

# 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.

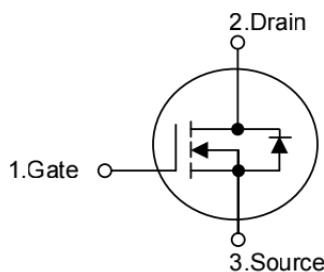
## DESCRIPTION

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

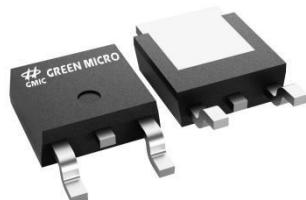
## SYMBOL



## 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 (TJ =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	$\Omega$	$V_{GS}=10V, I_D=2A$
$V_{GS(th)}$	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

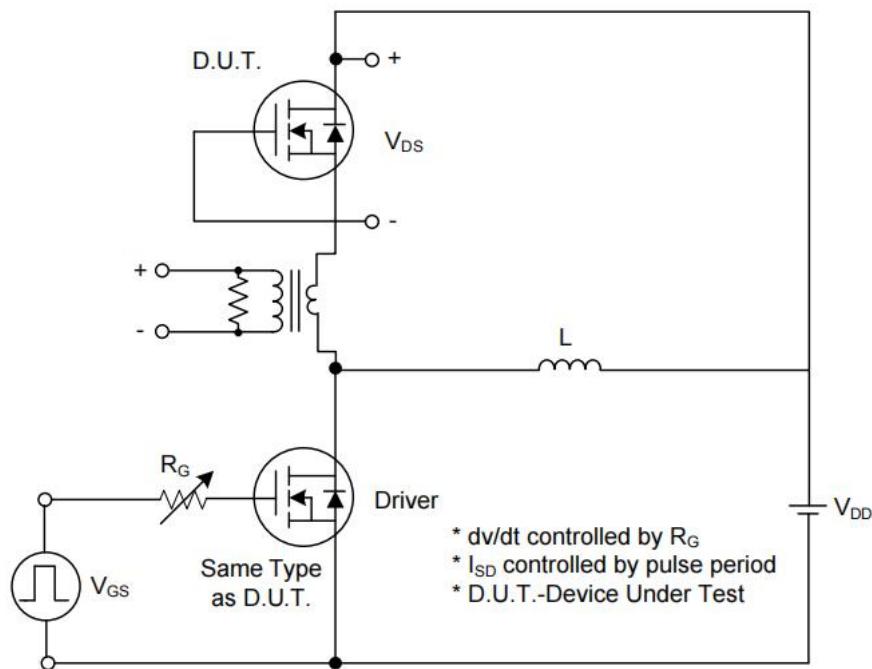


Fig. 1A Peak Diode Recovery dv/dt Test Circuit

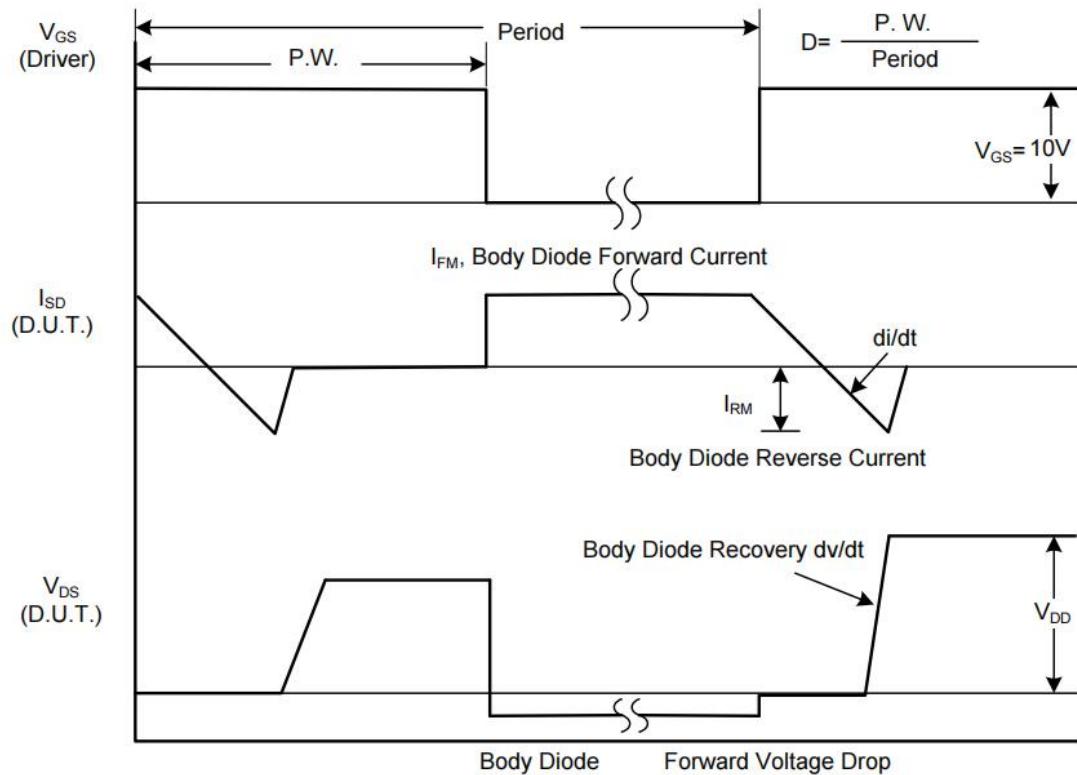


Fig. 1B Peak Diode Recovery dv/dt Waveforms

## TEST CIRCUITS AND WAVEFORMS (Cont.)

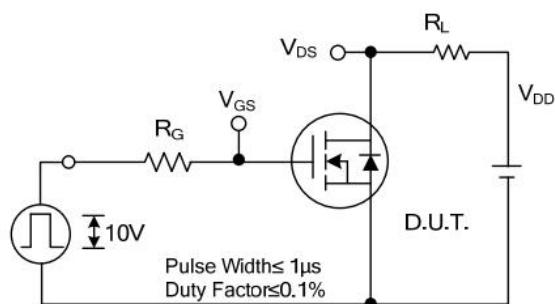


Fig. 2A Switching Test Circuit

