

GT12N65F

N-Channel Power MOSFET (650V, 12A, 0.65Ω)
N 沟道场效应晶体管
FEATURES

- Low Conductive Resistance
- Advanced 650V VDMOS Technology
- Fast switching
- High avalanche tested capability
- Improved dv/dt capability
- Low gate charge

产品特性

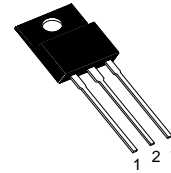
- 低的导通电阻
- 650V VDMOS 技术
- 快的开关速度
- 高雪崩能力
- 高抗 dv/dt 能力
- 低栅极电荷

APPLICATIONS

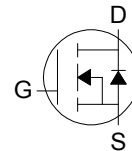
- High frequency switch mode power supply
- LED Lighting
- UPS

用途

- 高频开关电源
- LED 照明
- UPS 电源

GT12N65F Pin Assignment

TO-220FP

 3-Lead Plastic
 Package Code:F
 Pin 1: Gate
 Pin 2 & Tab: Drain
 Pin 3: Source

GT12N65F Symbol:

Absolute Maximum Ratings 绝对最大额定值

Symbol 符号	Parameter 项目	Value 数值	Units 单位
V _{DSS}	Drain to Source Voltage 漏源电压	650	V
I _D	Drain to Current (Continuous) 连续漏极电流	12	A
I _{DM}	Drain to Current (Pulsed) 最大脉冲漏极电流	48	A
V _{GS}	Gate-to-Source Voltage (Continuous) 栅源电压	±30	V
P _D	Total Power Dissipation (TC=25°C) 耗散功率	150	W
T _j	Operating Temperature Range 结温	-55 to 150	°C
T _{stg}	Storage Temperature Range 储存温度	-55 to 150	°C
E _{AS}	Single Pulse Avalanche Energy 单脉冲雪崩能量 (V _{DD} =50V, V _{GS} =10V, I _L =10A, L=1.2mH, R _G =25Ω, T _j =25°C)	790	mJ

Thermal Characteristics

Symbol 符号	Parameter 项目	Value 数值	Units 单位
R _{θJC}	Thermal Resistance Junction to Case Max. 结到管壳的热阻	2.5	°C/W
R _{θJA}	Thermal Resistance Junction to Ambient Max. 结到环境的热阻	62	°C/W

Electrical Characteristics 电气特性 ($T_J=25^{\circ}\text{C}$, unless otherwise specified)

