

# 4N65

## 产品说明书

### Specification Revision History:

Version	Date	Description
V1.0	2017/05	New
V1.1	2021/09	Modify Ordering Information
V1.2	2025/02	Modify Ordering Information
V1.3	2025/03	Add application precautions and overall typesetting.

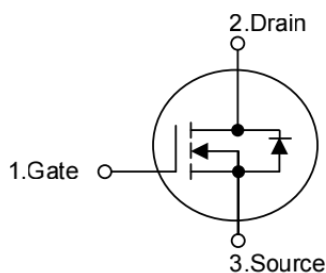
## DESCRIPTION

The 4N65 is a high voltage MOSFET and is designed to have better characteristics, such as fast switching time, low gate charge, low on-state resistance and have a high rugged avalanche characteristics. This power MOSFET is usually used at high speed switching applications in power supplies, PWM motor controls, high efficient DC to DC converters and bridge circuits.

## FEATURES

- \*  $R_{DS(ON)} = 2.7\Omega$  @  $V_{GS} = 3V$
- \* Ultra Low Gate Charge ( typical 15 nC )
- \* Low Reverse Transfer CAPACITANCE (  $C_{RSS} =$  typical 8.0 pF )
- \* Fast Switching Capability
- \* Avalanche Energy Specified
- \* Improved dv/dt Capability, high Ruggedness

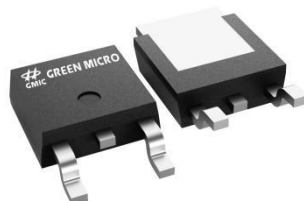
## SYMBOL



## The appearance of the product



TO-220F



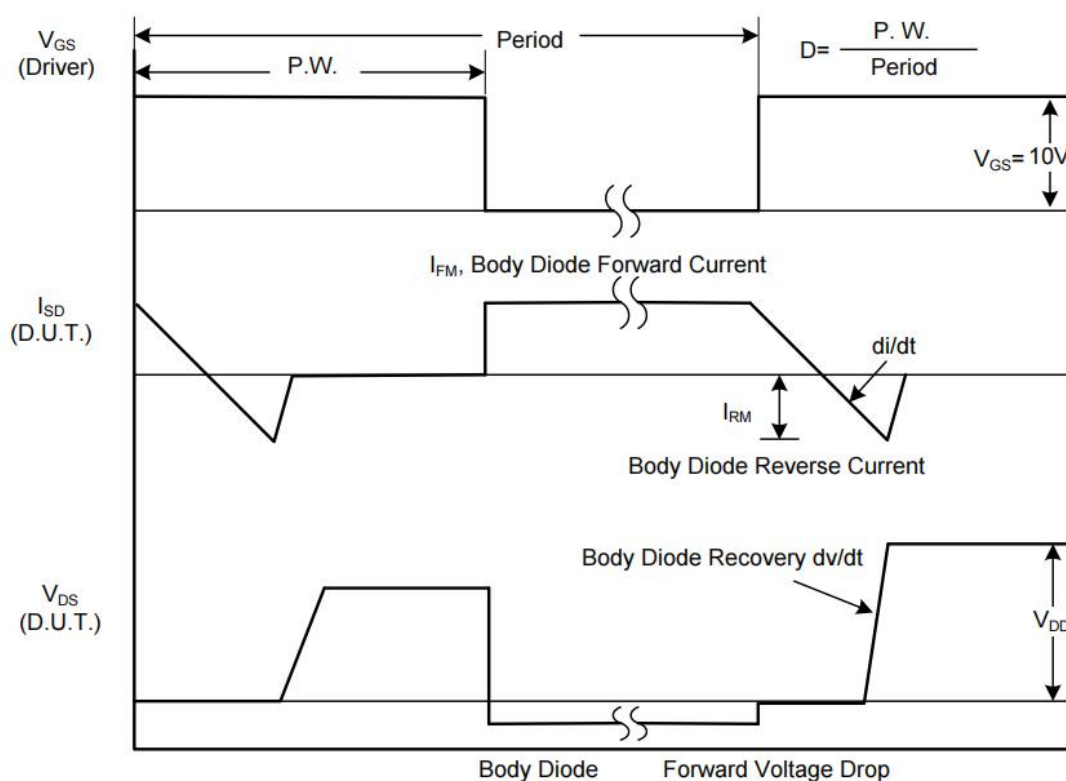
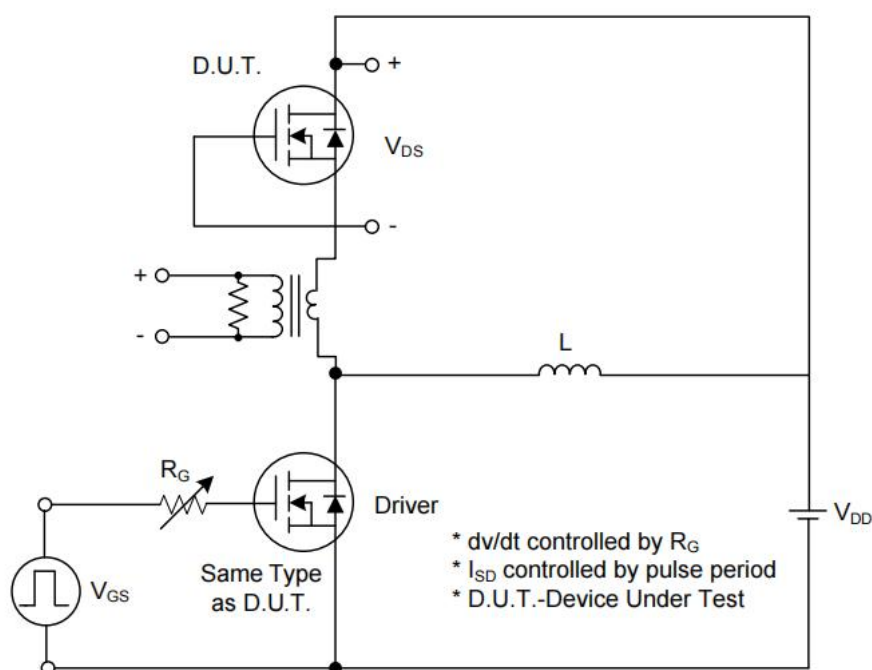
TO-252

