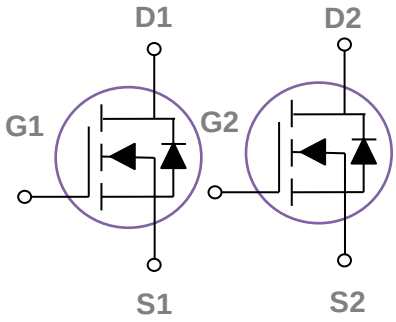
Description：

This Dual N-Channel MOSFET uses advanced trench technology to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency fast switching applications.



Features：

1) V_{DS}=30V,I_D=35A,$R_{DS(ON)}$<10mΩ @V_{GS}=10V
2) Improved dv/dt capability
3) Fast switching
4) 100% EAS Guaranteed
5) Green Device Available.

Package Marking and Ordering Information：

Part NO.	Marking	Package	Reel Size	Tape width	Quantity
ZC010DNG	C010DN	DFN3*3-8D	13inch	12mm	5000PCS

Absolute Maximum Ratings： (T_C=25℃ 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_C=25℃	35	A
	Continuous Drain Current-T_C=100℃	20	
I_{DM}	Pulsed Drain Current[note1]	120	A
E_{AS}	Single Pulsed Avalanche Energy [note2]	20	mJ
P_D	Power Dissipation	22	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	5.68	℃/W

Electrical Characteristics: (T_J=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	30	---	---	V
I_{DSS}	Drain-Source Leakage Current	V_{GS}=0V, V_{DS}=30V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0V	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1	1.5	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance[note3]	V_{GS}=10V,I_D=20A	---	8.5	10	mΩ
		V_{GS}=4.5V,I_D=10A	---	13	16	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1MHz	---	1005	---	pF
C_{oss}	Output Capacitance		---	140	---	
C_{rss}	Reverse Transfer Capacitance		---	116	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=15V , V_{GS}=10V R_{GEN}=3Ω ,I_D=20A	---	6	---	ns
t_r	Rise Time		---	5	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	25	---	ns
t_f	Fall Time		---	7	---	ns
Q_g	Total Gate Charge	V_{DS}=15V , V_{GS}=10V ,I_D=10A	---	19	---	nC
Q_{gs}	Gate-Source Charge		---	6.3	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	4.5	---	nC
Drain-Source Diode Characteristics						
I_S	Contiuos Source Curent	VD=VG=0V	---	---	35	A
I_{SM}	Pulsed Source Curent	VD=VG=0V	---	---	120	A
V_{SD}	Source-Drain Diode Forward Voltage	V_{GS}=0V , I_S=22A	---	---	1.2	V
t_{rr}	Reverse Recovery Time	I_F=10A ,di/dt=100A/μs	---	7	---	nS
Q_{rr}	Reverse Recovery Charge		---	6.3	---	nC

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. E_{AS} condition: T_J=25℃, V_{GS}=10V, R_G=25Ω， L=0.5mH， I_{AS}=9.8A

3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Characteristics： (T_C=25℃ unless otherwise noted)