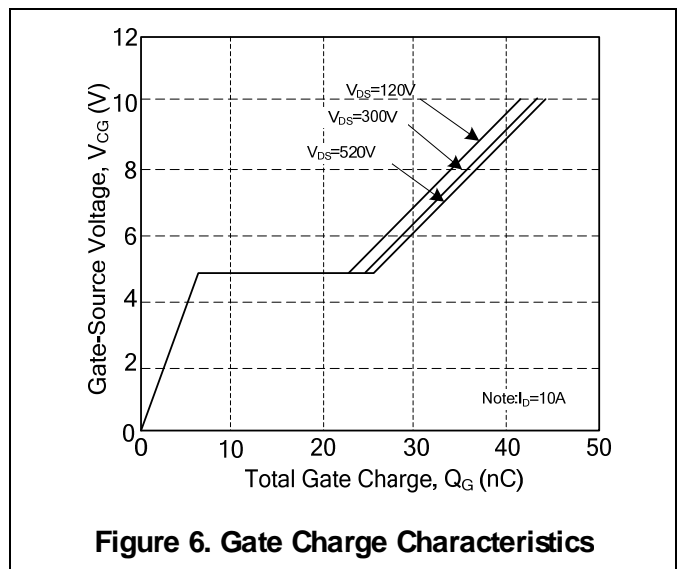
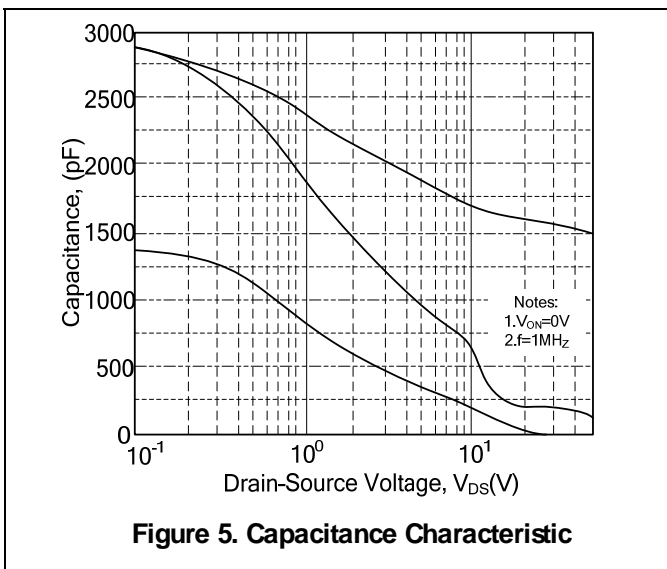
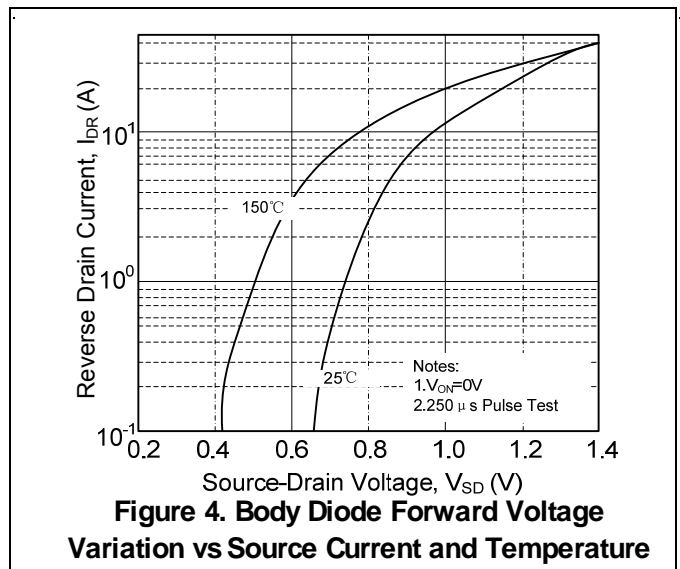
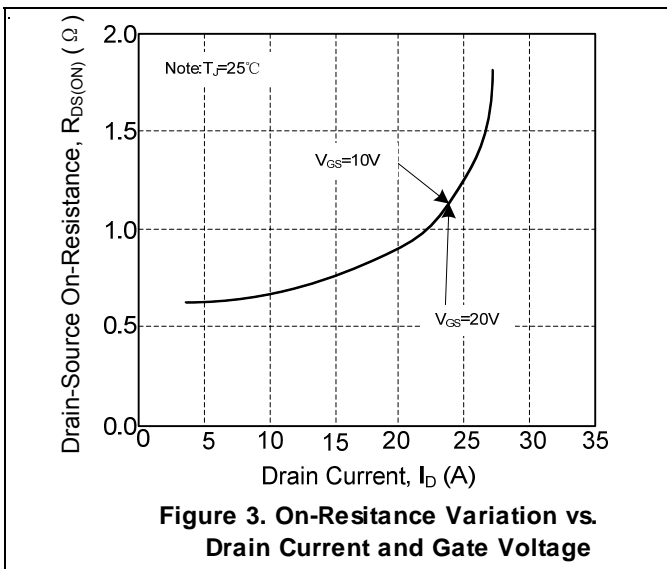
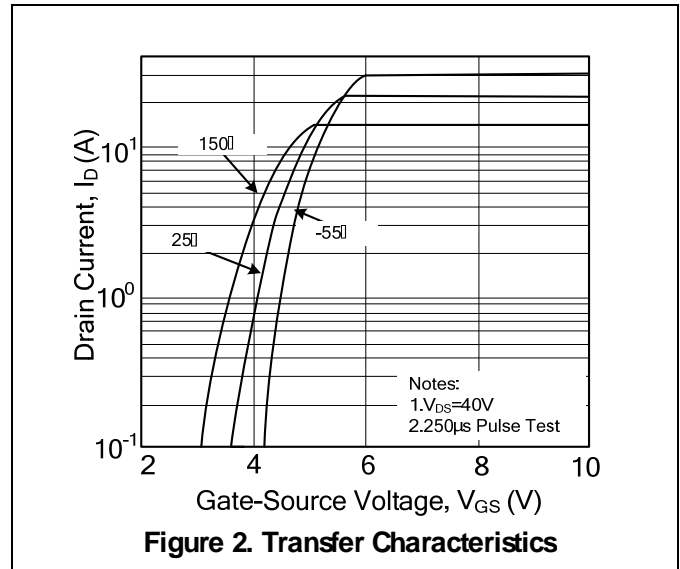
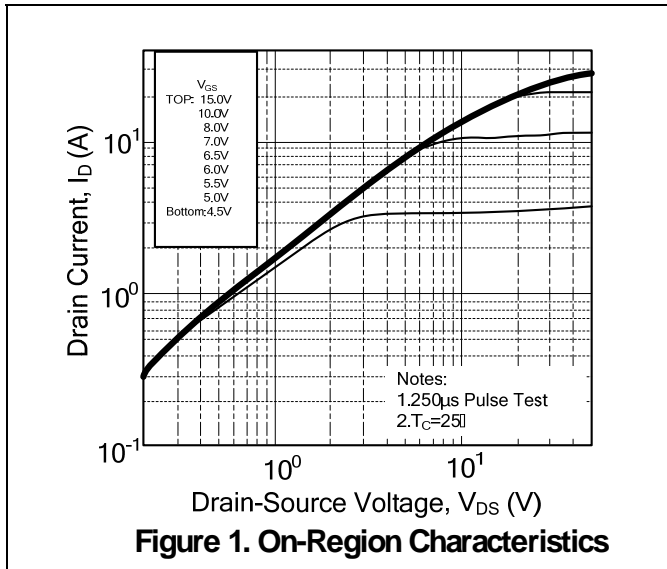
Symbol 符号	Characteristic 特性	Min. 最小值	Typ. 典型值	Max. 最大值	Unit 單位
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage 漏-源击穿电压 ($V_{GS}=0V, I_D=250\mu A$)	650	-	-	V
I_{DSS}	Drain-Source Leakage Current 零栅压下漏极漏电流 ($V_{DS}=650V, V_{GS}=0V$)	-	-	1	μA
	Drain-Source Leakage Current 零栅压下漏极漏电流 ($V_{DS}=480V, V_{GS}=0V, T_J=125^{\circ}\text{C}$)	-	-	50	μA
I_{GSSF}	Gate-Source Leakage Current-Forward ($V_{GS}=30V, V_{DS}=0V$) 正向栅极体漏电流	-	-	100	nA