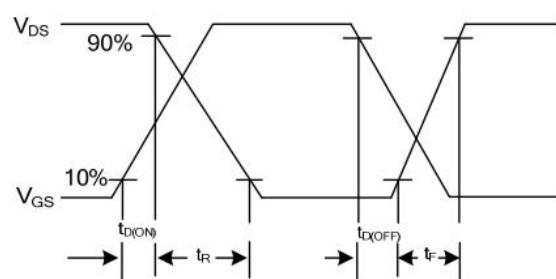


Fig. 2B Switching Waveforms

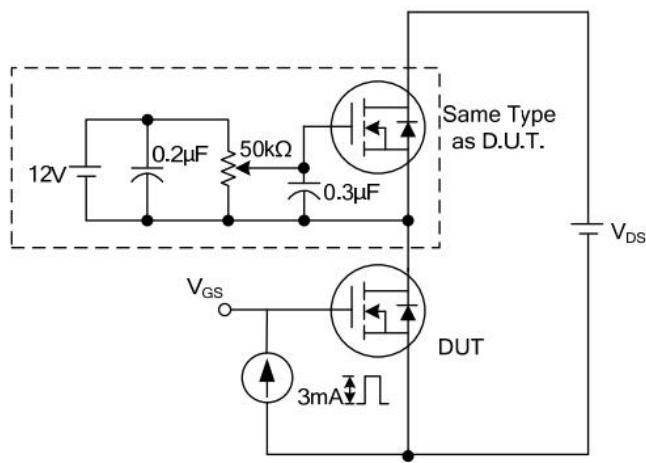


Fig. 3A Gate Charge Test Circuit

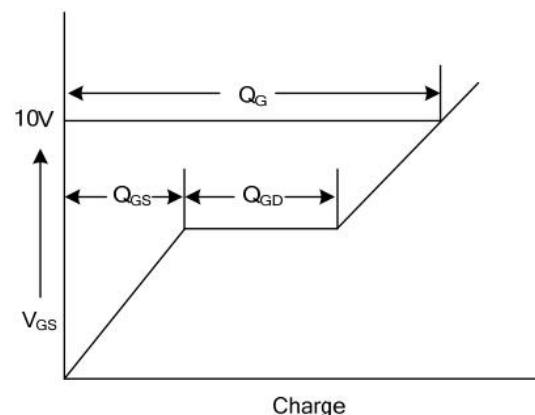


Fig. 3B Gate Charge Waveform

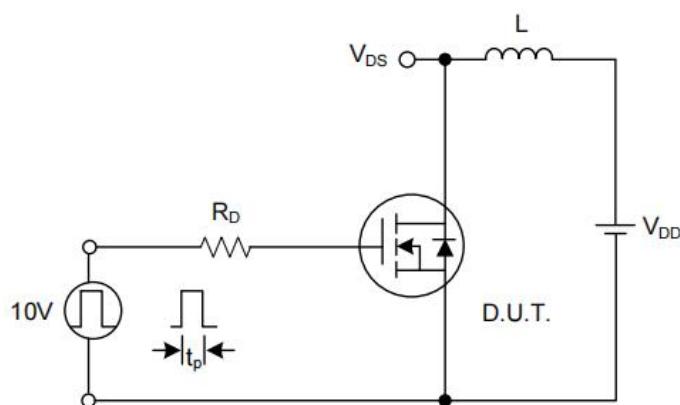


Fig. 4A Unclamped Inductive Switching Test Circuit

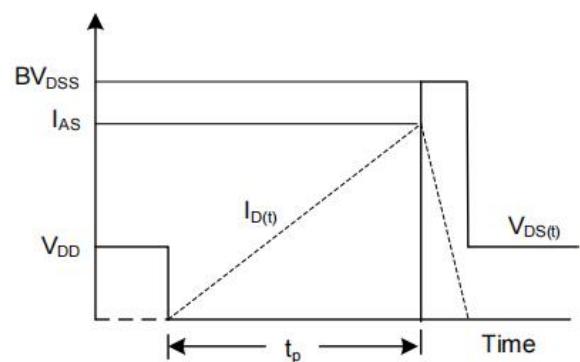