## Ordering Information

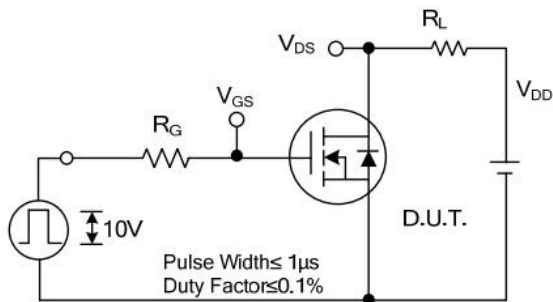
Product Model	Package Type	Marking	Packing	Packing Qty
GM4N65GT	TO-220F	4N65 282	TUBE	1000PCS/BOX
GM4N65GR	TO-252	4N65 282	REEL	2500PCS/REEL
4N65GT	TO-220F	4N65 282	TUBE	1000PCS/BOX
4N65GR	TO-252	4N65 0B82	REEL	2500PCS/REEL

## Electrical Characteristics (T<sub>J</sub> =25°C)

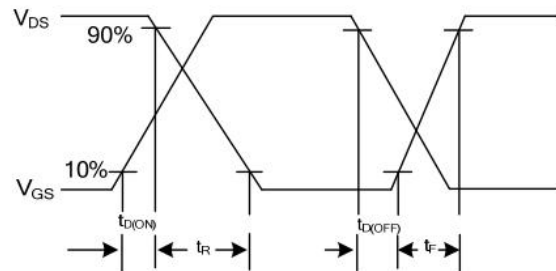
Parameter	Description	Min.	Typ.	Max.	Unit	Test Condition
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	650			V	$V_{GS}=0V, I_D=250\mu A$
$R_{DS(ON)}$ (Note2)	Static Drain-Source On-Resistance		2.7	3.1	$\Omega$	$V_{GS}=10V, I_D=2 A$
$V_{GS(th)}$	Gate Threshold Voltage	2	3	4	V	$V_{DS}=V_{GS}, I_D=250\mu A$
$I_{DSS}$	Drain-to-Source Leakage Current	—	—	1	$\mu A$	$V_{DS}=650V, V_{GS}=0V$
$I_{GSS}$	Gate-Body Leakage Current	—	—	$\pm 100$	nA	$V_{DS}=0V, V_{GS}=\pm 30V$
$V_{sd}$	Drain-Source Diode Forward Voltage	—	—	1.2	V	$V_{GS}=0V, I_S=4A$
$T_J, T_{STG}$	Operating and Storage Temperature Range	-55°C to 150°C Max				



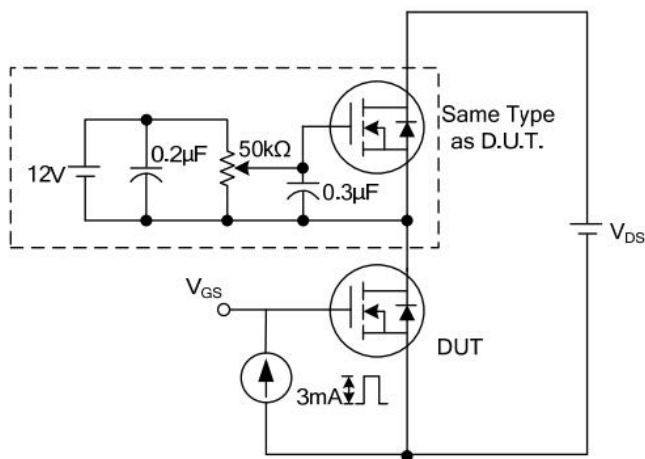
## TEST CIRCUITS AND WAVEFORMS(Cont.)



