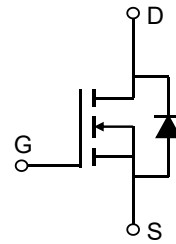


### Description

#### Features

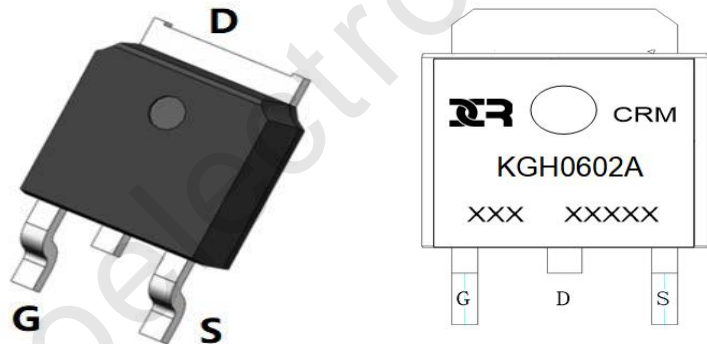
- 60V, 130A
- $R_{DS(ON)}$  Typ = 2.7mΩ @  $V_{GS} = 10V$
- Advanced Split Gate Trench Technology
- Excellent  $R_{DS(ON)}$  and Low Gate Charge
- 100% UIS TESTED!
- 100%  $\Delta V_d$ s TESTED!



Schematic Diagram

#### Application

- Load Switch
- PWM Application
- Power Management



Marking and Pin Assignment

#### Package Marking and Ordering Information

Device	Marking	Package	Outline	Reel Size	Reel (pcs)	Per Carton (pcs)
CRMKGH0602A	CRMKGH0602A	TO-252-3L	TAPING	13"	2500	25000

#### Absolute Maximum Ratings (@ $T_J = 25^\circ\text{C}$ unless otherwise specified)

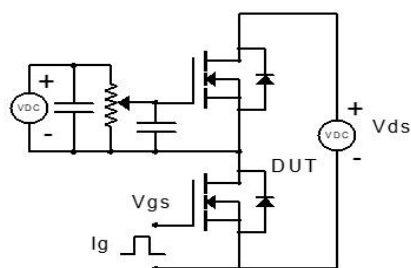
Symbol	Parameter	Value	Units	
V <sub>DS</sub>	Drain-to-Source Voltage	60	V	
V <sub>GS</sub>	Gate-to-Source Voltage	±20	V	
I <sub>D</sub>	Continuous Drain Current	T <sub>C</sub> = 25°C	130	A
		T <sub>C</sub> = 100°C	78	A
I <sub>DM</sub>	Pulsed Drain Current <sup>(1)</sup>	520	A	
E <sub>AS</sub>	Single Pulsed Avalanche Energy <sup>(2)</sup>	333	mJ	
P <sub>D</sub>	Power Dissipation	T <sub>C</sub> = 25°C	101	W
R <sub>θJC</sub>	Thermal Resistance, Junction to Case	1.24	°C/W	
T <sub>J</sub> , T <sub>STG</sub>	Junction & Storage Temperature Range	-55 to 150	°C	

### Electrical Characteristics ( $T_J = 25^\circ\text{C}$ unless otherwise specified)

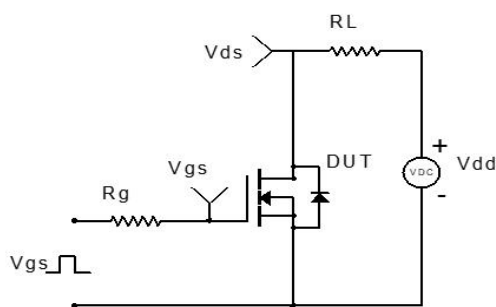
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	I <sub>D</sub> = 250μA, V <sub>GS</sub> = 0V	60	-	-	V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> = 60V, V <sub>GS</sub> = 0V	-	-	1.0	μA
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V	-	-	±100	nA
On Characteristics						
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	2.2	2.8	3.4	V
R <sub>DS(ON)</sub>	Static Drain-Source ON-Resistance <sup>(3)</sup>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 30A	-	2.7	3.5	mΩ
Dynamic Characteristics						
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 30V, f = 1MHz	-	3501	-	pF
C <sub>oss</sub>	Output Capacitance		-	1089	-	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		-	14	-	pF
Q <sub>g</sub>	Total Gate Charge	V <sub>GS</sub> = 0 to 10V V <sub>DS</sub> = 30V, I <sub>D</sub> = 50A	-	56	-	nC
Q <sub>gs</sub>	Gate Source Charge		-	25	-	nC
Q <sub>gd</sub>	Gate Drain("Miller") Charge		-	3	-	nC
Switching Characteristics						
t <sub>d(on)</sub>	Turn-On DelayTime	V <sub>GS</sub> = 10V, V <sub>DD</sub> = 30V I <sub>D</sub> = 50A, R <sub>GEN</sub> = 2.7Ω	-	12	-	ns
t <sub>r</sub>	Turn-On Rise Time		-	32	-	ns
t <sub>d(off)</sub>	Turn-Off DelayTime		-	46	-	ns
t <sub>f</sub>	Turn-Off Fall Time		-	23	-	ns
Drain-Source Diode Characteristics and Max Ratings						
I <sub>S</sub>	Maximum Continuous Drain to Source Diode Forward Current	V <sub>GS</sub> = 0V, I <sub>S</sub> = 30A	-	-	130	A
I <sub>SM</sub>	Maximum Pulsed Drain to Source Diode Forward Current		-	-	520	A
V <sub>SD</sub>	Drain to Source Diode Forward Voltage		-	-	1.2	V
trr	Body Diode Reverse Recovery Time		-	40	-	ns
Qrr	Body Diode Reverse Recovery Charge		I <sub>F</sub> = 50A, di/dt = 100A/us	-	38	-

- Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
  2.  $E_{AS}$  condition: Starting  $T_J = 25^\circ\text{C}$ ,  $V_{DD} = 30\text{V}$ ,  $V_G = 10\text{V}$ ,  $R_G = 25\text{ohm}$ ,  $L = 0.5\text{mH}$ ,  $I_{AS} = 36.5\text{A}$
  3. Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 0.5\%$ .

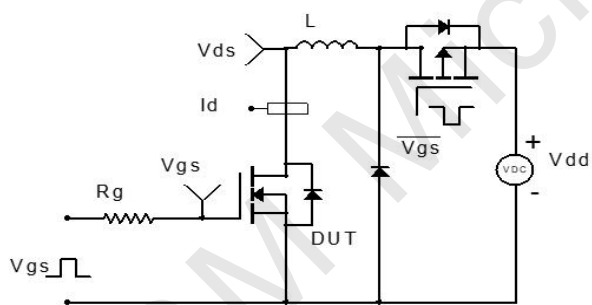
## Test Circuit



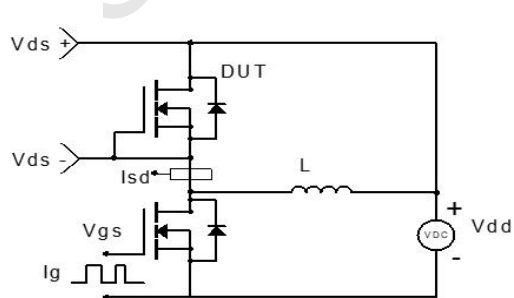
**Figure 1: Gate Charge Test Circuit & Waveform**



**Figure 2: Resistive Switching Test Circuit & Waveform**

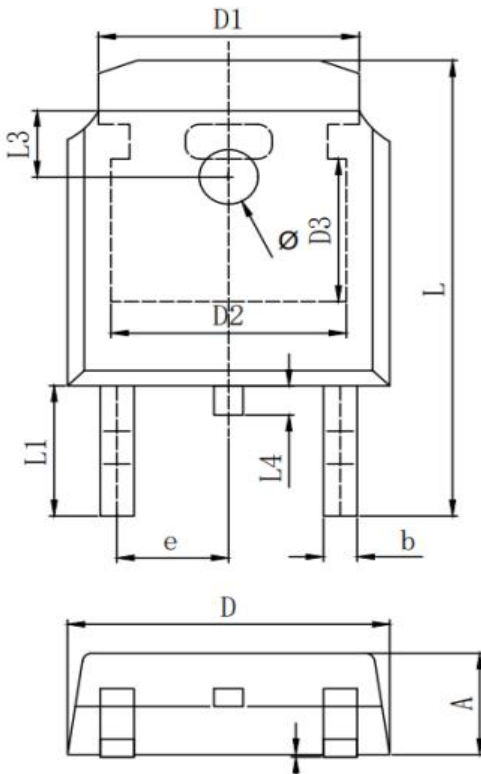


**Figure 3: Unclamped Inductive Switching Test Circuit & Waveform**



**Figure 4: Diode Recovery Test Circuit & Waveform**

## Package Mechanical Data(TO-252-3L)



SYMBOL	MILLIMETER		
	MIN	Typ.	MAX
A	2.200	2.300	2.400
A1	0.000		0.127
b	0.640	0.690	0.740
c (电镀后)	0.460	0.520	0.580
D	6.500	6.600	6.700
D1	5.334 REF		
D2	4.826 REF		
D3	3.166 REF		
E	6.000	6.100	6.200
e	2.286 TYP		
h	0.000	0.100	0.200
L	9.900	10.100	10.300
L1	2.888 REF		
L2	1.400	1.550	1.700
L3	1.600 REF		
L4	0.600	0.800	1.000
Φ	1.100	1.200	1.300
θ	0°		8°
θ 1	9° TYP		
θ 2	9° TYP		

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