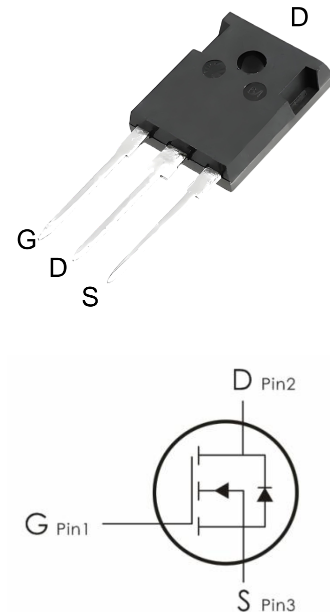
Description:

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}=60V,I_D=130A,$R_{DS(ON)}$<5.5mΩ @V_{GS}=10V（Typ：4.9mΩ）
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.
6) Fast Recovery Body Diode

Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
GE5R5NG-H	E5R5N-H	TO- 247	30 pcs/Tube

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

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current[1]	130	A
	Continuous Drain Current-T_C=100℃[1]	91	
I_{DM}	Pulsed Drain Current[2]	520	
P_D	Power Dissipation	125	W
E_{AS}	Single pulse avalanche energy[3]	272	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	1	℃/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	60	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=60V	---	---	10	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	2.8	4	V
$R_{DS(ON)}$	Drain-Source On Resistance[1]	V_{GS}=10V,I_D=20A	---	4.9	5.5	mΩ
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	---	5100	---	pF
C_{oss}	Output Capacitance		---	495	--	
C_{rss}	Reverse Transfer Capacitance		---	269	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=30V, I_D=30A, R_{ENG}=1.8Ω,V_{GS}=10V	---	11	---	ns
t_r	Rise Time		---	8	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	49	---	ns
t_f	Fall Time		---	14	---	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=30V, I_D=30A	---	103	---	nC
Q_{gs}	Gate-Source Charge		---	13	---	nC
Q_{gd}	Gate-Drain "Miller" Charge		---	31.5	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_{SD}=30A	---	---	1.2	V
I_S	Continuous Drain Current	V_D=V_G=0V	---	---	108	A
I_{SM}	Pulsed Drain Current		---	---	433	A
Trr	Reverse Recovery Time	I_F=30A,T_J=25℃ dI/dt=100A/us	---	26	---	ns
Qrr	Reverse Recovery Charge		---	47	---	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=30V,V_G=10V,L=0.5mH
4. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Test Circuit

