

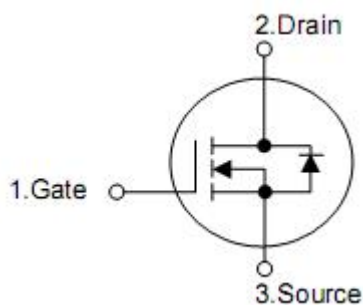
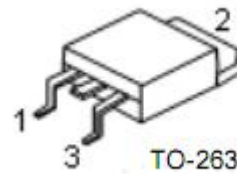
## 1. Features

- Uses advanced SGT technology
- Extremely low  $R_{DS(on)}$ .typ=4.5 mΩ@Vgs=10V
- Excellent gate charge x  $R_{DS(on)}$  product(FOM)

## 2. Description

- Motor Drives
- SR(Synchronous Rectification)
- DC/DC Converters
- General purpose applications

## 3. Pin configuration



Pin DFN5*6	Pin TO-263	Function
4	1	Gate
5,6,7,8	2	Drain
1,2,3	3	Source

#### 4. Ordering Information

Part Number	Package	Brand
KCB3008A	TO-263	KIA
KCY3008A	DFN5*6	KIA

#### 5. Absolute maximum ratings

TC=25 °C unless otherwise specified

Parameter	Symbol	Ratings		Unit	
		TO-263	DFN5*6		
Drain-to-Source Voltage	$V_{DSS}$	85		V	
Continuous Drain Current	$I_D$	$T_C=25\text{ °C}$ (Silicon limited)	160	100	A
		$T_C=25\text{ °C}$ (Package limited)	120	90	
		$T_C=100\text{ °C}$ (Silicon limited)	100	70	
Pulsed drain current ( $T_C = 25\text{ °C}$ , $t_p$ limited by $T_{jmax}$ )	$I_{DP}$	480			
Avalanche energy, single pulse ( $L=0.5\text{mH}$ , $R_g=25\Omega$ )	$E_{AS}$	560		mJ	
Gate-Source voltage	$V_{GS}$	$\pm 20$		V	
Power dissipation ( $T_C = 25\text{ °C}$ )	$P_{tot}$	220	90	W	
Junction & Storage Temperature Range	$T_J$ & $T_{STG}$	-55 to 175		°C	

#### 6. Thermal characteristics

Parameter	Symbol	Ratings		Units
		TO-263	DFN5*6	
Thermal resistance, junction-ambient	$R_{\theta JA}$	60	60	°C/W
Thermal resistance, Junction-case	$R_{\theta JC}$	0.68	1.76	

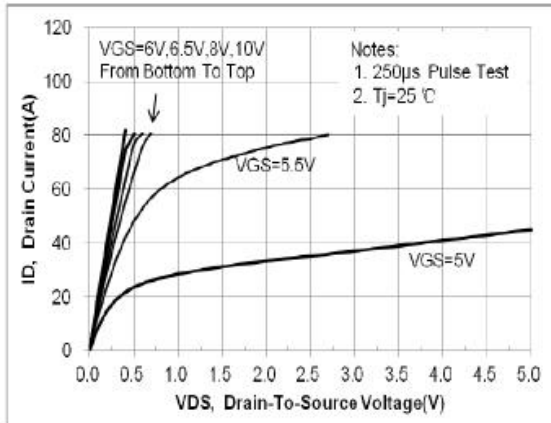
## 7. Electrical characteristics

(T<sub>J</sub>=25°C, unless otherwise notes)

