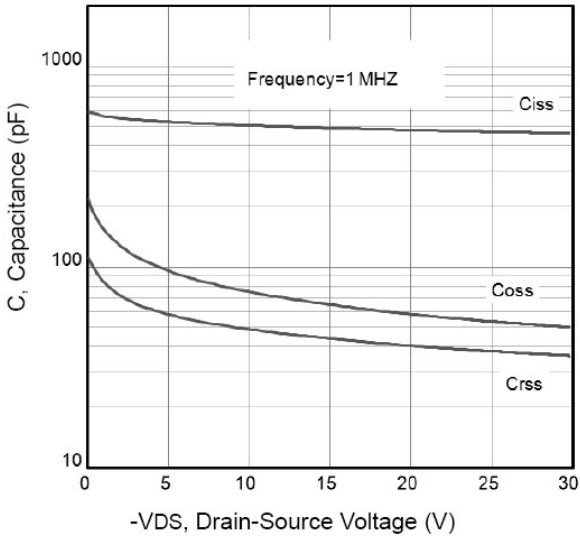


Fig7. Typical Capacitance Vs. Drain-Source Voltage

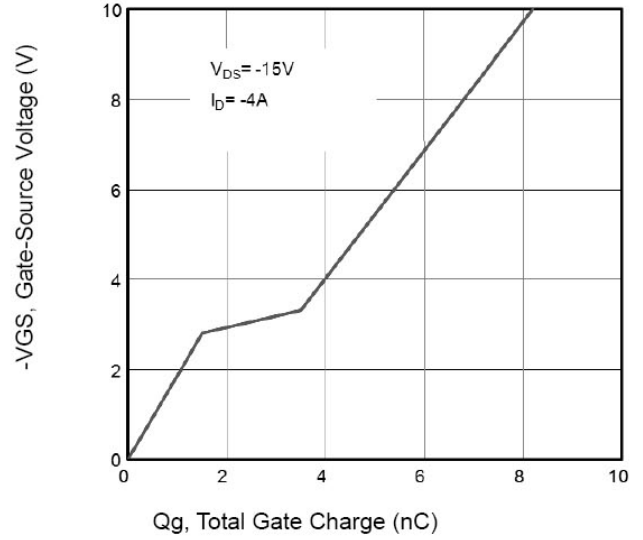


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

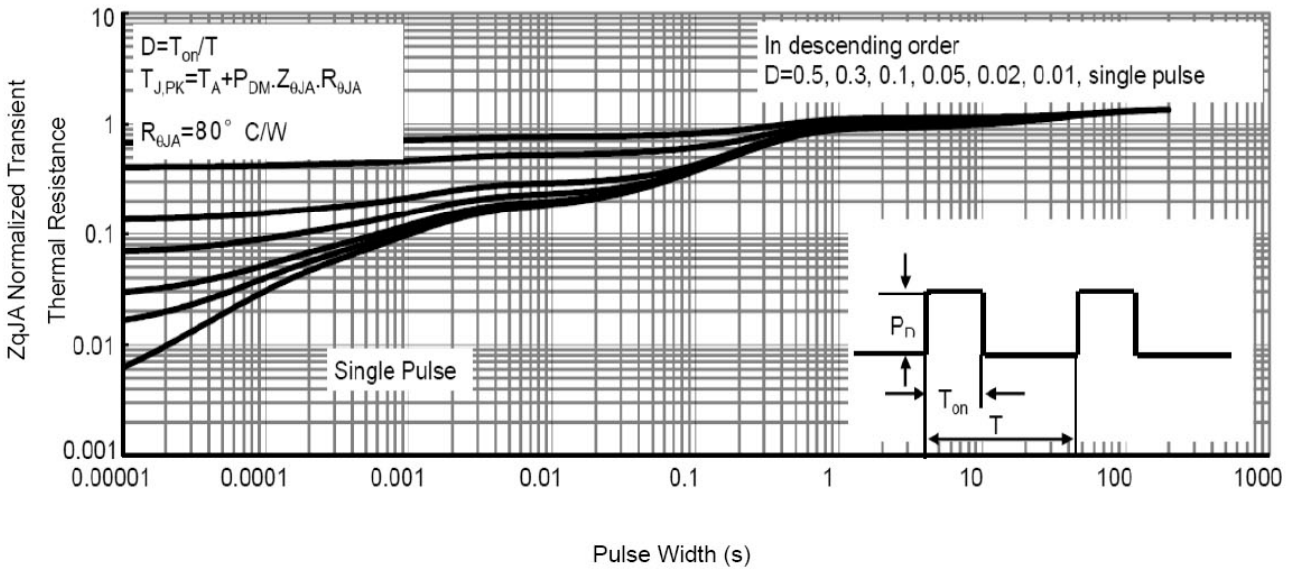


Fig9. Normalized Maximum Transient Thermal Impedance

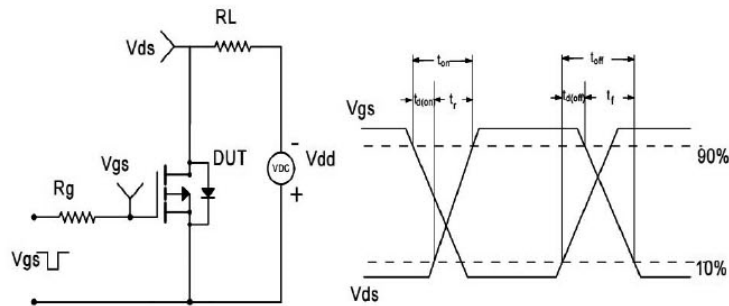


Fig10. Switching Time Test Circuit and waveforms