



10N65F

10A N-Channel Power MOSFET

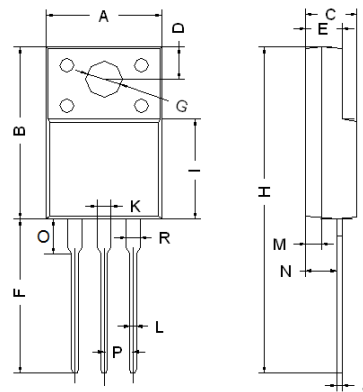
Features

New technology for high voltage device
 Low on-resistance and low conduction losses
 Small package
 Ultra Low Gate Charge cause lower driving requirements
 100% Avalanche Tested
 ROHS compliant

Mechanical Data

Case : TO-220F
Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
Polarity : As marked
Mounting Position : Any

TO-220F

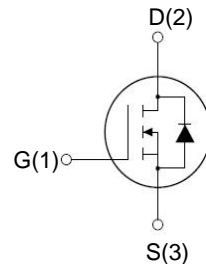
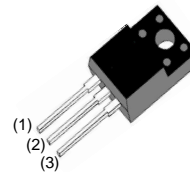


TO-220F		
Dim	Min	Max
A	9.80	10.30
B	15.20	15.80
C	4.37	4.77
D	2.90	3.30
E	2.50	2.90
F	12.90	13.50
G	3.10	3.30
H	28.40	29.16
I	8.40	9.10
J	0.35	0.58
L	0.68	0.94
M	1.30	1.50
N	2.40	2.60
O	2.60	3.10
P	2.40	2.60
K/R	1.10	1.32

All Dimensions in mm

Application

Power factor correction (PFC)
 Switched mode power supplies(SMPS)
 Uninterruptible Power Supply (UPS)



Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified. Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

Table 1. Absolute Maximum Ratings (T_c=25°C)

Parameter	Symbol	10N65F	Unit
Drain-Source Voltage (V _{GS} =0V)	V _{DS}	650	V
Gate-Source Voltage (V _{DS} =0V) AC (f>1 Hz)	V _{GS}	±30	V
Continuous Drain Current at T _c =25°C	I _{D(DC)}	10	A
Continuous Drain Current at T _c =100°C	I _{D(DC)}	6.0	A
Pulsed drain current (Note 1)	I _{DM(pluse)}	40	A
Maximum Power Dissipation(T _c =25°C) Derate above 25°C	P _D	59.5 0.475	W W/°C
Single pulse avalanche energy (Note 2)	E _{AS}	1000	mJ
Avalanche current (Note 1)	I _{AR}	10	A
Repetitive Avalanche energy , t _{AR} limited by T _{Jmax} (Note 1)	E _{AR}	15.6	mJ



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Parameter	Symbol	10N65	Unit
Drain Source voltage slope, $V_{DS} \leq 480 V$,	dv/dt	50	V/ns
Reverse diode dv/dt, $V_{DS} \leq 480 V, I_{SD} < I_D$	dv/dt	15	V/ns
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55...+150	°C

* limited by maximum junction temperature

Table 2. Thermal Characteristic

Parameter	Symbol	10N65	Unit
Thermal Resistance, Junction-to-Case (Maximum)	R_{thJC}	2.009	°C /W
Thermal Resistance, Junction-to-Ambient (Maximum)	R_{thJA}	42.8	°C /W

Table 3. Electrical Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
On/off states						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	650			V
Zero Gate Voltage Drain Current($T_C=25^\circ C$)	I_{DSS}	$V_{DS}=650V, V_{GS}=0V$			10	μA
Zero Gate Voltage Drain Current($T_C=125^\circ C$)	I_{DSS}	$V_{DS}=650V, V_{GS}=0V$			100	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2		4	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=5A$		730	850	Ω
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V,$ $F=1.0MHz$		590		pF
Output Capacitance	C_{oss}			37		pF
Reverse Transfer Capacitance	C_{rss}			0.9		pF
Total Gate Charge	Q_g	$V_{DS}=480V, I_D=10A,$ $V_{GS}=10V$		14.6	22	nC
Gate-Source Charge	Q_{gs}			4		nC
Gate-Drain Charge	Q_{gd}			6.7		nC
Switching times						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=380V, I_D=4A,$ $R_G=4.7\Omega, V_{GS}=10V$		8		nS
Turn-on Rise Time	t_5			6		nS
Turn-Off Delay Time	$t_{d(off)}$			59	75	nS
Turn-Off Fall Time	t_f			10	15	nS
Source- Drain Diode Characteristics						
Source-drain current(Body Diode)	I_{SD}	$T_C=25^\circ C$			10	A
Pulsed Source-drain current(Body Diode)	I_{SDM}				32	A
Forward On Voltage	V_{SD}	$T_J=25^\circ C, I_{SD}=10A, V_{GS}=0V$		0.9	1.2	V
Reverse Recovery Time	t_{rr}	$T_J=25^\circ C, I_F=5 A, di/dt=100A/\mu s$		230		nS
Reverse Recovery Charge	Q_{rr}			1.2		μC
Peak Reverse Recovery Current	I_{rrm}			10.5		A

