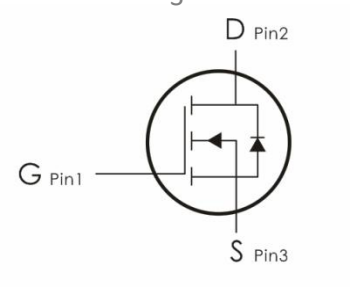
Description：

This 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}=80V,I_D=90A,$R_{DS(ON)}$<8.5mΩ @V_{GS}=10V（Typ：7.6mΩ）
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra low $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.

Package Marking and Ordering Information：

Part NO.	Marking	Package	Packing
PG8R5NFG	G8R5NF	TO- 220	50 pcs/Tube

Absolute Maximum Ratings：（T_C=25℃ unless otherwise noted）

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	80	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current[1]	90	A
	Continuous Drain Current（T_C=100℃）[1]	63	
I_{DM}	Pulsed Drain Current [2]	360	
P_D	Power Dissipation	170	W
E_{AS}	Single pulse avalanche energy [3]	550	mJ
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	0.88	℃/W

Electrical Characteristics: (T_C=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	80	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=80V	---	---	1	μA
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=250μA	2	3	4	V
$R_{DS(ON)}$	Drain-Source On Resistance[4]	V_{GS}=10V,I_D=20A	---	7.6	8.5	mΩ
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1MHz	---	7500	---	pF
C_{oss}	Output Capacitance		---	662	--	
C_{rss}	Reverse Transfer Capacitance		---	430	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=30V, I_D=42A R_{ENG}=10Ω,V_{GS}=10V	---	37.9	---	ns
t_r	Rise Time		---	57	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	89	---	ns
t_f	Fall Time		---	39	---	ns
Q_g	Total Gate Charge	V_{DS}=48V,I_D=84A V_{GS}=10V	---	90	---	nC
Q_{gs}	Gate-Source Charge		---	24	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	32.7	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_{SD}=20A	---	---	1.2	V
I_S	Continuous Drain Current	V_D=V_G=0V	---	---	75	A
I_{SM}	Pulsed Drain Current		---	---	300	A
Trr	Reverse Recovery Time	I_F=84A, dI/dt=100A/us	---	88.3	---	ns
Qrr	Reverse Recovery Charge		---	65.9	---	nC

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. EAS condition : TJ=25℃,VDD=40V,V_G=10V,L=0.5mH
4. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Test Circuit