I_{GSSR}	Gate-Source Leakage Current-Reverse ($V_{GS}=-30V, V_{DS}=0V$) 反向栅极体漏电流	-	-	-100	nA
$V_{GS(th)}$	Gate Threshold Voltage 阈值电压 ($V_{DS}=V_{GS}, I_D=250\mu A$)	2	-	4	V
$R_{DS(on)}$	Static Drain-Source On-Resistance 静态导通电阻 ($V_{GS}=10V, I_D=10A$)*	-	0.65	0.85	Ω
C_{iss}	Input Capacitance 输入电容	-	1575	-	pF
C_{oss}	Output Capacitance 输出电容	-	270	-	
C_{rss}	Reverse Transfer Capacitance 反向传输电容	-	85	-	
$t_{d(on)}$	Turn-on Delay Time 延迟时间	-	47	-	ns
t_r	Rise Time 上升时间	-	75	-	
$t_{d(off)}$	Turn-off Delay Time 延迟时间	-	345	-	
t_f	Fall Time 下降时间	-	67	-	
Q_g	Total Gate Charge 栅极电荷总量	-	44	-	nC
Q_{gs}	Gate-Source Charge 栅-源电荷	-	10	-	
Q_{gd}	Gate-Drain Charge 栅-漏电荷	-	16	-	

