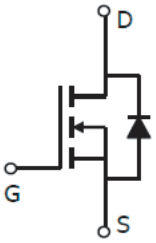
RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

RM5N150S8

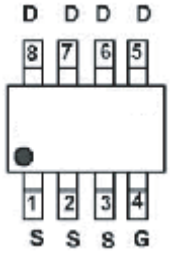
N-Channel Enhancement Mode Power MOSFET

Description

The RM5N150S8 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications.



Schematic diagram



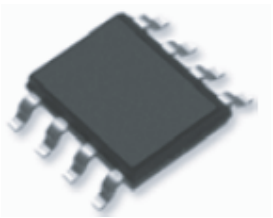
Marking and pin assignment

General Features

- V_{DS} = 150V,I_D =4.6A
  $R_{DS(ON)}$ < 75mΩ @ V_{GS}=10V (Typ:63mΩ)
  $R_{DS(ON)}$ < 88mΩ @ V_{GS}=4.5V (Typ:70m Ω)
- Special process technology for high ESD capability
- High density cell design for ultra low Rdson
- Fully characterized avalanche voltage and current

Application

- DC/DC Primary Side Switch
- Telecom/Server
- Synchronous Rectification
- Halogen-free


SOP-8 top view

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
5N150	RM5N150S8	SOP-8	Ø330mm	12mm	4000 units

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	4.6	A
Drain Current-Continuous(T_C=100℃)	I_D (100℃)	2.9	A
Pulsed Drain Current	I_{DM}	35	A
Maximum Power Dissipation	P_D	3.1	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

Thermal Characteristic

Thermal Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	40	℃/W

Electrical Characteristics (T_A=25℃unless otherwise noted)

Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	150	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250μA	1	2	3	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=150V, T_j=25℃	-	-	1	μA
		V_{GS}=0V, V_{DS}=150V, T_j=100℃	-	-	100	
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Drain to Source on Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=5A	-	63	75	mΩ
		V_{GS}=4.5V, I_D=4A	-	70	88	
Transconductance	g_{fs}	V_{DS}=5V, I_D=5A	-	18	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS} Open, f=1MHz	-	5.0	-	Ω

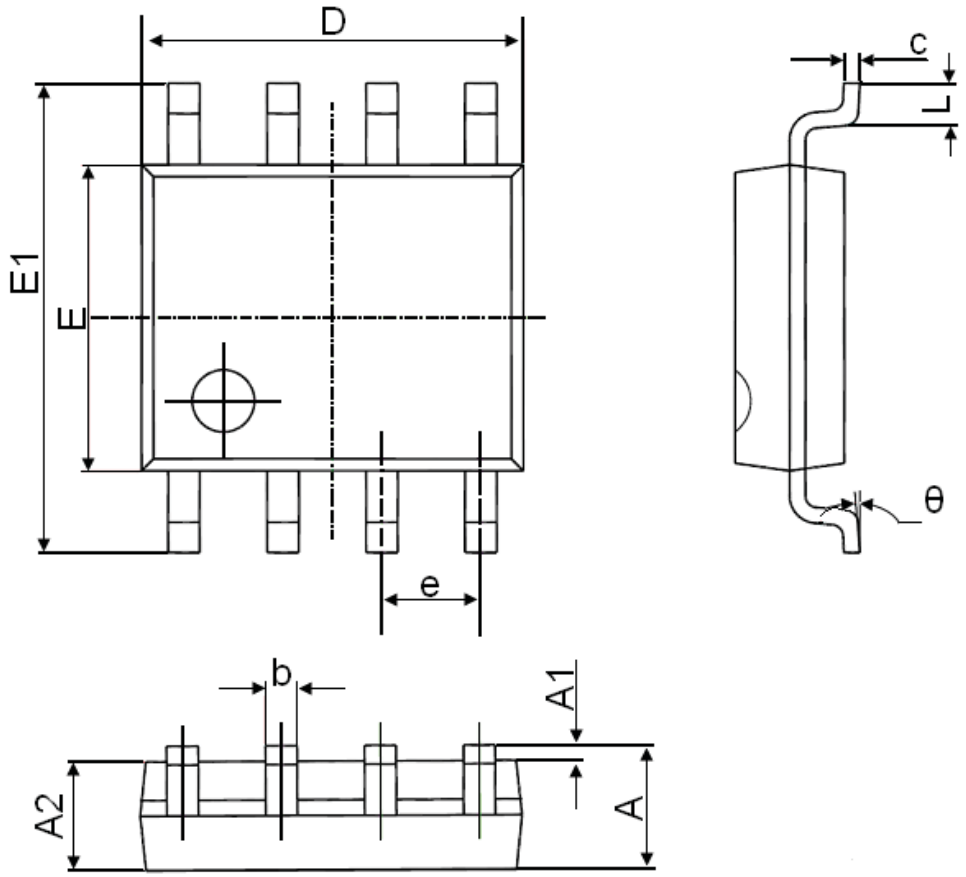
Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=75V, f=1MHz	-	625	-	pF
Output Capacitance	C_{oss}		-	37	-	
Reverse Transfer Capacitance	C_{rss}		-	13	-	
Total Gate Charge (10V)	Q_g(10V)	V_{DD}=75V, I_D=5A, V_{GS}=10V	-	11.6	-	nC
Total Gate Charge (4.5V)	Q_g(4.5V)			6.5		
Gate to Source Charge	Q_{gs}		-	1.2	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	4	-	
Turn on Delay Time	$t_{d(on)}$	V_{DD}=75V, I_D=5A, V_{GS}=10V, R_G=10Ω,	-	10	-	ns
Rise time	t_r		-	7	-	
Turn off Delay Time	$t_{d(off)}$		-	14	-	
Fall Time	t_f		-	3	-	

Reverse Diode Characteristics

Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_F=5A	-	0.9	1.2	V
Reverse Recovery Time	t_{rr}	V_R=75V, I_F=5A, dI_F/dt=100A/μs	-	50	-	ns
Reverse Recovery Charge	Q_{rr}		-	70	-	nC

SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

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