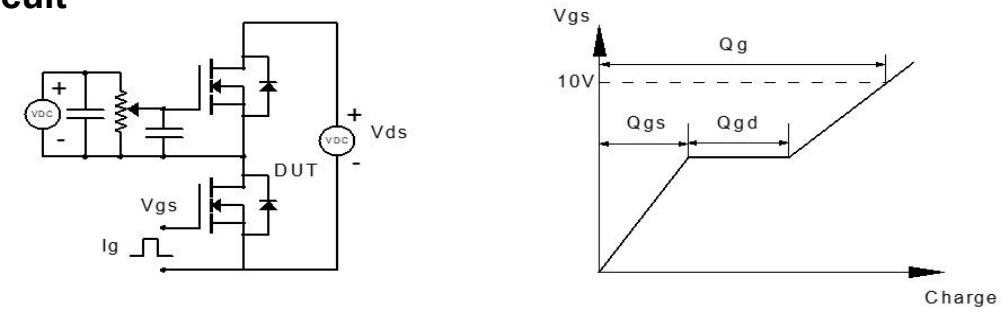


Figure 1: Gate Charge Test Circuit & Waveform

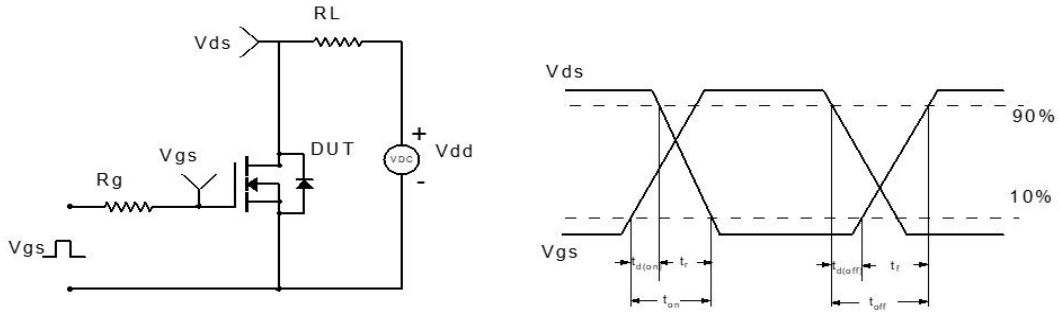


Figure 2: Resistive Switching Test Circuit & Waveform

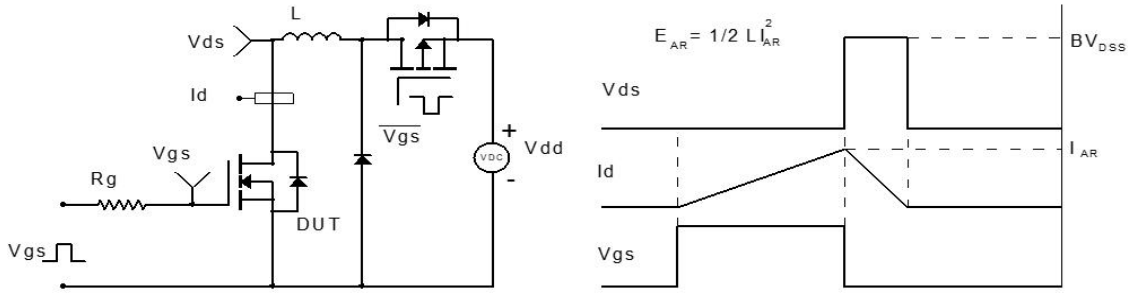


Figure 3: Unclamped Inductive Switching Test Circuit& Waveform

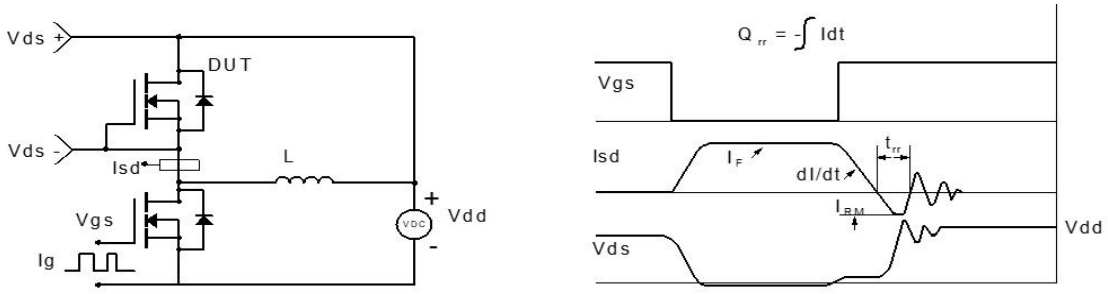
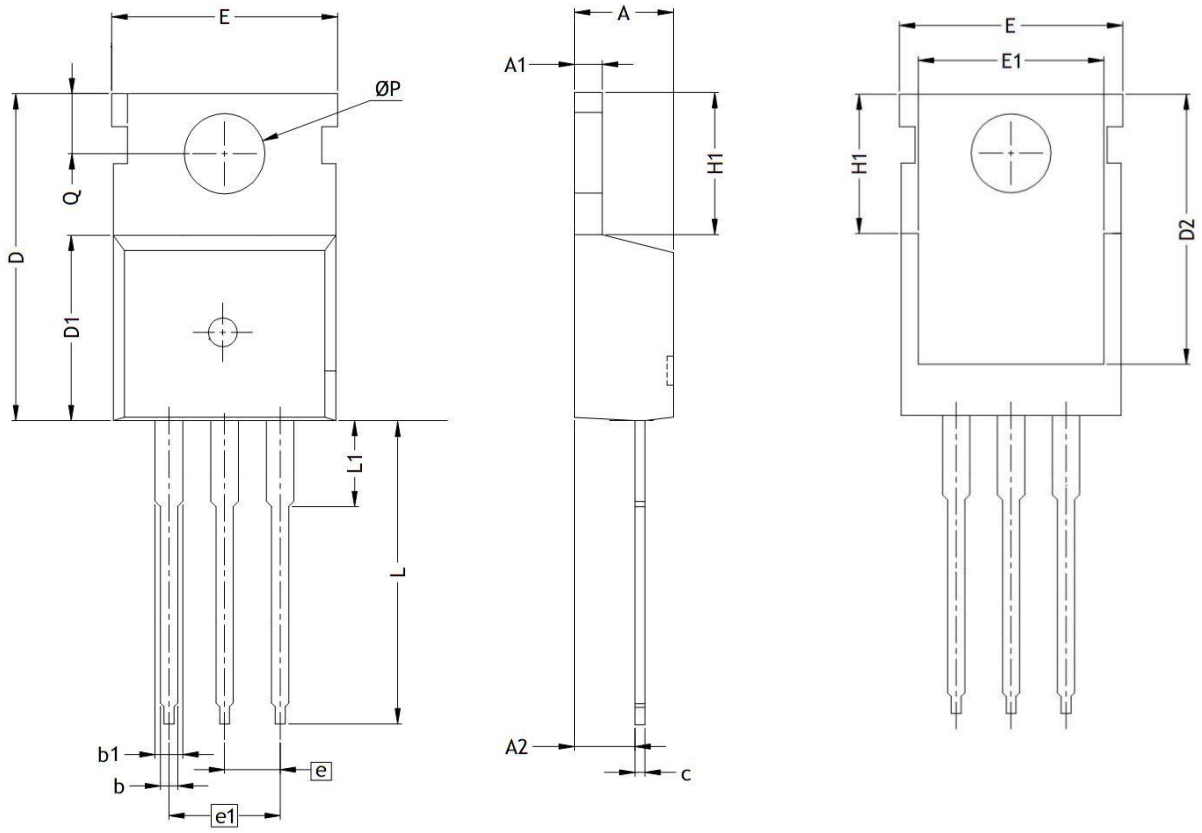