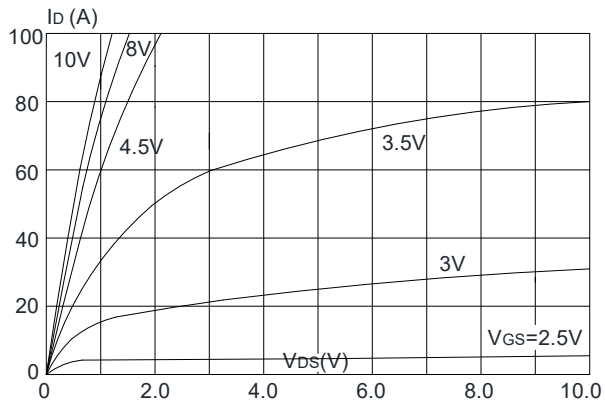


Figure1: Output Characteristics

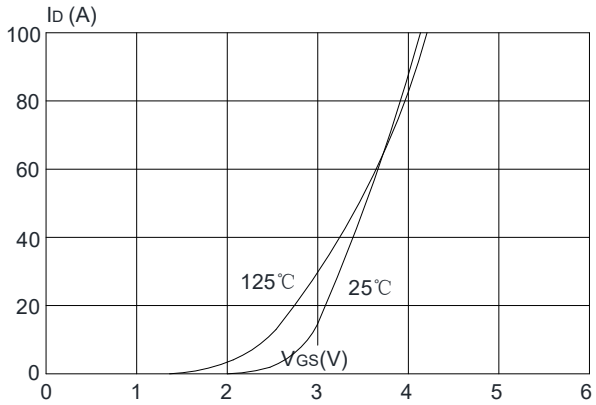


Figure 2: Typical Transfer Characteristics

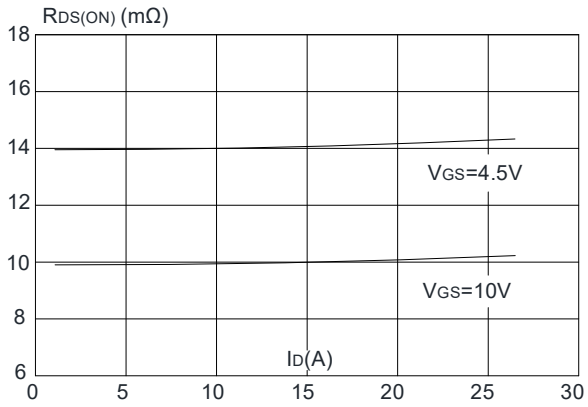


Figure 3: On-resistance vs. Drain Current

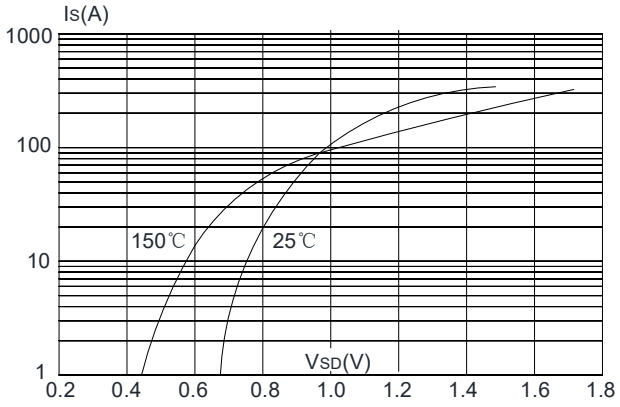


Figure 4: Body Diode Characteristics

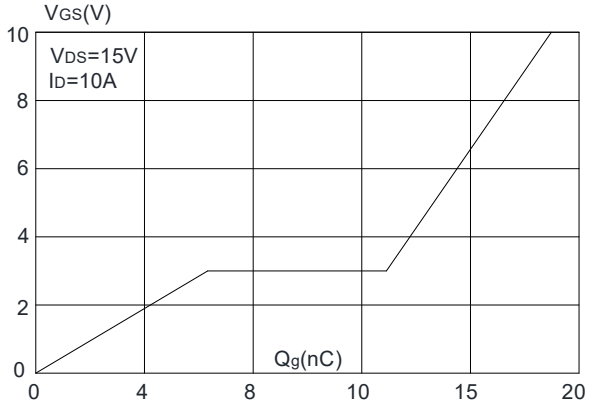


Figure 5: Gate Charge Characteristics

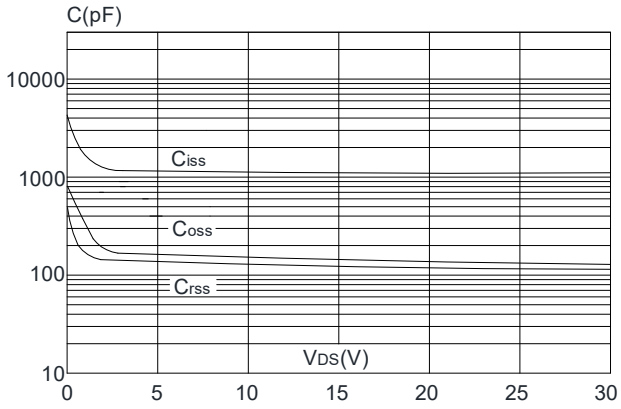