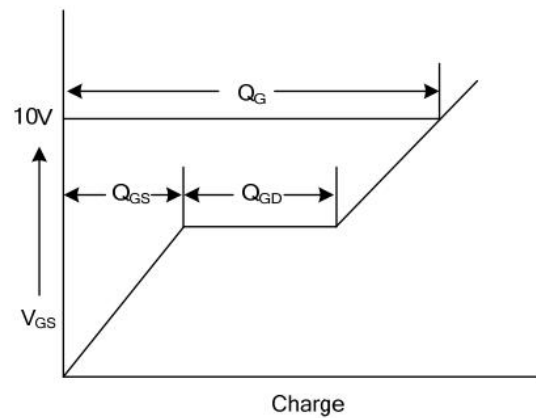
**Fig. 2A Switching Test Circuit**



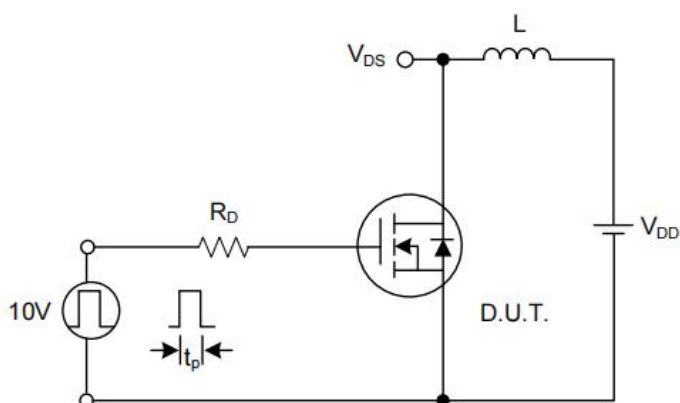
**Fig. 2B Switching Waveforms**



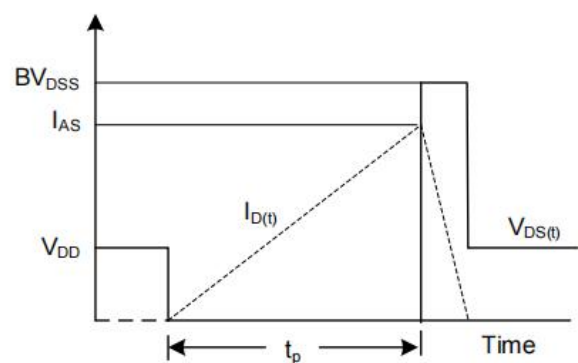
**Fig. 3A Gate Charge Test Circuit**



**Fig. 3B Gate Charge