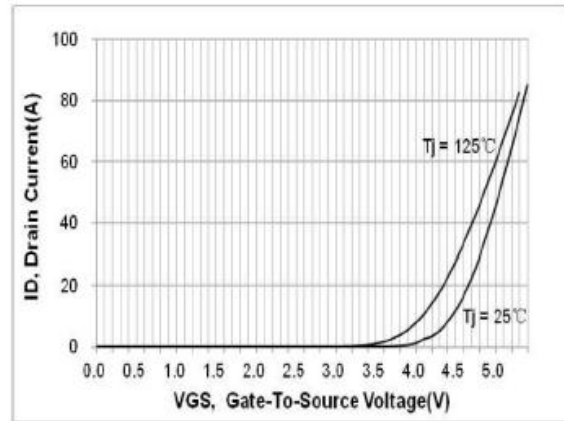
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static characteristics						
Drain-source breakdown voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	85	90	-	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =85V, V <sub>GS</sub> =0V, T <sub>J</sub> =25 °C	-	-	1	μA
		V <sub>DS</sub> =85V, V <sub>GS</sub> =0V, T <sub>J</sub> =125 °C	-	5	-	
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA, T <sub>J</sub> =25 °C	2.0	3.0	4.0	V
Gate leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =20V, V <sub>DS</sub> =0V	-	-	100	nA
Drain-source on-resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =50A, T <sub>J</sub> =25 °C	-	4.5	5.5	mΩ
Transconductance	g <sub>fs</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =50A	-	80	-	S
Dynamic characteristics						
Gate Resistance	R <sub>G</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V F=1MHz	-	1.5	-	Ω
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =40V, V <sub>GS</sub> =0V, F=1MHz	-	4030	-	pF
Output capacitance	C <sub>oss</sub>		-	545	-	pF
Reverse transfer capacitance	C <sub>rss</sub>		-	35	-	pF
Turn-on delay time	t <sub>d(on)</sub>		V <sub>DS</sub> =40V, T <sub>J</sub> =25 °C, V <sub>GS</sub> =10V, R <sub>L</sub> =3Ω	-	20	-
Rise time	t <sub>r</sub>	-		38	-	ns
Turn-off delay time	t <sub>d(off)</sub>	-		45	-	ns
Fall time	t <sub>f</sub>	-		20	-	ns
Gate Charge Characteristics						
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> =40V, I <sub>D</sub> =25A, V <sub>GS</sub> =10V, F=1MHz	-	65	-	nC
Gate-source charge	Q <sub>gs</sub>		-	25	-	nC
Gate-drain charge	Q <sub>gd</sub>		-	14	-	nC
Diode characteristics						
Diode forward voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>SD</sub> =50A	-	0.85	1.4	V
Reverse recovery time	t <sub>rr</sub>	I <sub>F</sub> =20A DI <sub>F</sub> /dt=500A/μs	-	60	-	ns
Reverse recovery charge	Q <sub>rr</sub>		-	340	-	nC

**8. Typical Characteristics**

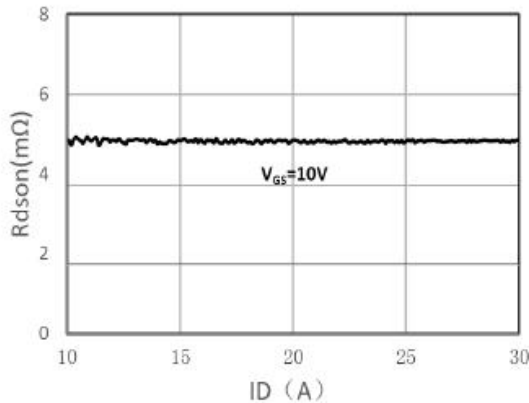
**Figure 1. Typ. Output Characteristics ( $T_j=25^\circ\text{C}$ )**



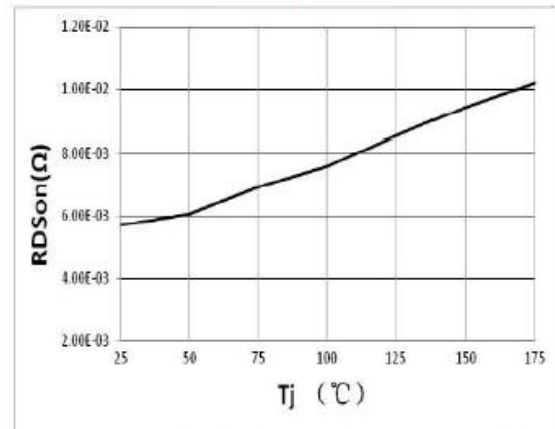
**Figure 2. Transfer Characteristics (Junction Temperature)**



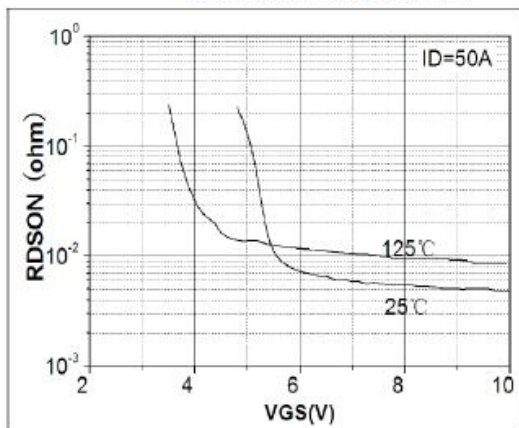
**Figure 3. On-Resistance vs. Drain Current and Gate Voltage Figure**



