

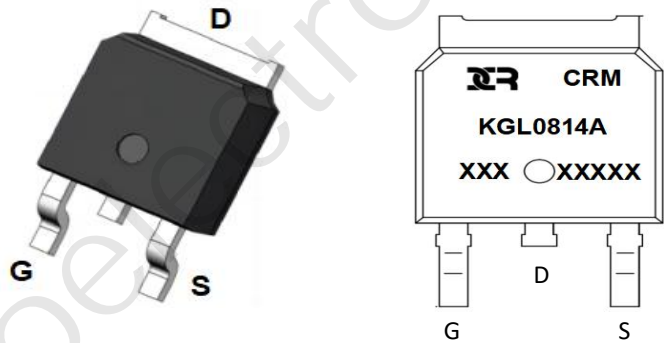
Description

Features

- 85V, 35A
- $R_{DS(ON)}$ Typ = 13.5mΩ @ $V_{GS} = 10V$
- $R_{DS(ON)}$ Typ = 17mΩ @ $V_{GS} = 4.5V$
- Advanced Split Gate Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- 100% UIS TESTED!
- 100% ΔV_{ds} TESTED!



Schematic Diagram



Marking and Pin Assignment

Application

- Load Switch
- PWM Application
- Power Management

Package Marking and Ordering Information

Device	Marking	Package	Outline	Reel Size	Reel (pcs)	Per Carton (pcs)
CRMKGL0814A	CRMKGL0814A	TO-252-3L	TAPING	13"	2500	25000

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

Symbol	Parameter	Value	Units
V_{DS}	Drain-to-Source Voltage	85	V
V_{GS}	Gate-to-Source Voltage	±20	V
I_D	Continuous Drain Current	$T_C = 25^\circ\text{C}$	35
		$T_C = 100^\circ\text{C}$	21
I_{DM}	Pulsed Drain Current ⁽¹⁾	140	A
E_{AS}	Single Pulsed Avalanche Energy ⁽²⁾	36	mJ
P_D	Power Dissipation	$T_C = 25^\circ\text{C}$	42
$R_{\theta JC}$	Thermal Resistance, Junction to Case	3	°C/W
T_J, T_{STG}	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 _{(BR)DSS}	Drain-Source Breakdown Voltage	I _D = 250μA, V _{GS} = 0V	85	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 85V, V _{GS} = 0V	-	-	1.0	μA
I _{GSS}	Gate-Body Leakage Current	V _{DS} = 0V, V _{GS} = ±20V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	1	1.6	2	V
R _{DS(ON)}	Static Drain-Source ON-Resistance ⁽³⁾	V _{GS} = 10V, I _D = 20A	-	13.5	17.6	mΩ
		V _{GS} = 4.5V, I _D = 15A	-	17	22	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} = 0V, V _{DS} = 40V, f = 1MHz	-	729	-	pF
C _{oss}	Output Capacitance		-	205	-	pF
C _{rss}	Reverse Transfer Capacitance		-	6	-	pF
Q _g	Total Gate Charge	V _{GS} = 0 to 10V V _{DS} = 40V, I _D = 10A	-	32	-	nC
Q _{gs}	Gate Source Charge		-	7	-	nC
Q _{gd}	Gate Drain("Miller") Charge		-	6	-	nC
Switching Characteristics						
t _{d(on)}	Turn-On DelayTime	V _{GS} = 10V, V _{DD} = 40V I _D = 10A, R _{GEN} = 3Ω	-	10	-	ns
t _r	Turn-On Rise Time		-	7	-	ns
t _{d(off)}	Turn-Off DelayTime		-	16	-	ns
t _f	Turn-Off Fall Time		-	8	-	ns
Drain-Source Diode Characteristics and Max Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	35	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	140	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} = 0V, I _S = 20A	-	-	1.2	V
trr	Body Diode Reverse Recovery Time	I _F = 10A, di/dt = 100A/us	-	35	-	ns
Qrr	Body Diode Reverse Recovery Charge		-	55	-	nC

- Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
 2. E_{AS} condition: Starting $T_J = 25^\circ\text{C}$, $V_{DD} = 40\text{V}$, $V_G = 10\text{V}$, $R_G = 25\text{ohm}$, $L = 0.5\text{mH}$, $I_{AS} = 12\text{A}$
 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

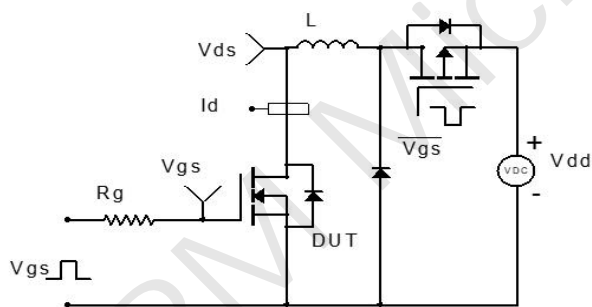
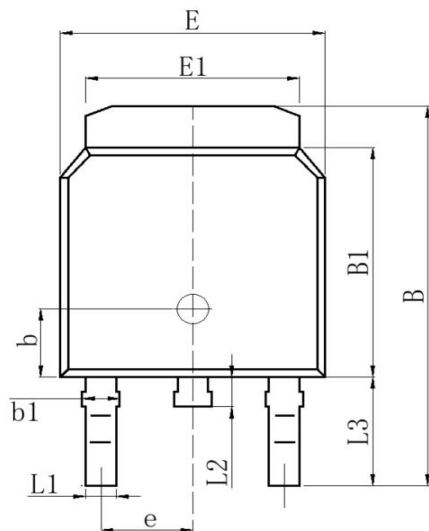


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

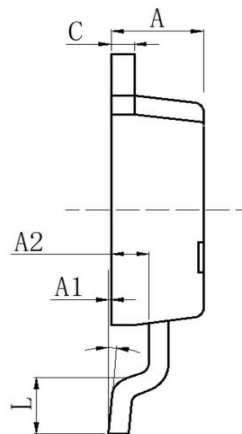


Figure 4: Diode Recovery Test Circuit & Waveform

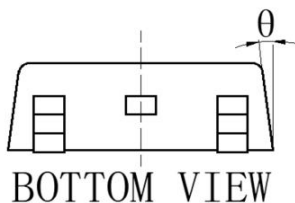
Package Mechanical Data(TO-252-3L)



FRONT VIEW



SIDE VIEW



BOTTOM VIEW


SYMBOL	MIN	NOM	MAX
A	2.20	2.30	2.40
A1	0.00	—	0.10
A2	0.95	1.00	1.05
C	0.508REF		
L	1.40	1.50	1.60
E	6.50	6.60	6.70
E1	5.20	5.30	5.40
B	9.90	10.10	10.30
B1	6.00	6.10	6.20
b	1.70	1.80	1.90
b1	1.00MAX		
L1	0.60	0.75	0.90
L2	0.70	0.90	
L3	2.95REF		
e	2.286BSC		
θ	7°		

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