Waveform**

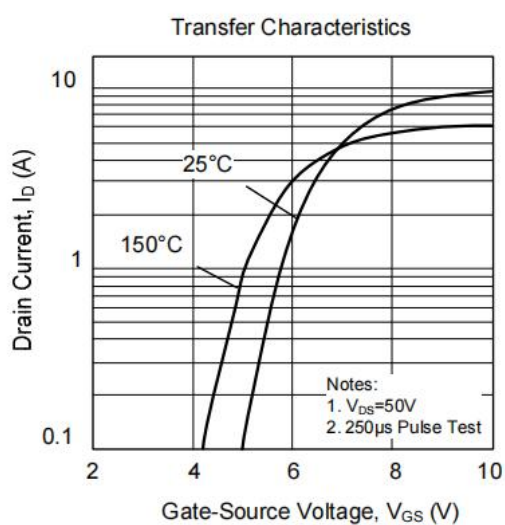
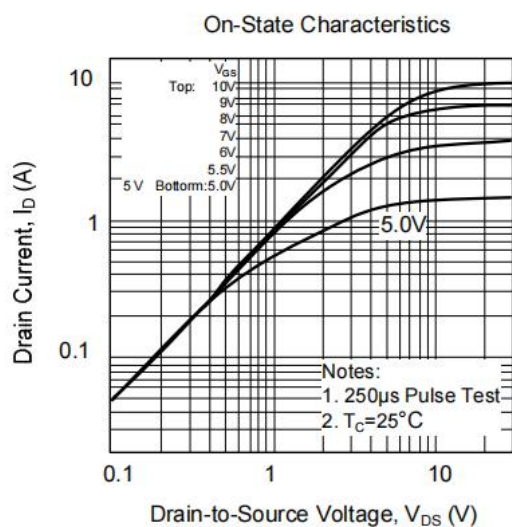
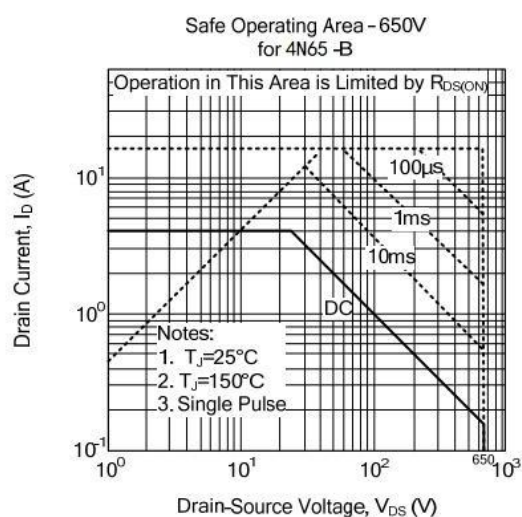
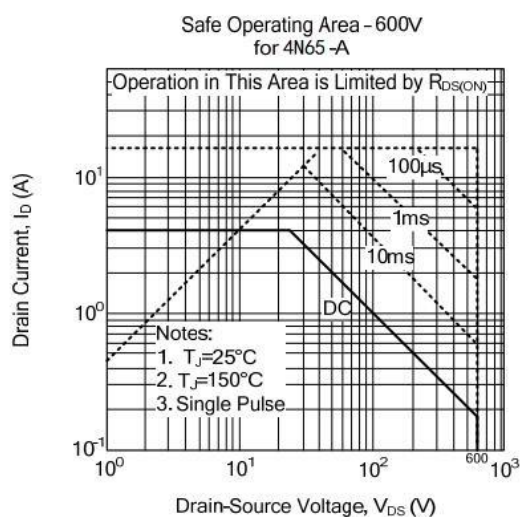
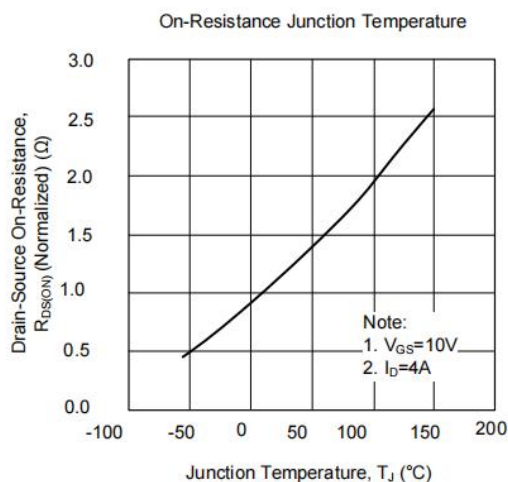
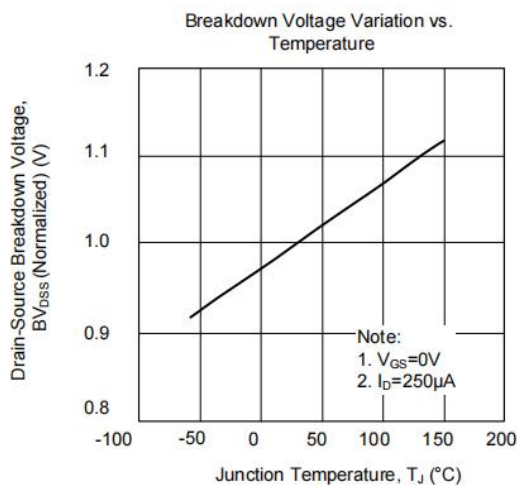