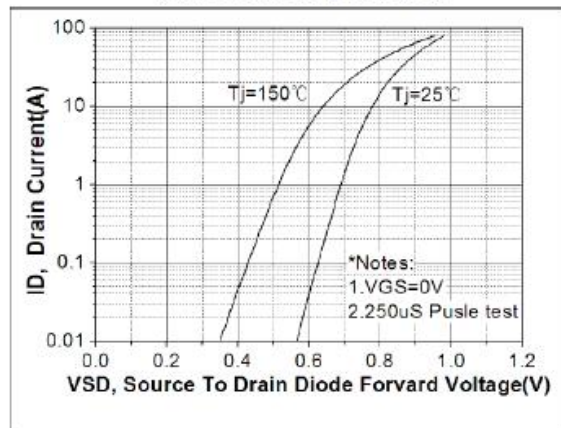
**Figure 4. On-Resistance vs. Junction Temperature**



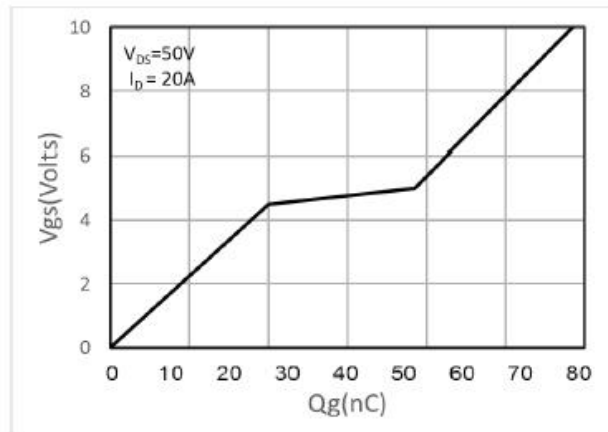
**Figure 5. On-Resistance vs. Gate-Source Voltage (Junction Temperature)**



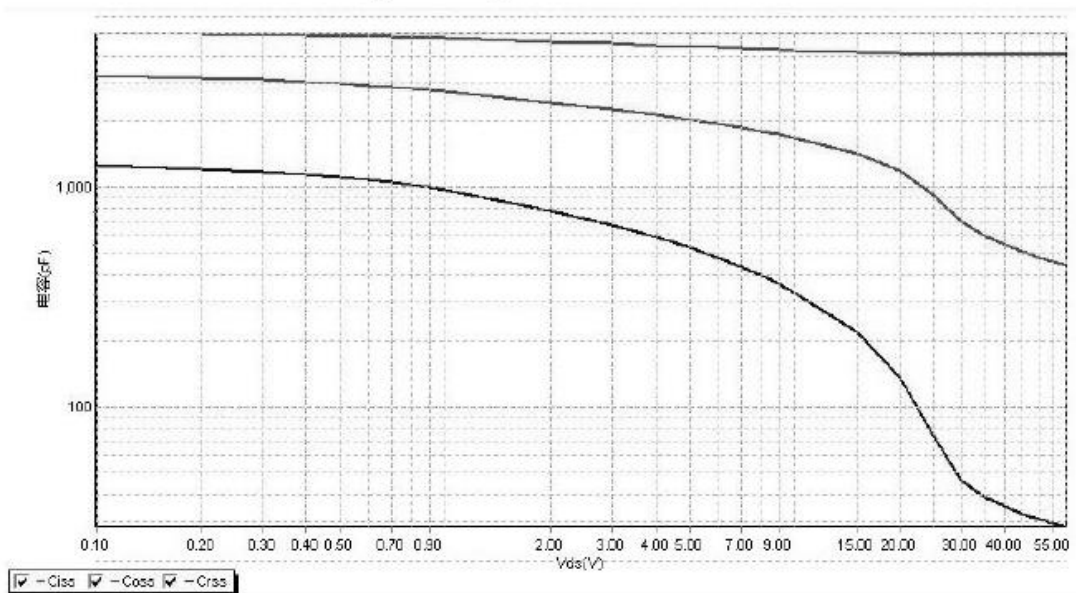
**Figure 6. Body-Diode Characteristics (Junction Temperature)**



