

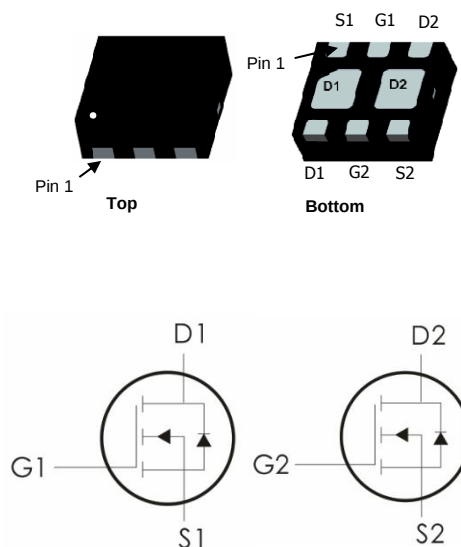
Description:

This Dual N-Channel MOSFET 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.

Features:

- 1) $V_{DS}=30V, I_D=5A, R_{DS(on)} < 24m\Omega @ V_{GS}=10V$ (Typ: $18m\Omega$)
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra low $R_{DS(on)}$.
- 5) Excellent package for good heat dissipation.
- 6) MSL3



Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
RC024DNG	C024DN	DFN2*2-6D	3000pcs/Reel

Absolute Maximum Ratings: ($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_A=25^\circ\text{C}^2$	5	A
	Continuous Drain Current- $T_A=100^\circ\text{C}^2$	3.5	
I_{DM}	Drain Current – Pulsed ²	20	A
P_D	Power Dissipation - $T_A=25^\circ\text{C}$	2	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	$^\circ\text{C}$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62	$^\circ\text{C}/\text{W}$

Electrical Characteristics: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Sourctce Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	30	---	---	V
I _{DSS}	Drain-Source Leakage Current	V _{GS} =0V, V _{DS} =30V	---	---	1	μ A
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 20V, V _{DS} =0A	---	---	± 100	nA
On Characteristics						
V _{GS(th)}	Gate-Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μ A	1.2	1.5	2.5	V
R _{DS(ON)}	Drain-Source On Resistance ³	V _{GS} =10V, I _D =3A	---	18	24	m Ω
		V _{GS} =4.5V, I _D =2A	---	27	34	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz	---	450	---	pF
C _{oss}	Output Capacitance		---	57.7	---	
C _{rss}	Reverse Transfer Capacitance		---	48	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DD} =15V , V _{GS} =10V , R _G =3 Ω , I _D =3A	---	2	---	ns
t _r	Rise Time		---	2.5	---	ns
t _{d(off)}	Turn-Off Delay Time		---	10.5	---	ns
t _f	Fall Time		---	2	---	ns
Q _g	Total Gate Charge	V _{DS} =15V , V _{GS} =10V , I _D =3A	---	10	---	nC
Q _{gs}	Gate-Source Charge		---	1.2	---	nC
Q _{gd}	Gate-Drain “Miller” Charge		---	1.8	---	nC
Drain-Source Diode Characteristics						
I _S	Continuous Drain Curren	V _D =V _G =0V	---	---	5	A
I _{SM}	Pulsed Drain Current		---	---	20	A
V _{SD}	Source-Drain Diode Forward Voltage	V _{GS} =0V , I _{SD} =3A, T _J =25 °C	---	---	1.2	V

Notes:

1. Computed continuous current assumes the condition of $T_{j,Max}$ while the actual continuous current depends on the thermal & electro-mechanical application board design
2. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$

