1. Features

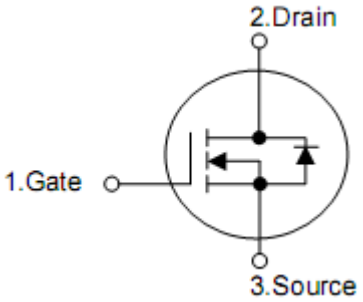
- $R_{DS(on)}$=8.7mΩ(typ.) @ V_{GS}=10V
- 100% avalanche tested
- Reliable and rugged
- Lead free and green device available（RoHS Compliant）

2. Applications

- Switching mode power supplies

3. Symbol

TO-252



Pin	Function
1	Gate
2	Drain
3	Source

4. Ordering Information

Part Number	Package	Brand
KND3508B	TO-252	KIA

5. Absolute maximum ratings

(T_A=25°C, unless otherwise noted)

Parameter		Symbol	Ratings	Unit
Drain-to-Source Voltage		V_{DSS}	80	V
Gate-to-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current	Tc=25 ºC	I_D	70	A
	Tc=100 ºC	I_D	45	A
Pulsed Drain Current [1)]		I_{DM}	300	A
Single Pulse Avalanche Energy [2)]		EAS	260	mJ
Peak Diode Recovery dv/dt		dv/dt	3.1	V/ns
Lead Temperature (1/16” from case for 10sec.)		T_L	300	ºC
Operating and Storage Temperature Range		T_J&T_{STG}	-55 to 150	ºC

6. Electrical characteristics

(T_J=25°C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain-source breakdown voltage	BV_{DSS}	V_{GS}=0V,I_D=250uA	80	-	-	V
Drain-source leakage current	I_{DSS}	V_{DS}=80V, V_{GS}=0V	-	-	1	uA
		V_{DS}=80V, T_J=150°C	-	-	100	uA
Gate-source forward leakage	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Gate threshold voltage	$V_{GS(TH)}$	V_{DS}=V_{GS},I_D=250uA	2.0	3.0	4.0	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=40A	-	8.7	9.5	mΩ
Input capacitance	C_{iss}	V_{DS}=50V,V_{GS}=0V f=1MHz	-	3260	-	pF
Output capacitance	C_{oss}		-	205	-	pF
Reverse transfer capacitance	C_{rss}		-	143	-	pF
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V,V_{DD}=30V, R_G=25Ω, I_D=70A,	-	15	-	ns
Rise time	t_r		-	18	-	ns
Turn-off delay time	$t_{d(off)}$		-	46	-	ns
Fall time	t_f		-	24	-	ns
Total gate charge(10V)	Q_g	V_{DD}=30V, I_D=70A V_{GS}=10V	-	90	-	nC
Gate-source charge	Q_{gs}		-	21	-	nC
Gate-drain charge	Q_{gd}		-	28	-	nC
Maximum Continuous Drain-Source Diode Forward Current	I_S	—	-	-	75	A
Body Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_{SD}=70A	-	0.97	1.4	V
Body Diode Reverse Recovery Time	T_{rr}	I_{SD}=30A, di/dt=100A/us	-	28.5	-	nS
Body Diode Reverse Recovery Charge	Q_{rr}		-	25.5	-	nC

Note:
1) Pulse width limited by maximum junction.
2) V_{DD} =90V, V_{DS} =75V, L=0.1mH