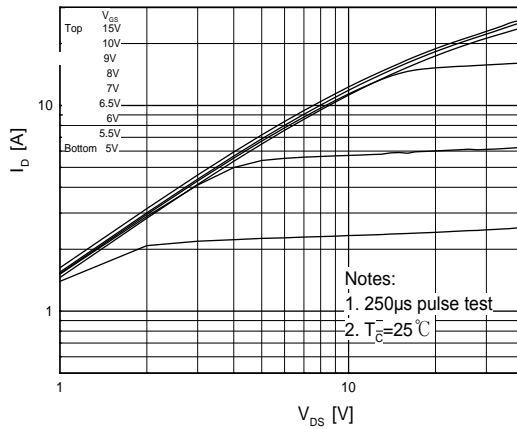
Notes 1.Repetitive Rating: Pulse width limited by maximum junction temperature

2. $T_J=25^\circ C, V_{DD}=50V, V_G=10V, R_G=25\Omega$

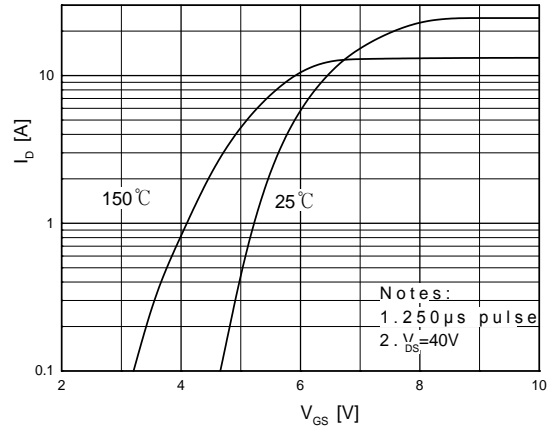


ELECTRICAL CHARACTERISTICS (curves)

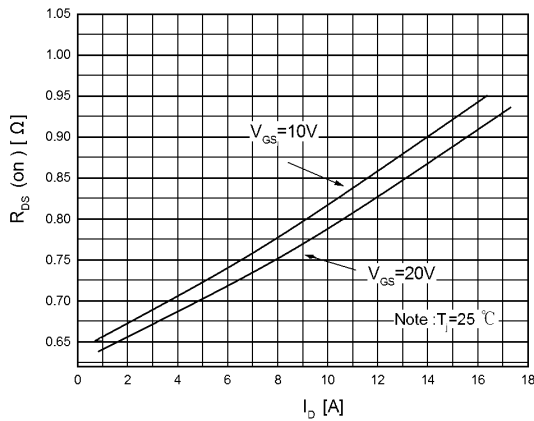
On-Region Characteristics



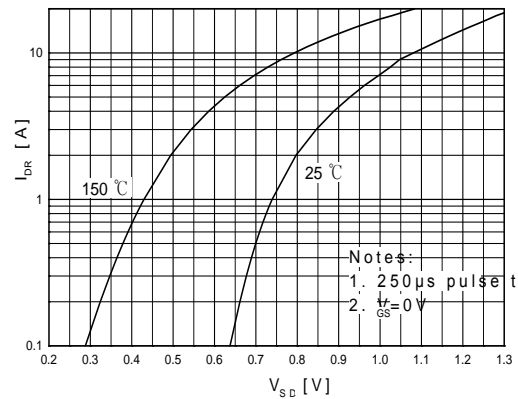
Transfer Characteristics



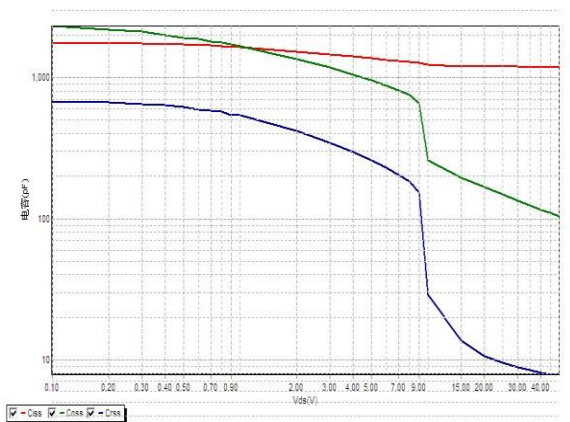
On-Resistance Variation vs. Drain Current and Gate Voltage