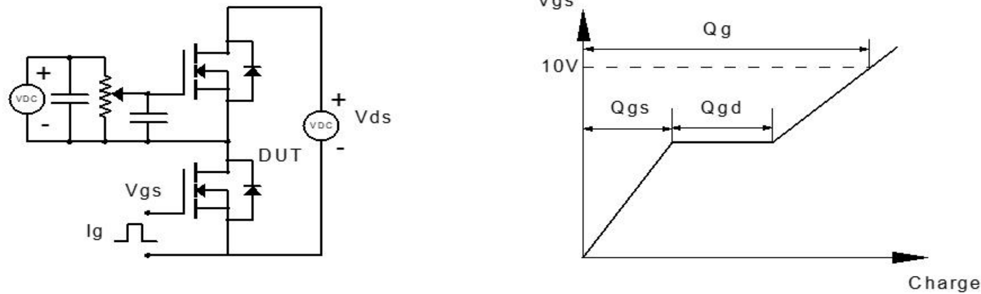


Figure 1: Gate Charge Test Circuit & Waveform

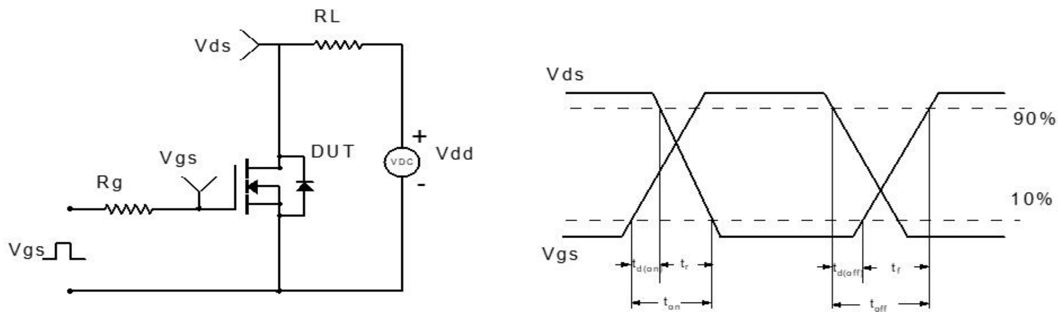


Figure 2: Resistive Switching Test Circuit & Waveform

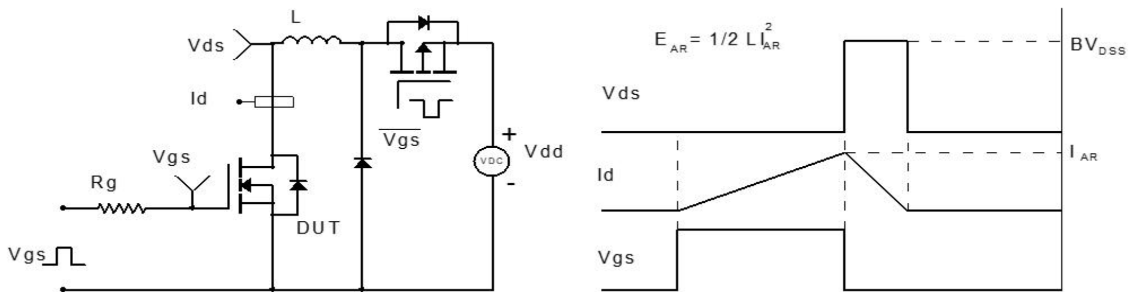


Figure 3: Unclamped Inductive Switching Test Circuit& Waveform

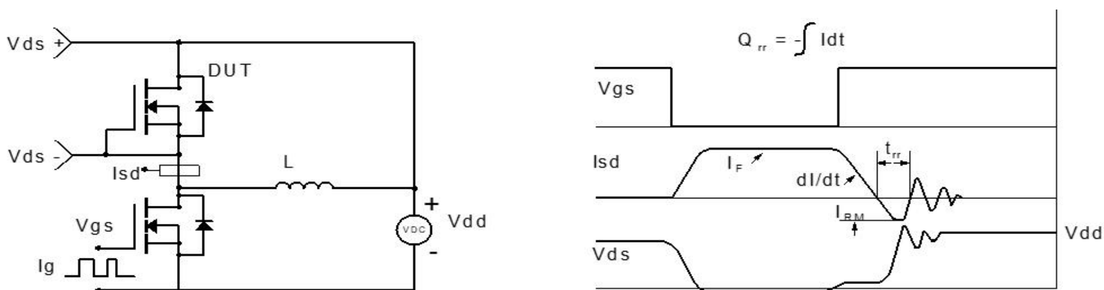
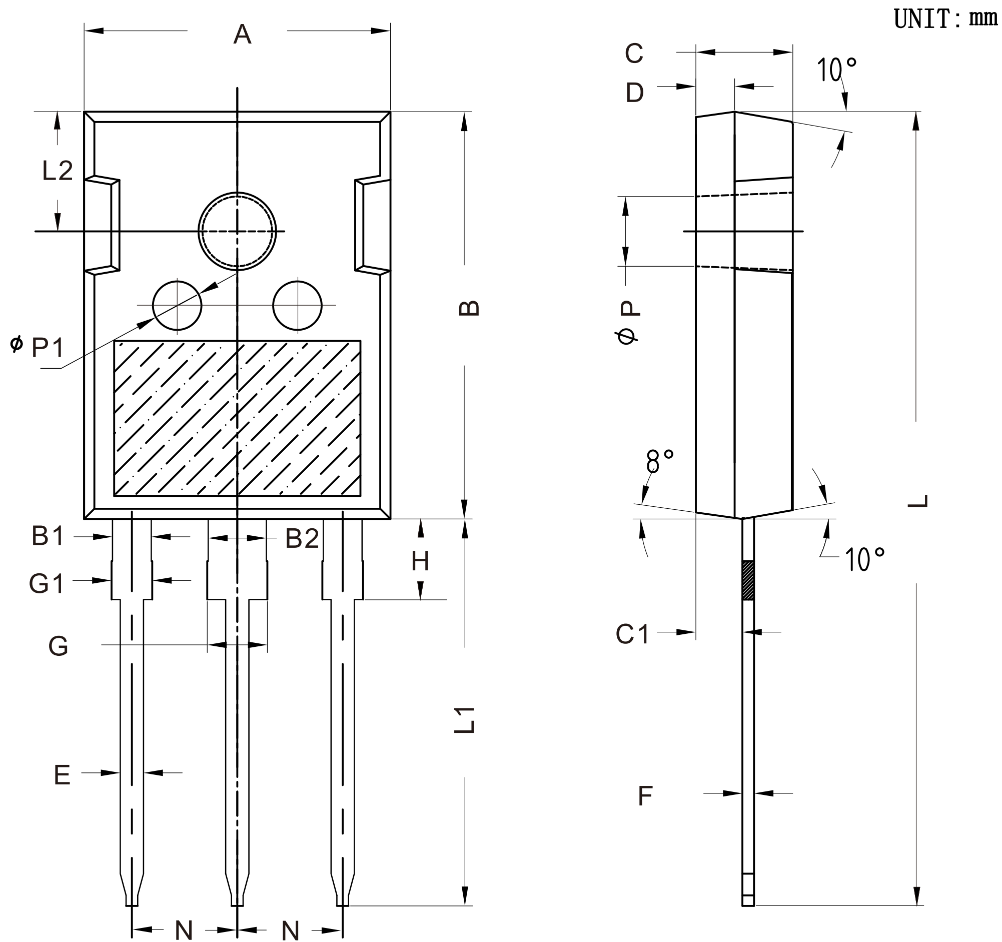


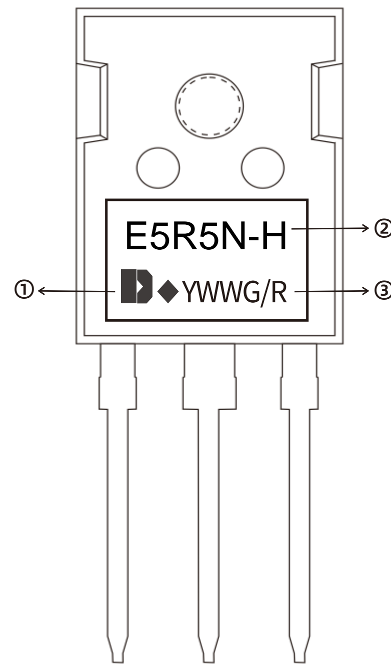
Figure 4: Diode Recovery Test Circuit & Waveform

TO-247 Package Information：



Symbol	Millimeters		Symbol	Millimeters	
	Min.	Max.		Min.	Max.
A	15.6	16.0	G	2.90	3.30
B	19.9	21.2	G1	1.90	2.30
B1	1.80	2.20	H	3.90	4.30
B2	2.80	3.20	L	40.5	41.4
C	4.80	5.20	L1	19.7	20.2
C1	2.20	2.60	L2	6.04	6.30
D	1.90	2.10	N	5.30	5.68
E	1.00	1.40	ǾP	3.40	3.80
F	0.50	0.70	ǾP1	2.20	2.50

Marking Information：



①. Doingter LOGO

②. Part NO.

③. 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)
1.0	2026-01-22	Release of final version

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