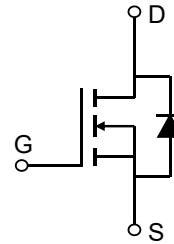


### Description

#### Features

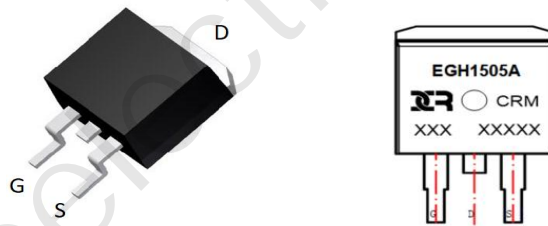
- 150V, 150A  
 $R_{DS(ON)}$  Typ = 4.4mΩ @  $V_{GS} = 10V$
- Advanced Split Gate Trench Technology
- Excellent  $R_{DS(ON)}$  and Low Gate Charge
- 100% UIS TESTED!
- 100%  $\Delta V_{ds}$  TESTED!



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)
CRMEGH1505A	CRMEGH1505A	TO-263-3L	TAPING	13"	800	4000

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

Symbol	Parameter	Value	Units
$V_{DS}$	Drain-to-Source Voltage	150	V
$V_{GS}$	Gate-to-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current	$T_C = 25^\circ C$	150
		$T_C = 100^\circ C$	90
$I_{DM}$	Pulsed Drain Current <sup>(1)</sup>	600	A
$E_{AS}$	Single Pulsed Avalanche Energy <sup>(2)</sup>	729	mJ
$P_D$	Power Dissipation	$T_C = 25^\circ C$	250
$R_{\theta JC}$	Thermal Resistance, Junction to Case	0.5	$^\circ C/W$
$T_J, T_{STG}$	Junction & Storage Temperature Range	-55 to 150	$^\circ C$

### Electrical Characteristics (T<sub>J</sub> = 25°C unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
<b>Off Characteristics</b>						
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	I <sub>D</sub> = 250μA, V <sub>GS</sub> = 0V	150	-	-	V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> = 150V, 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
<b>On Characteristics</b>						
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	2.5	2.9	3.5	V
R <sub>DS(ON)</sub>	Static Drain-Source ON-Resistance <sup>(3)</sup>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 30A	-	4.4	5.72	mΩ
<b>Dynamic Characteristics</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 75V, f = 1MHz	-	5030	-	pF
C <sub>oss</sub>	Output Capacitance		-	672	-	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		-	15	-	pF
Q <sub>g</sub>	Total Gate Charge	V <sub>GS</sub> = 0 to 10V V <sub>DS</sub> = 75V, I <sub>D</sub> = 20A	-	80	-	nC
Q <sub>gs</sub>	Gate Source Charge		-	30	-	nC
Q <sub>gd</sub>	Gate Drain("Miller") Charge		-	15	-	nC
<b>Switching Characteristics</b>						
t <sub>d(on)</sub>	Turn-On DelayTime	V <sub>GS</sub> = 10V, V <sub>DD</sub> = 75V I <sub>D</sub> = 20A, R <sub>GEN</sub> = 6Ω	-	50	-	ns
t <sub>r</sub>	Turn-On Rise Time		-	89	-	ns
t <sub>d(off)</sub>	Turn-Off DelayTime		-	93	-	ns
t <sub>f</sub>	Turn-Off Fall Time		-	58	-	ns
<b>Drain-Source Diode Characteristics and Max Ratings</b>						
I <sub>S</sub>	Maximum Continuous Drain to Source Diode Forward Current		-	-	150	A
I <sub>SM</sub>	Maximum Pulsed Drain to Source Diode Forward Current		-	-	600	A
V <sub>SD</sub>	Drain to Source Diode Forward Voltage	V <sub>GS</sub> = 0V, I <sub>S</sub> = 30A	-	-	1.2	V
t <sub>rr</sub>	Body Diode Reverse Recovery Time	I <sub>F</sub> = 15A, di/dt = 100A/us	-	120	-	ns
Q <sub>rr</sub>	Body Diode Reverse Recovery Charge		-	250	-	nC

- Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
  2. E<sub>AS</sub> condition: Starting T<sub>J</sub>=25°C, V<sub>DD</sub>=75V, V<sub>G</sub>=10V, R<sub>G</sub>=25ohm, L=0.5mH, I<sub>AS</sub>=54A
  3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%.