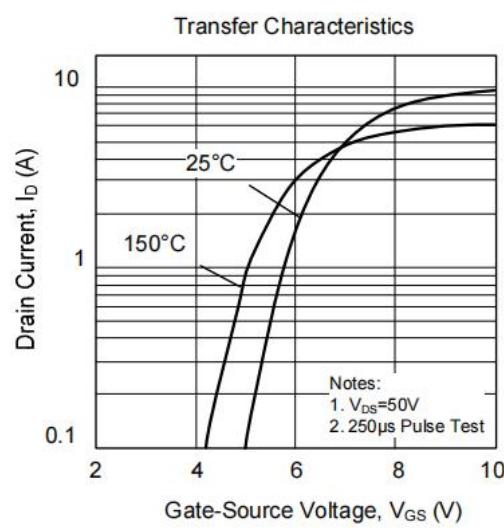
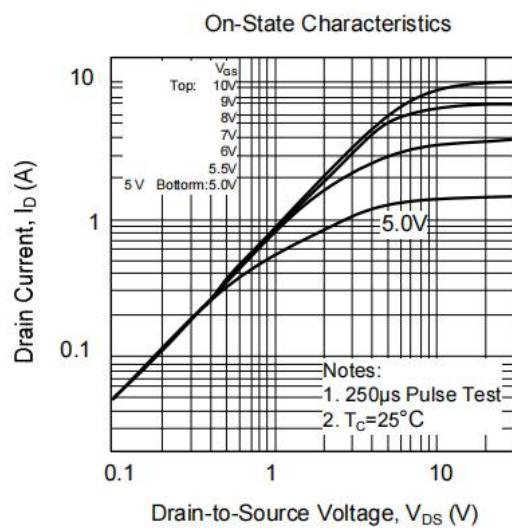
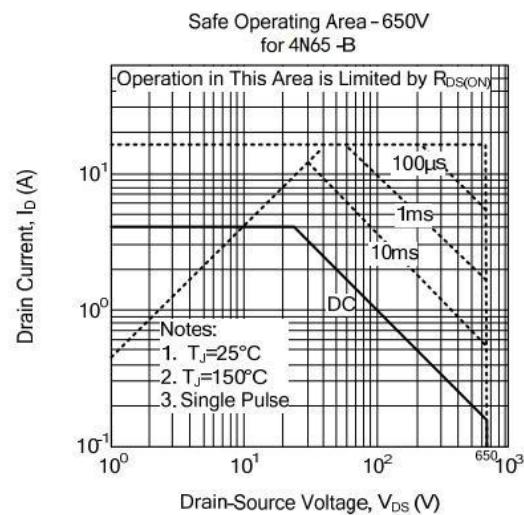
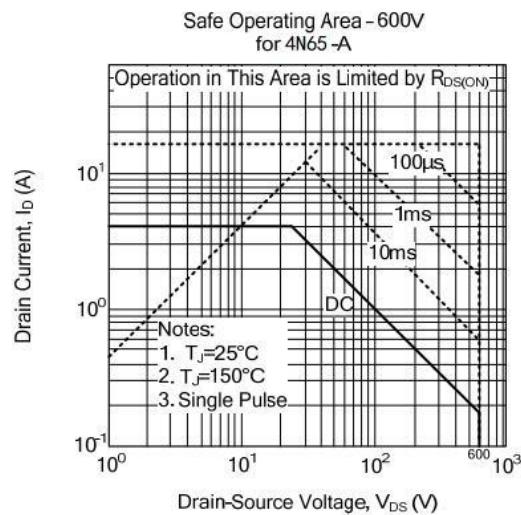
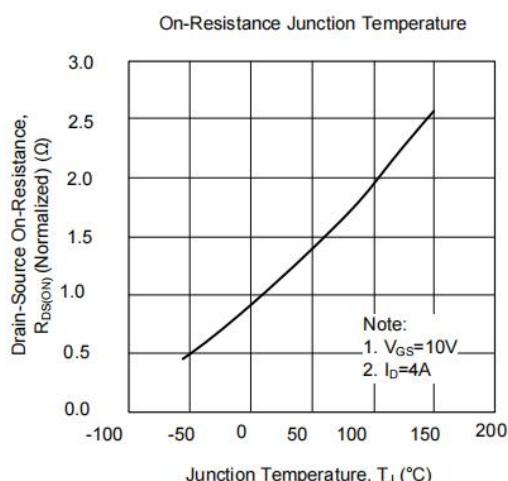
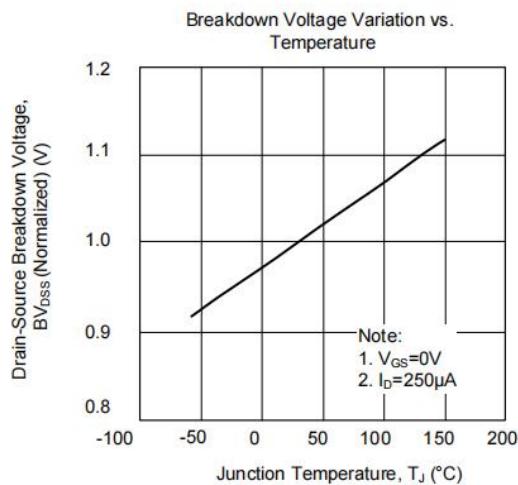
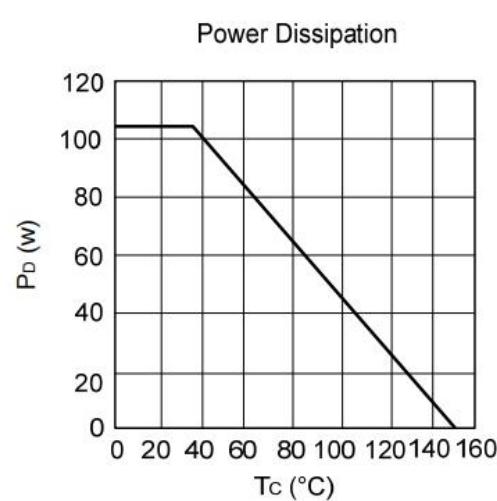
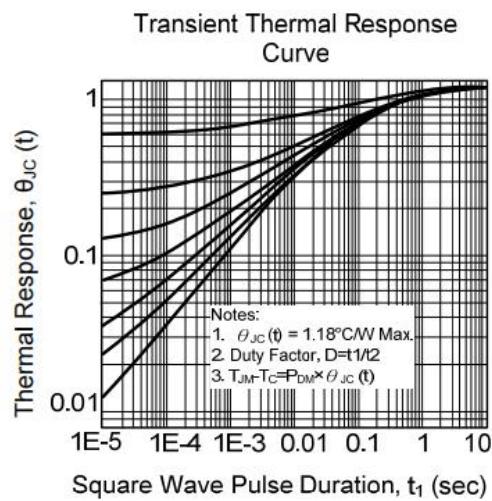