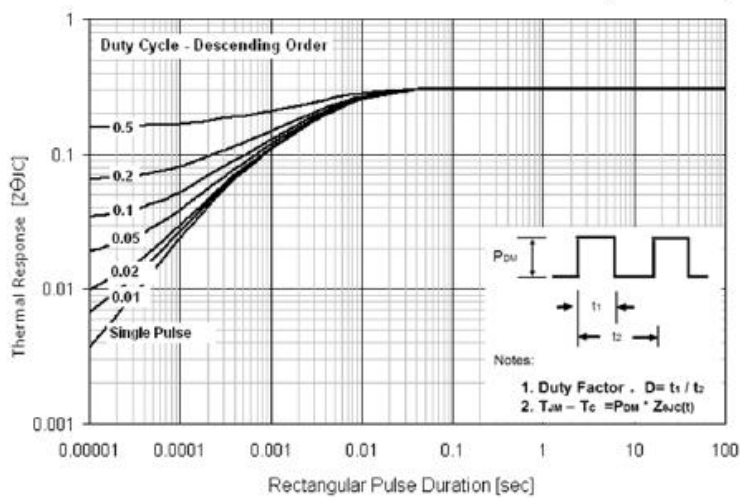
**Figure 7. Gate-Charge Characteristics**



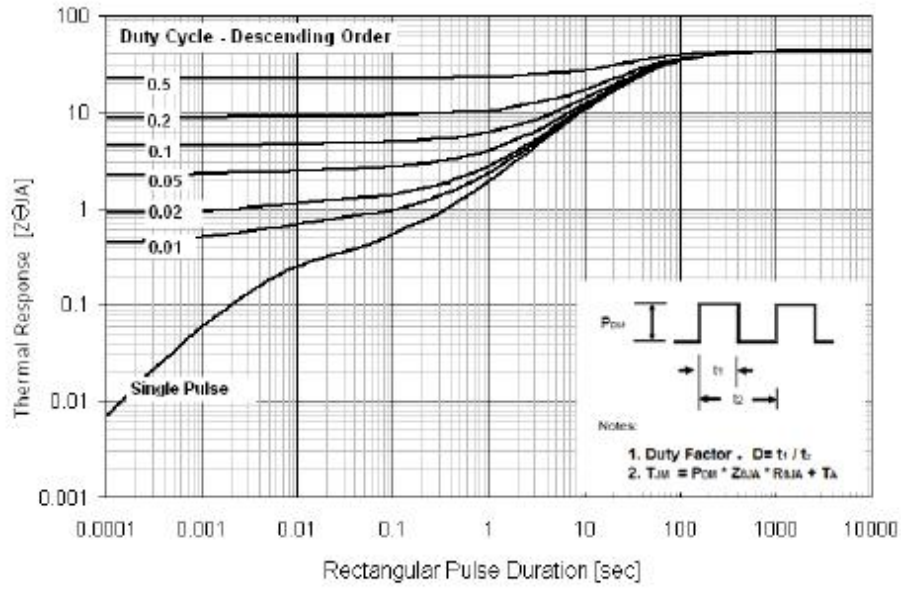
**Figure 8. Capacitance Characteristics**



**Figure 9: Normalized Maximum Transient Thermal Impedance ( $R_{thJC}$ )**



**Figure 10: Normalized Maximum Transient Thermal Impedance ( $R_{thJA}$ )**



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [MOSFET](#) category:*

*Click to view products by [KIA](#) manufacturer:*

Other Similar products are found below :

[IRFD120](#) [JANTX2N5237](#) [2SK2267\(Q\)](#) [BUK455-60A/B](#) [TK100A10N1,S4X\(S](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#)  
[IRS2092STRPBF-EL](#) [IPS70R2K0CEAKMA1](#) [TK31J60W5,S1VQ\(O](#) [TK31J60W,S1VQ\(O](#) [TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#)  
[DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [P85W28HP2F-7071](#) [DMN1053UCP4-7](#) [NTE2384](#) [DMC2700UDMQ-7](#) [DMN2080UCB4-7](#)  
[DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [IPS60R3K4CEAKMA1](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)  
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [IPS60R360PFD7SAKMA1](#)  
[DMN2990UFB-7B](#) [SSM3K35CT,L3F](#) [IPLK60R1K0PFD7ATMA1](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [IPWS65R035CFD7AXKSA1](#)  
[MCQ7328-TP](#) [SSM3J143TU,LXHF](#) [DMN12M3UCA6-7](#) [PJMF280N65E1\\_T0\\_00201](#) [PJMF380N65E1\\_T0\\_00201](#)  
[PJMF280N60E1\\_T0\\_00201](#) [PJMF600N65E1\\_T0\\_00201](#) [PJMF900N65E1\\_T0\\_00201](#)