Figure 6: Capacitance Characteristics

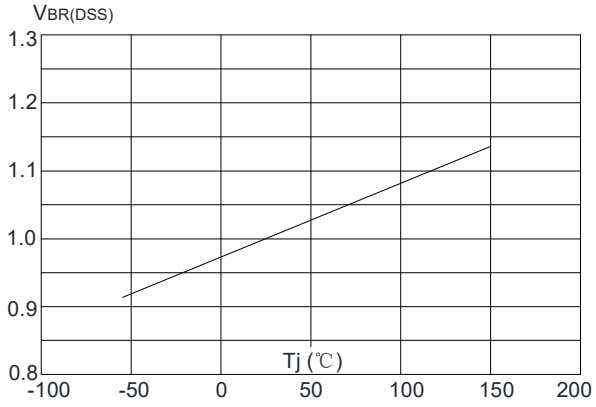


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

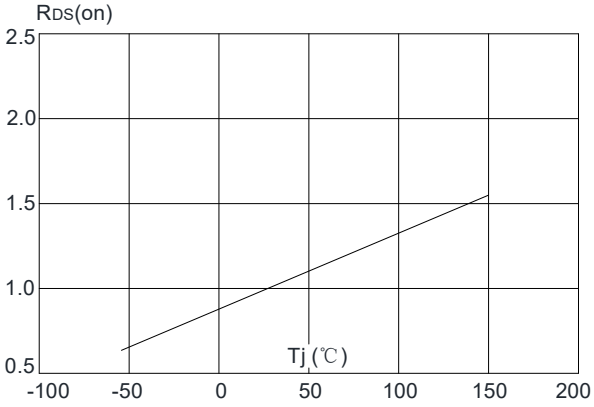


Figure 8: Normalized on Resistance vs. Junction Temperature

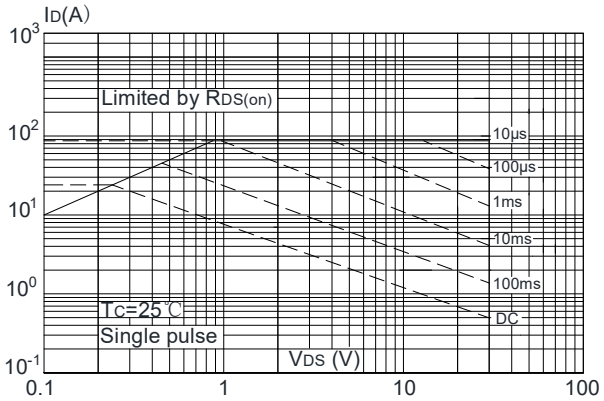


Figure 9: Maximum Safe Operating Area

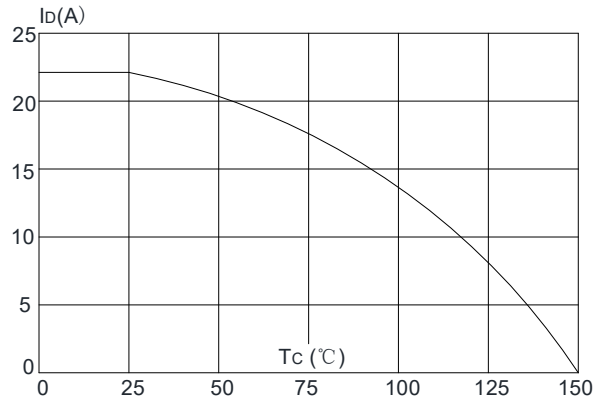


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

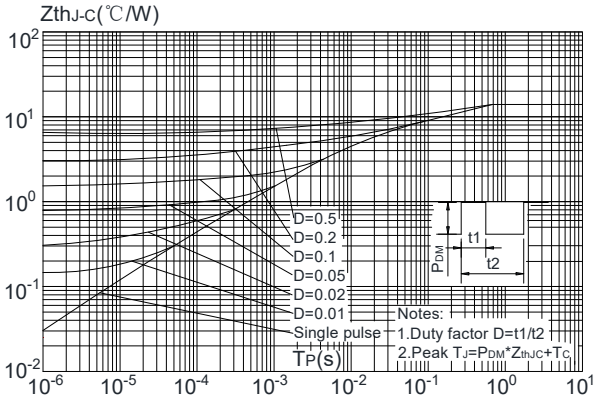
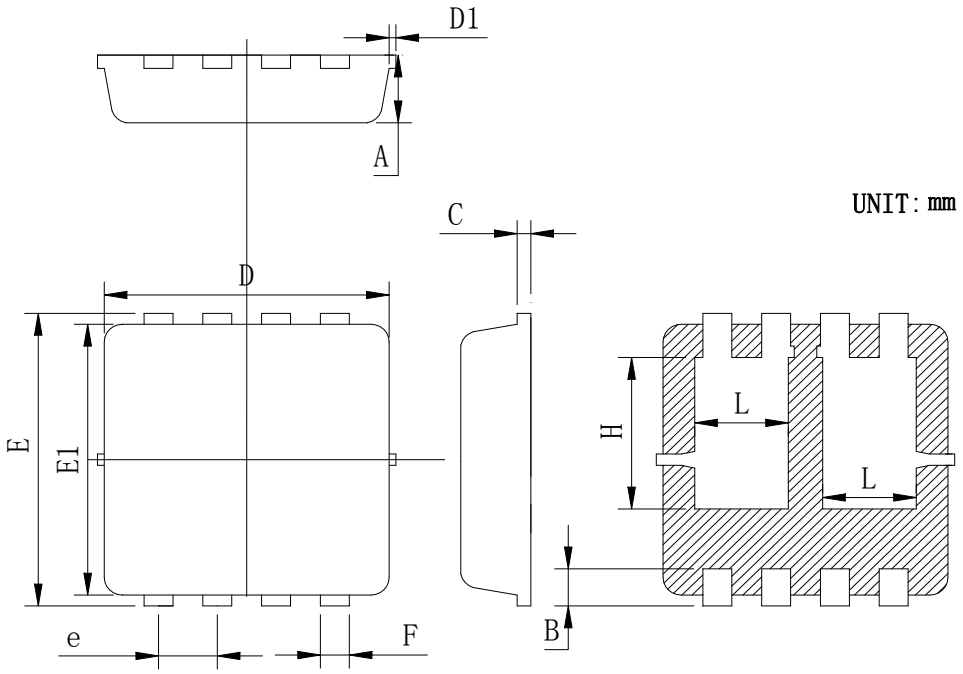


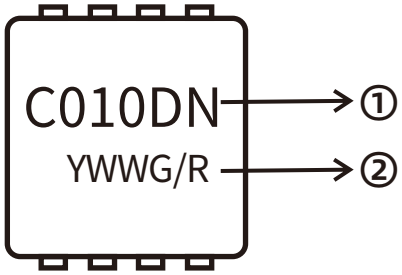
Figure.11: Maximum Effective
Transient Thermal Impedance, Junction-to-Case

DFN3X3-8DPackage Outline Data



Symbol	Min	Typ	Max
A	0.725	0.775	0.825
B	0.28	0.38	0.48
C	0.13	0.15	0.20
D	3.05	3.15	3.25
D1			0.10
E	3.25	3.35	3.45
E1	3.0	3.1	3.2
e	0.60	0.65	0.70
F	0.27	0.32	0.37
H	1.63	1.73	1.83
L	0.93	1.03	1.13

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)

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