 *: Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$
Source-Drain Diode 漏-源二极管特性

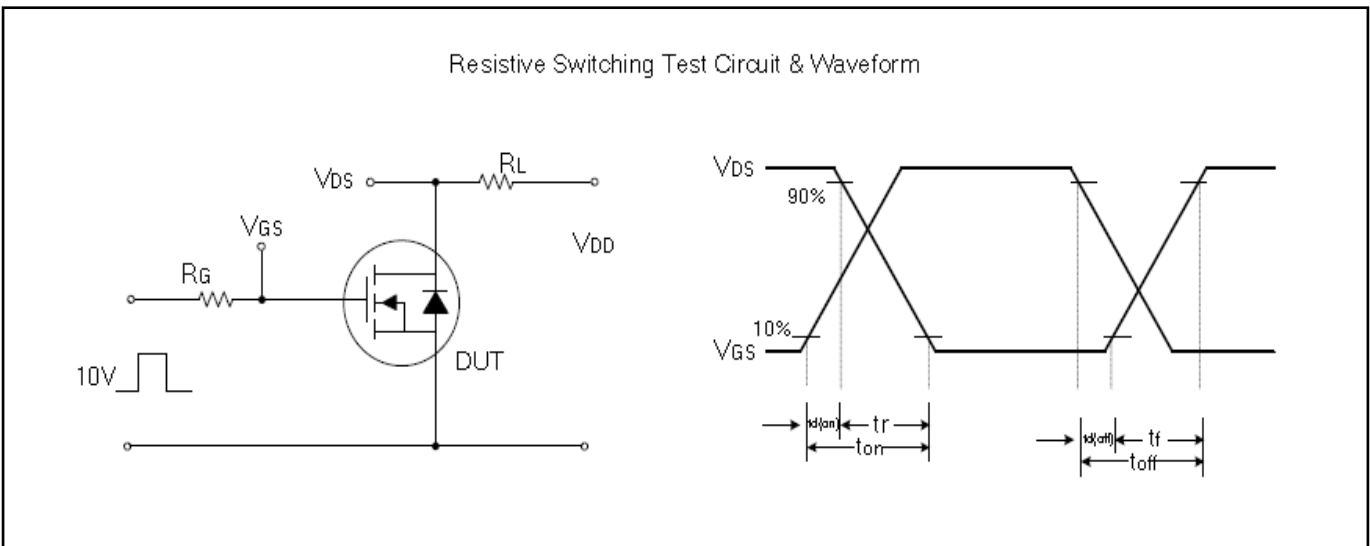
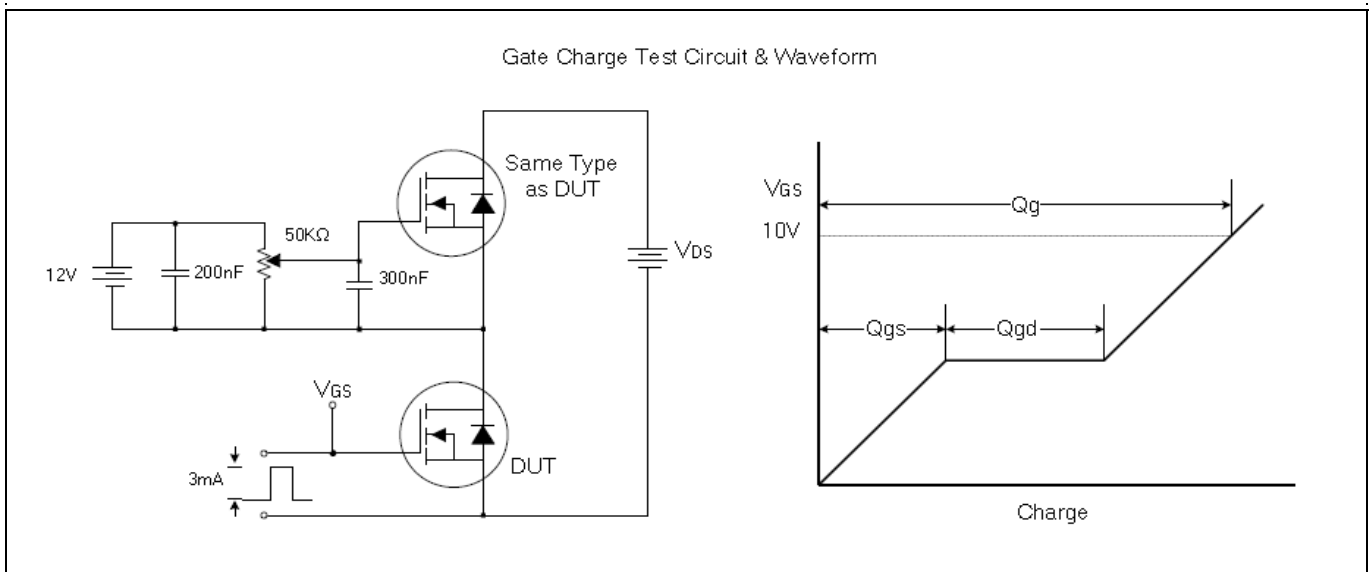
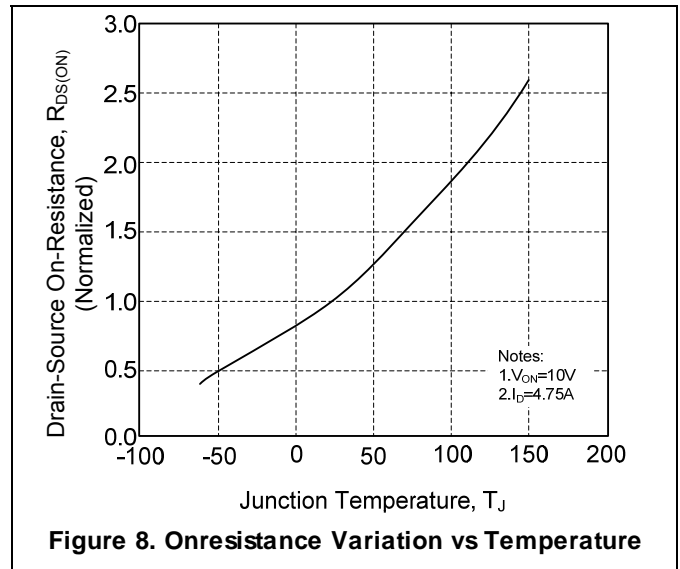
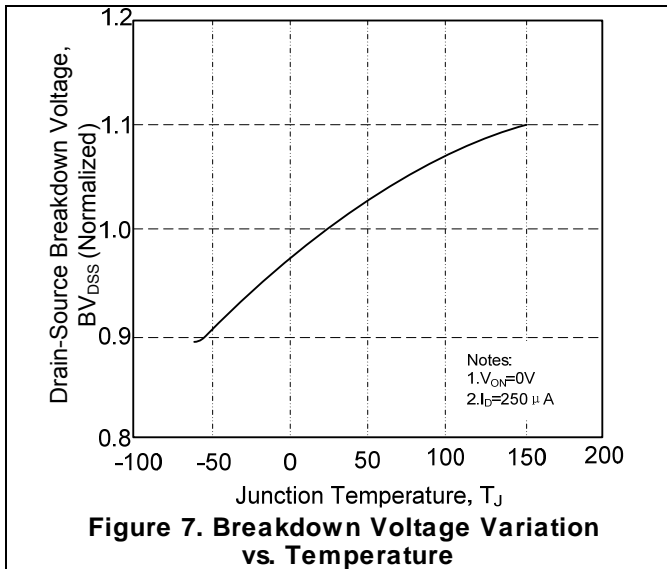
Symbol 符号	Characteristic 特性	Min. 最小值	Typ. 典型值	Max. 最大值	Units 單位
V_{SD}	Forward Voltage(1) 正向电压	-	-	1.4	V
Q_{rr}	Reverse recovery charge 反向恢复电荷	-	3.5	-	μC
T_{rr}	Reverse Recovery Time 反向恢复时间	-	296	-	ns

**: Negligible, Dominated by circuit inductance

Characteristics Curve 特征曲线



Characteristics Curve 特征曲线



TO-220FP Dimension

3-Lead TO-220FP
 Plastic Package
 YGMOS Package Code: F

Marking:

Pb Free Mark
 Pb-Free: "●" (Note)
 Normal: None

Date Code Control Code

Note: Green label is used for pb-free packing
 Pin Style: 1.Gate 2.Drain 3.Source

Material:

- Lead solder plating: Sn60/Pb40 (Normal), Sn/3.0Ag/0.5Cu or Pure-Tin (Pb-free)
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

DIM	Min.	Max.
A	6.48	7.40
C	4.40	4.90
D	2.34	3.00
E	0.45	0.80
F	9.80	10.36
G	3.10	3.60
I	2.70	3.43
J	0.60	1.00
K	2.34	2.74
L	12.48	13.60
M	15.67	16.20
N	0.90	1.47
O	2.00	2.96
α1/2/4/5	-	*5°

Unit: mm