Figure 4: Diode Recovery Test Circuit & Waveform

TO-220 Package Information：



UNIT：mm

SYMBOLS	A	A1	A2	b	b1	c	D	D1	D2	E	E1	e
MIN	4.25	1.25	2.35	0.7	1.15	0.45	14.35	8.80	13.05	9.90	7.85	2.540
MAX	4.65	1.35	2.55	0.9	1.75	0.60	15.95	9.50	13.65	10.35	8.85	BSC
SYMBOLS	e1	H1	L	L1	Q	ϕP						
MIN	5.080	6.30	12.85	2.85	2.70	3.50						
MAX	BSC	6.65	13.50	3.25	2.90	3.70						

Marking Information：

①. Doingter LOGO

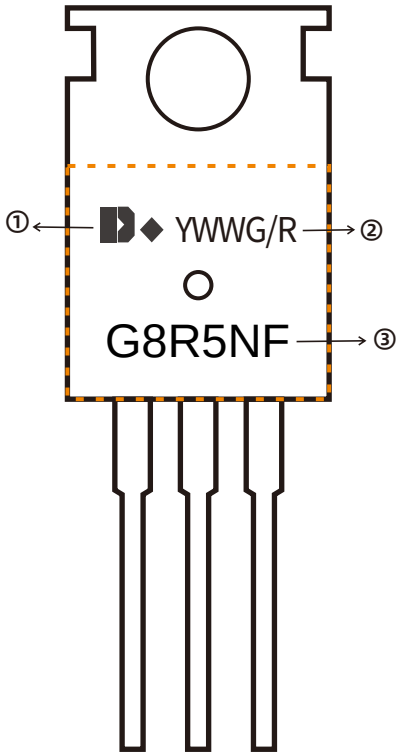
②. Date Code(YWWG / R)

Y : Year Code , last digit of the year

WW : Week Code(01-53)

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

③. Part NO.



Previous Version

Version	Date	Subjects (major changes since last revision)
1.1	2026-01-20	Release of final version

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