7. Test circuits and waveforms

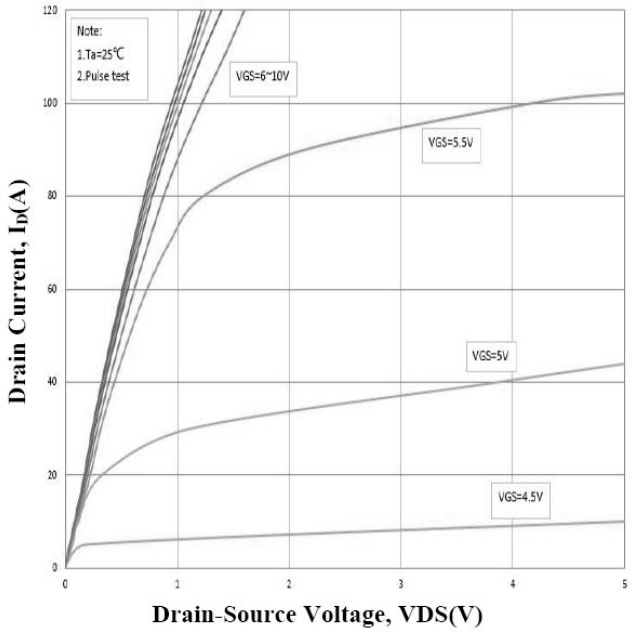


Figure 1. Output characteristics

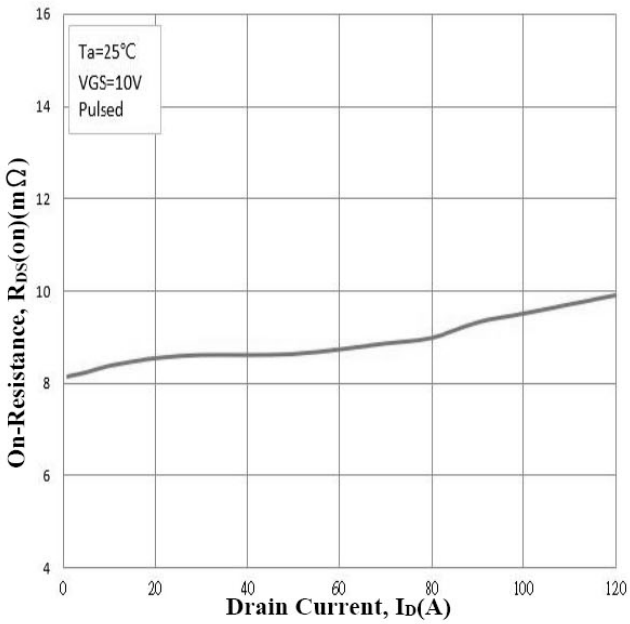


Figure 2. Rdson vs. I_D

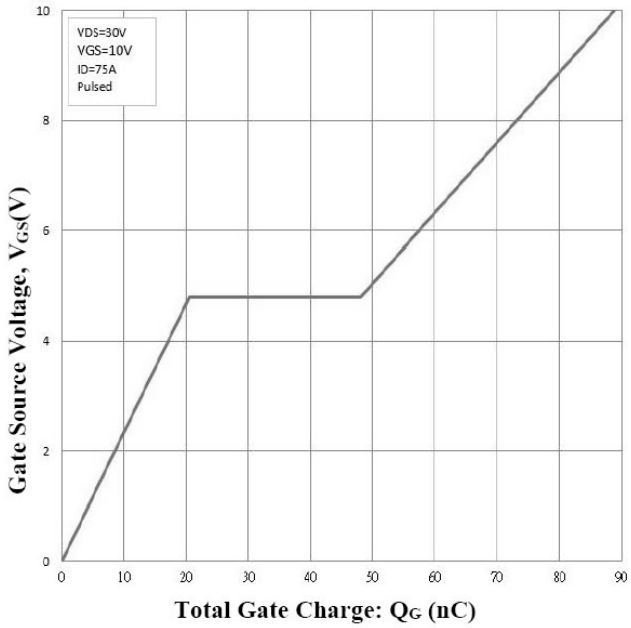


Figure 3. Gate Charge characteristics