Test Circuit

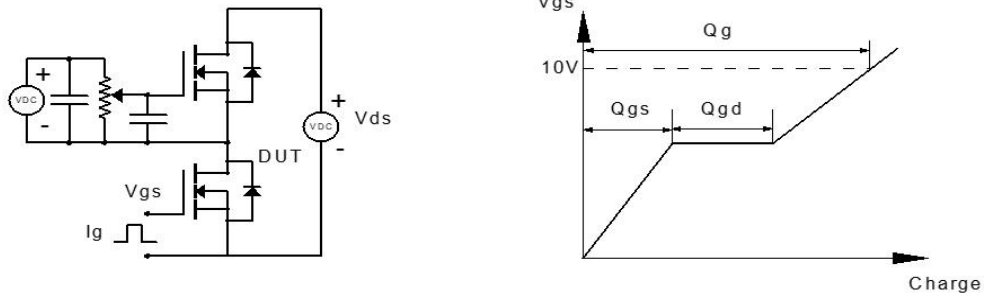


Figure 1: Gate Charge Test Circuit & Waveform

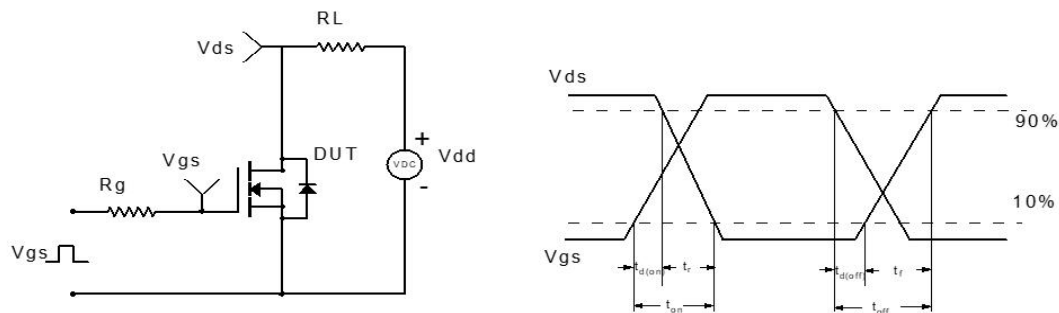


Figure 2: Resistive Switching Test Circuit & Waveform

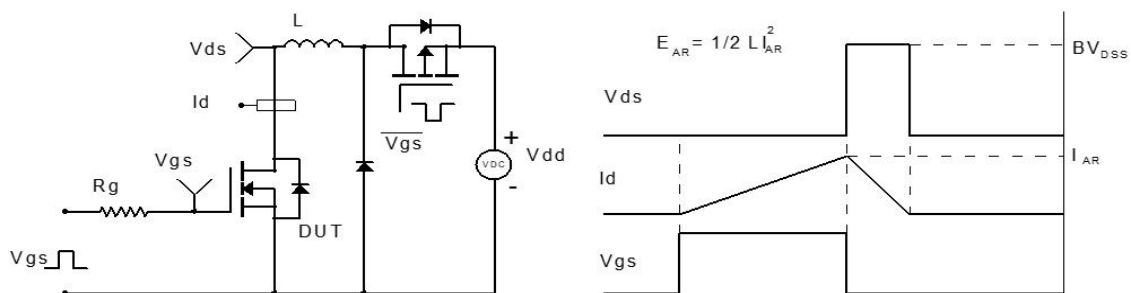


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

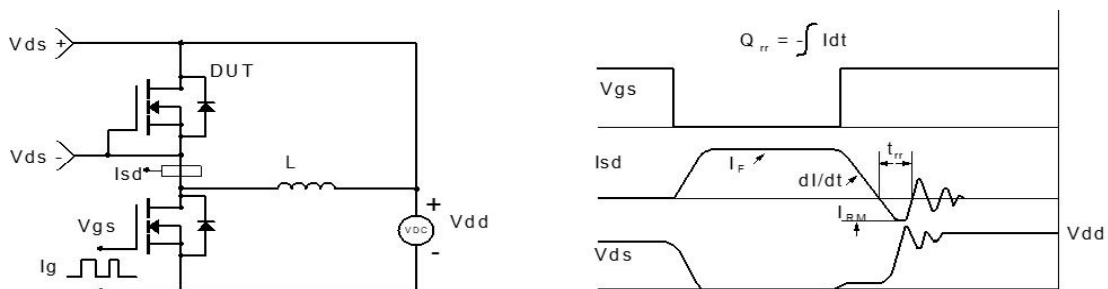
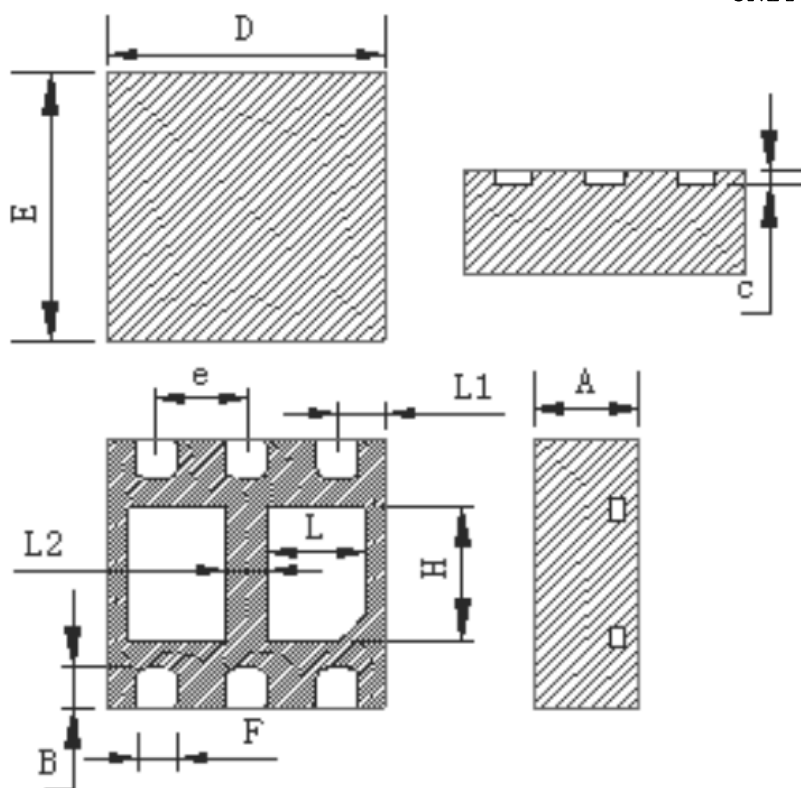


Figure 4: Diode Recovery Test Circuit & Waveform

DFN2X2-6D Package Outline Data

UNIT: mm



Symbol	Min	Typ	Max
A	0.68	0.75	0.80
B	0.20	0.30	0.40
C		0.203	
D	1.90	2.00	2.10
E	1.90	2.00	2.10
e		0.65	
F	0.20	0.30	0.40
H	0.85	1.00	1.10
L	0.55	0.70	0.80
L1	0.25	0.35	0.45
L2	0.20	0.30	0.40

Marking Information:

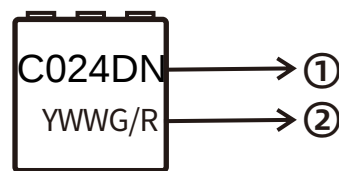
①: Part NO.

②: Date Code (YWWG / R)

Y: Year Code , last digit of the year

WW : Week Code (01-53)

G/R: G(Green) /R(Lead Free)



Previous Version

Version	Date	Subjects (major changes since last revision)
1.1	2026-02-10	Release of final version

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