**Fig. 4A Unclamped Inductive Switching Test Circuit**



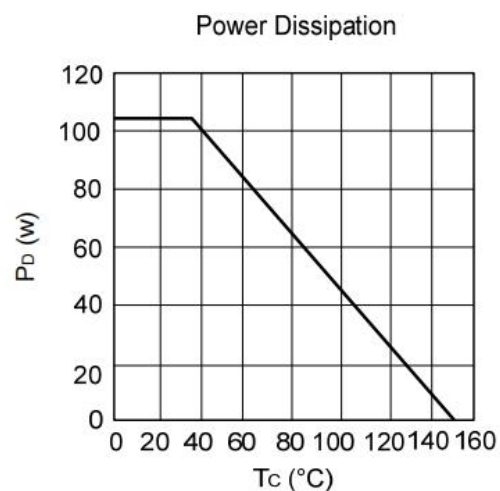
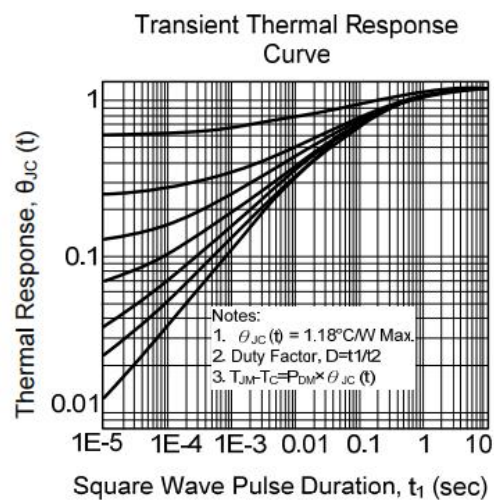
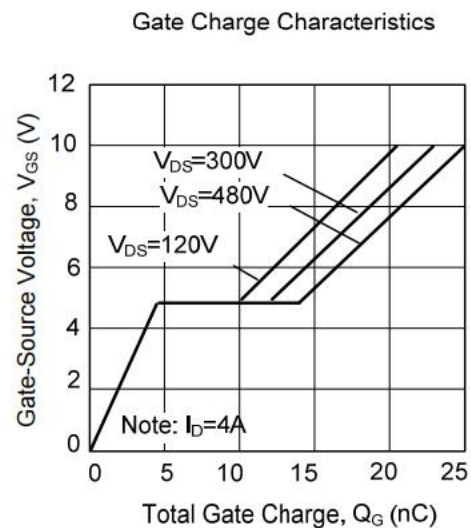
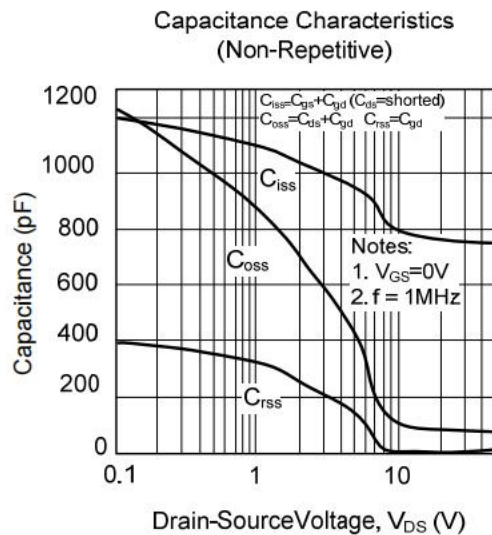
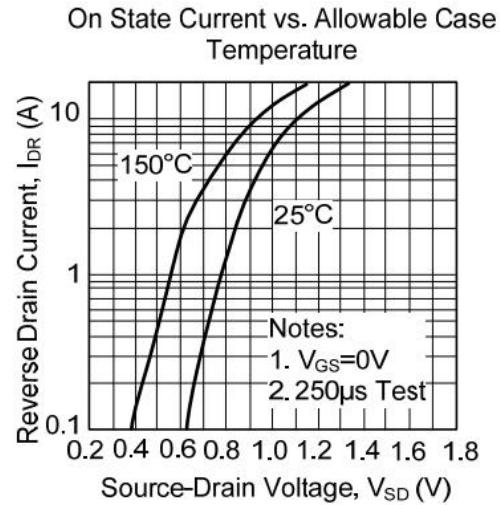
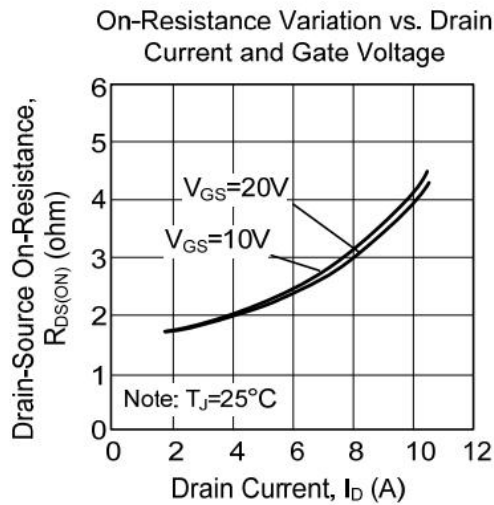
**Fig. 4B Unclamped Inductive Switching Waveforms**

## TYPICAL CHARACTERISTICS

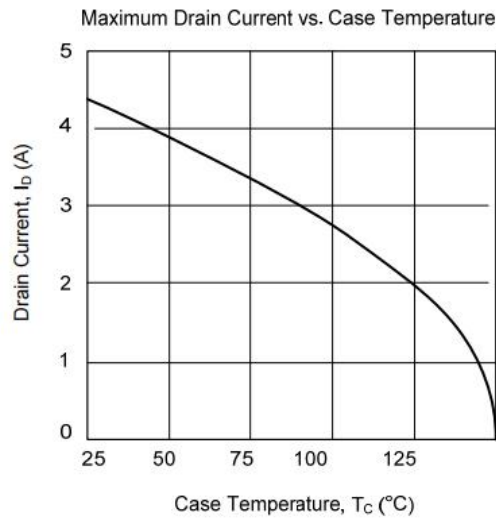




## TYPICAL CHARACTERISTICS(Cont.)



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