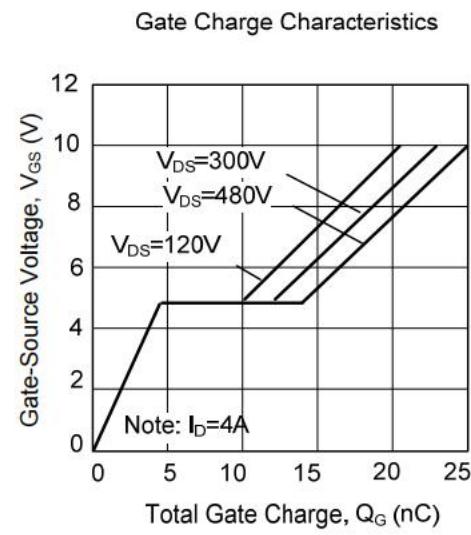
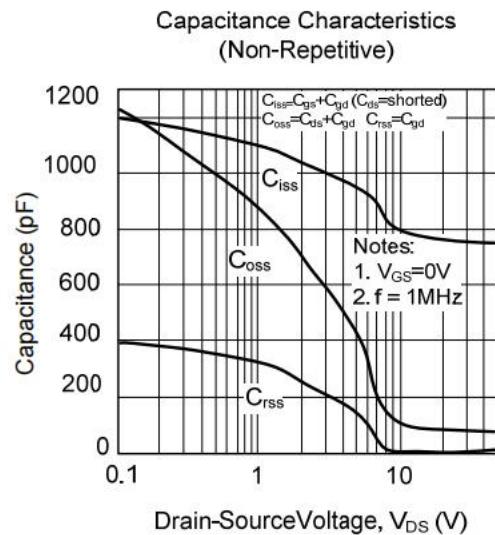
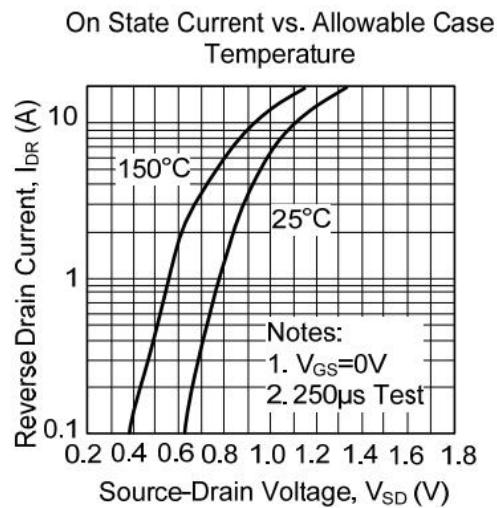
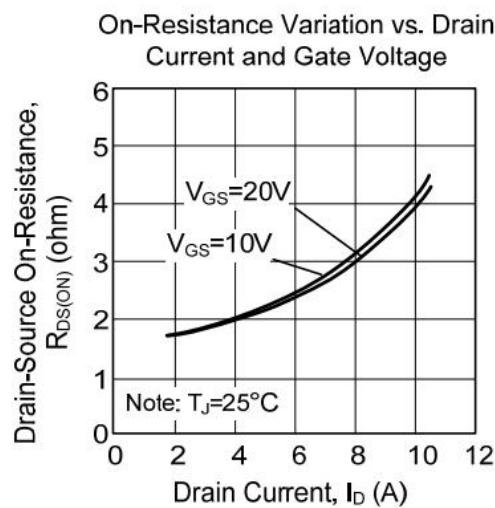


Fig. 4B Unclamped Inductive Switching Waveforms

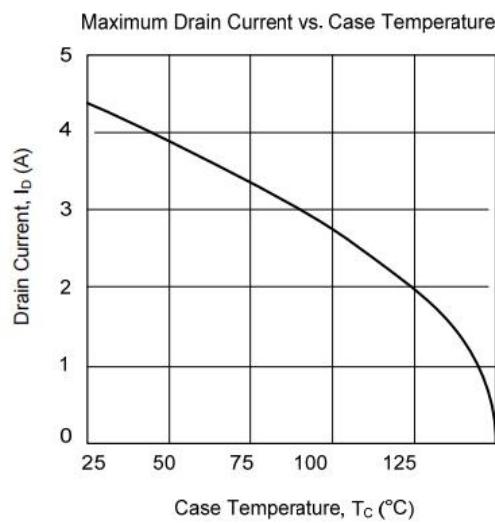
## TYPICAL CHARACTERISTICS



## TYPICAL CHARACTERISTICS(Cont.)



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