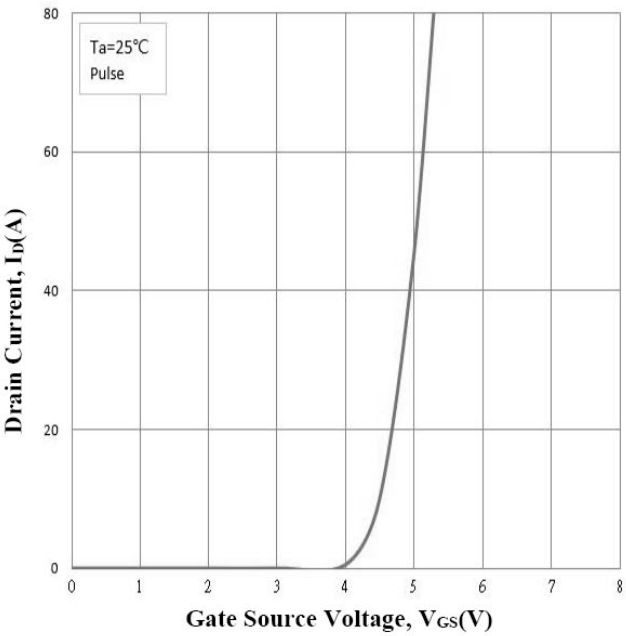


Figure 4. I_D vs. Vgs

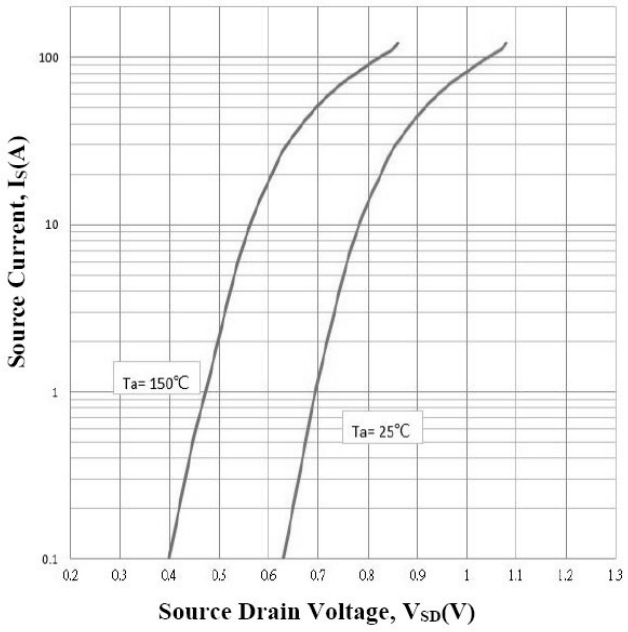


Figure 5. I_S vs. V_{SD}

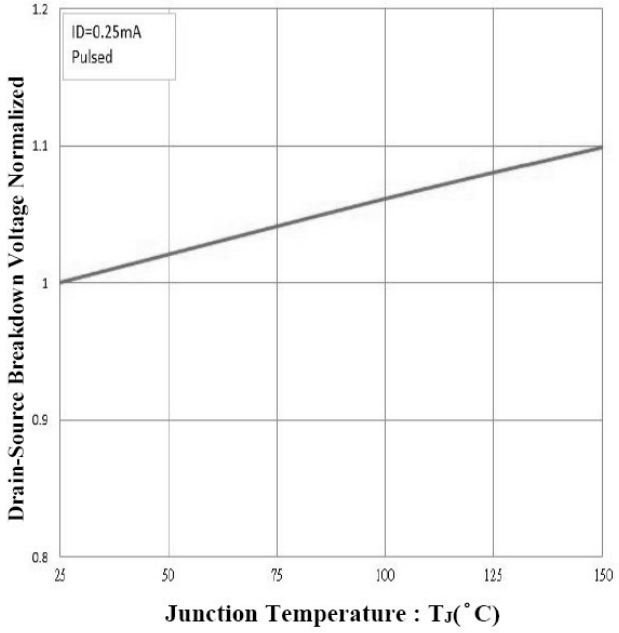


Figure 6. Breakdown vs. Temperature