### Test Circuit

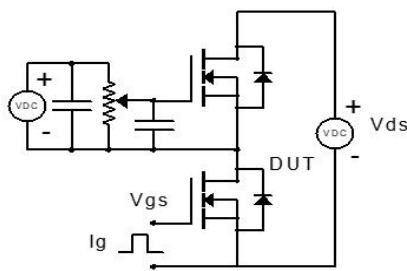


Figure 1: Gate Charge Test Circuit & Waveform

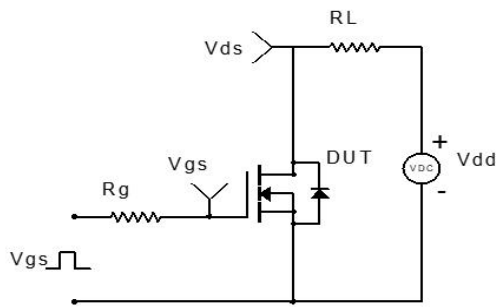


Figure 2: Resistive Switching Test Circuit & Waveform

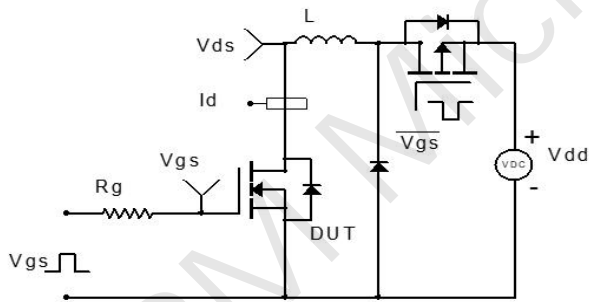


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

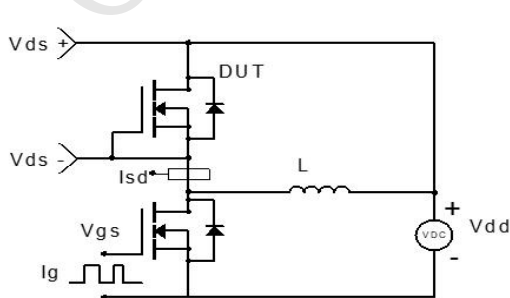
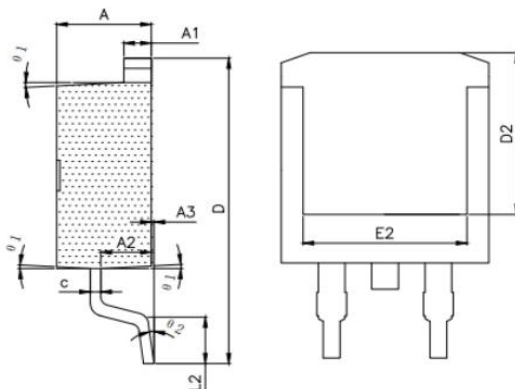
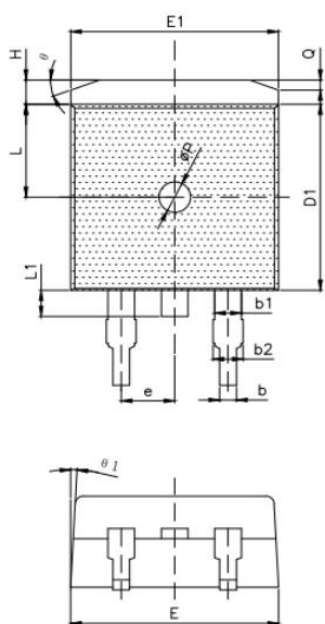


Figure 4: Diode Recovery Test Circuit & Waveform

### Package Mechanical Data(TO-263-3L)




SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	4.40	4.50	4.60
A1	1.20	1.30	1.40
A2	2.30	2.40	2.50
A3	0.03	0.13	0.23
b	0.70	0.80	0.90
b1	1.21	1.27	1.40
b2	1.25	1.35	1.45
c	0.40	0.50	0.60
D	14.80	15.10	15.40
D1	9.10	9.20	9.30
D2	8.00	--	--
E	9.70	9.90	10.20
E1	9.68	9.88	10.08
E2	7.80	--	--
e	2.54 (BSC)		
H	1.00	1.20	1.40
L	4.30	4.60	4.90
L1	1.10	1.30	1.50
L2	2.10	2.30	2.50
φP	1.40	1.50	1.60
Q	0.50 (REF)		
θ	16°	20°	24°
θ1	1°	3°	5°
θ2	0°	--	9°

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