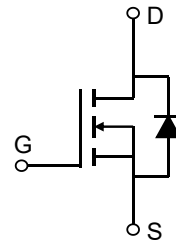


Description

Features

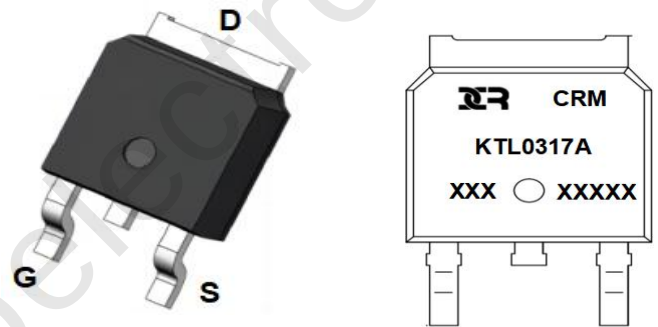
- 30V, 25A
- $R_{DS(ON)}$ Typ = 14.4mΩ @ $V_{GS} = 10V$
- $R_{DS(ON)}$ Typ = 22.5mΩ @ $V_{GS} = 4.5V$
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- 100% UIS TESTED!
- 100% ΔV_{ds} TESTED!



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)
CRMKTL0317A	CRMKTL0317A	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	30	V	
V _{GS}	Gate-to-Source Voltage	±20	V	
I _D	Continuous Drain Current	T _C = 25°C	25	A
		T _C = 100°C	15	A
I _{DM}	Pulsed Drain Current ⁽¹⁾	100	A	
E _{AS}	Single Pulsed Avalanche Energy ⁽²⁾	16	mJ	
P _D	Power Dissipation	T _C = 25°C	19.8	W
R _{θJC}	Thermal Resistance, Junction to Case	6.3	°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	30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 30V, 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	1.5	2	V
R _{DS(ON)}	Static Drain-Source ON-Resistance ⁽³⁾	V _{GS} = 10V, I _D = 8A	-	14.4	18.7	mΩ
		V _{GS} = 4.5V, I _D = 5A	-	22.5	29.3	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz	-	510	-	pF
C _{oss}	Output Capacitance		-	61	-	pF
C _{rss}	Reverse Transfer Capacitance		-	51	-	pF
Q _g	Total Gate Charge	V _{GS} = 0 to 10V V _{DS} = 15V, I _D = 3A	-	10	-	nC
Q _{gs}	Gate Source Charge		-	2	-	nC
Q _{gd}	Gate Drain("Miller") Charge		-	2	-	nC
Switching Characteristics						
t _{d(on)}	Turn-On DelayTime	V _{GS} = 10V, V _{DD} = 15V I _D = 3A, R _{GEN} = 3Ω	-	4	-	ns
t _r	Turn-On Rise Time		-	6	-	ns
t _{d(off)}	Turn-Off DelayTime		-	12	-	ns
t _f	Turn-Off Fall Time		-	3	-	ns
Drain-Source Diode Characteristics and Max Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	25	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	100	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} = 0V, I _S = 2A	-	-	1.2	V
trr	Body Diode Reverse Recovery Time	I _F = 3A, di/dt = 100A/us	-	8	-	ns
Qrr	Body Diode Reverse Recovery Charge		-	2	-	nC

- Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
 2. E_{AS} condition: Starting $T_J = 25^\circ\text{C}$, $V_{DD} = 15\text{V}$, $V_G = 10\text{V}$, $R_G = 25\Omega$, $L = 0.5\text{mH}$, $I_{AS} = 8\text{A}$
 3. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 0.5\%$.

Test Circuit

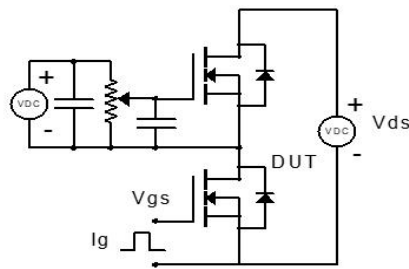


Figure 1: Gate Charge Test Circuit & Waveform

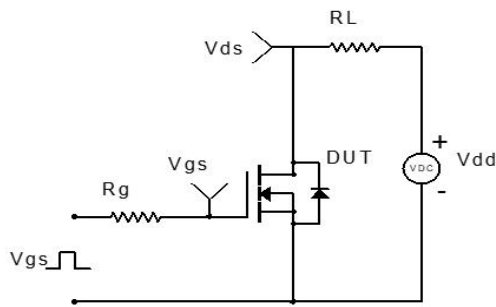


Figure 2: Resistive Switching Test Circuit & Waveform

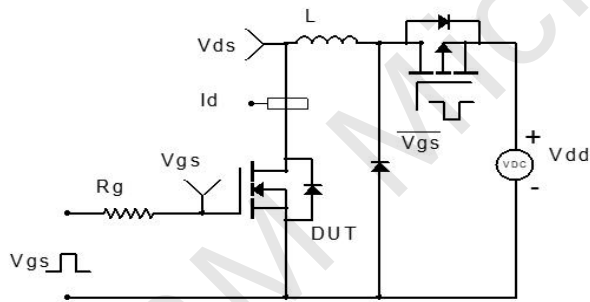


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

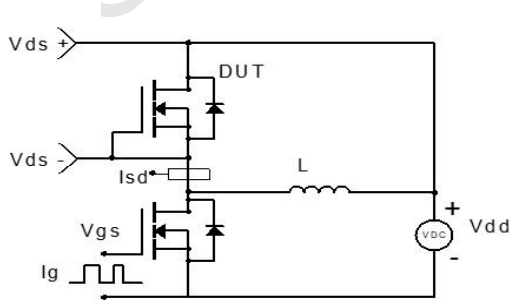
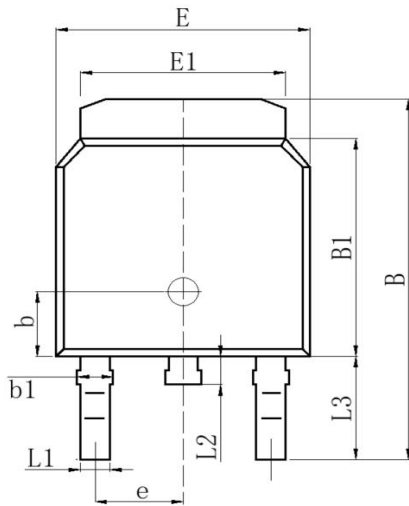
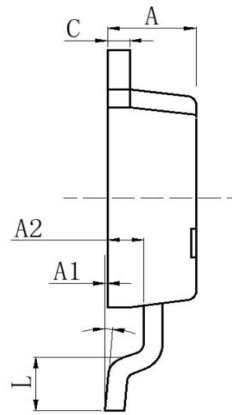


Figure 4: Diode Recovery Test Circuit & Waveform

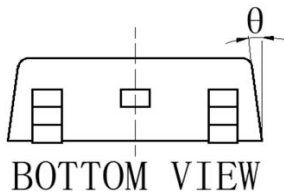
Package Mechanical Data(TO-252-3L)



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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Contact information

For more information, please visit: <http://www.crm-semi.tech>

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