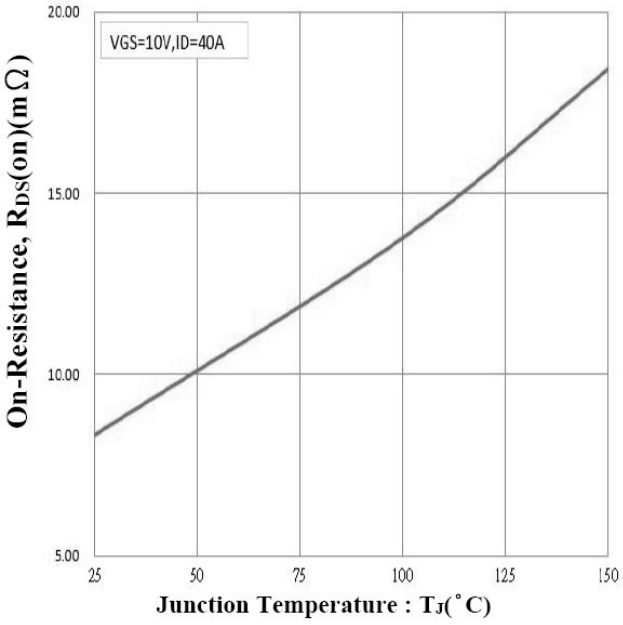


Figure 7. On-Resistance vs. Junction Temperature

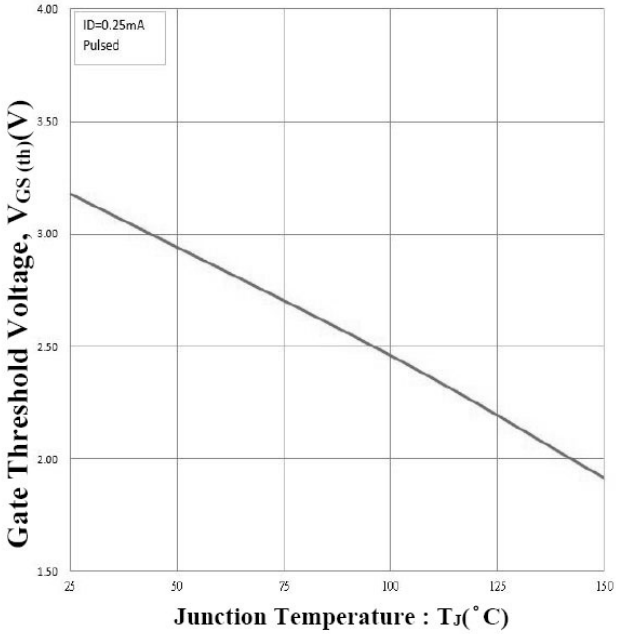


Figure 8. Vth vs. Junction Temperature

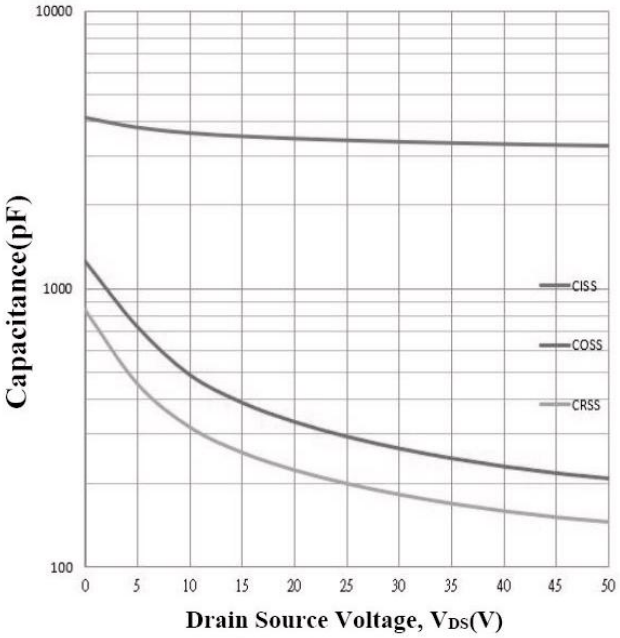


Figure 9. Capacitance characteristics