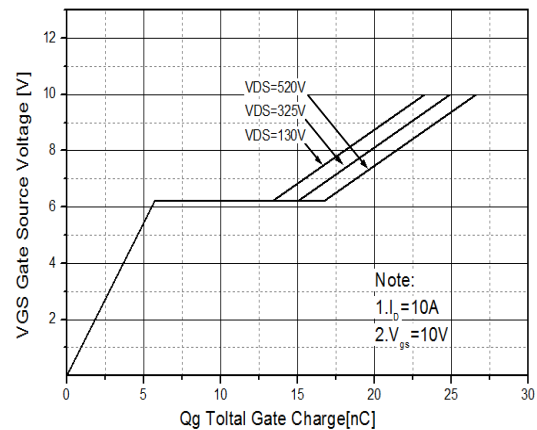
Body Diode Forward Voltage Variation vs. Source Current and Temperature



Capacitance Characteristics



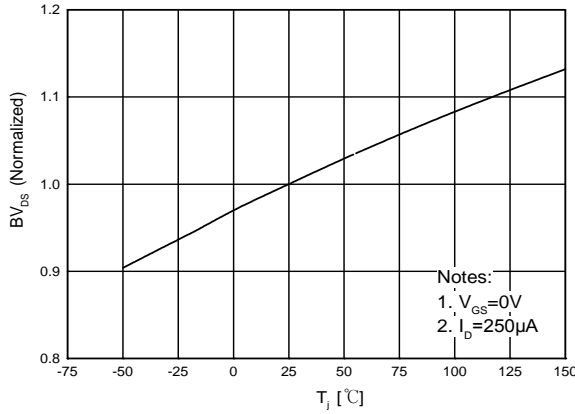
Gate Charge Characteristics



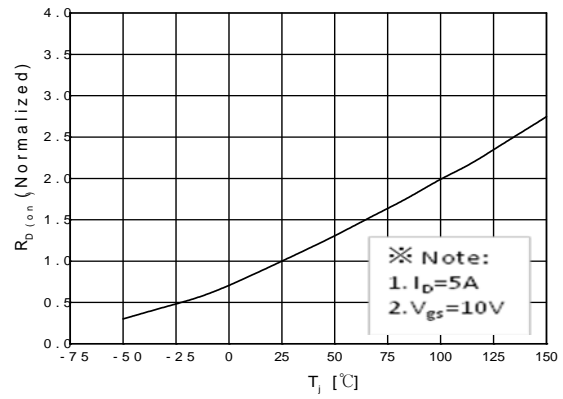


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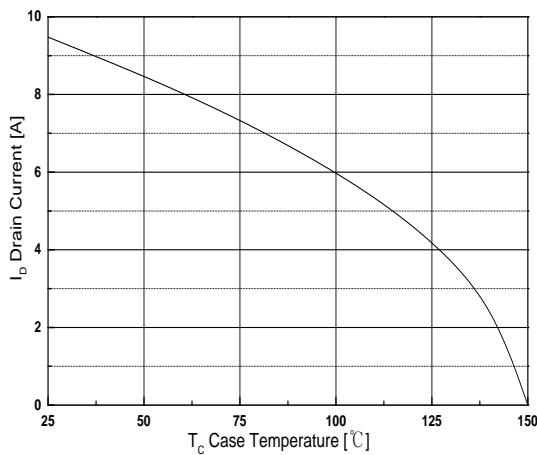
Breakdown Voltage Variation vs. Temperature



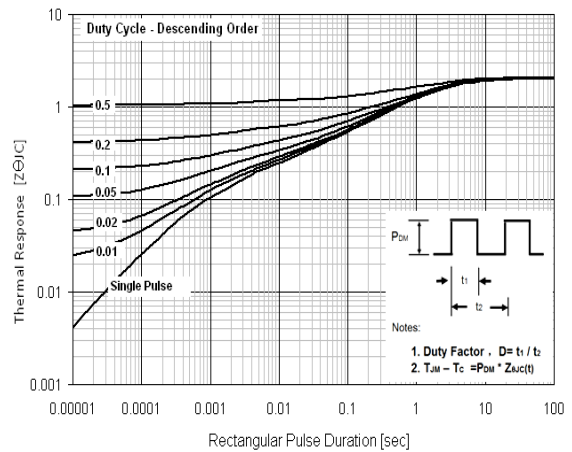
On-Resistance Variation vs. Temperature



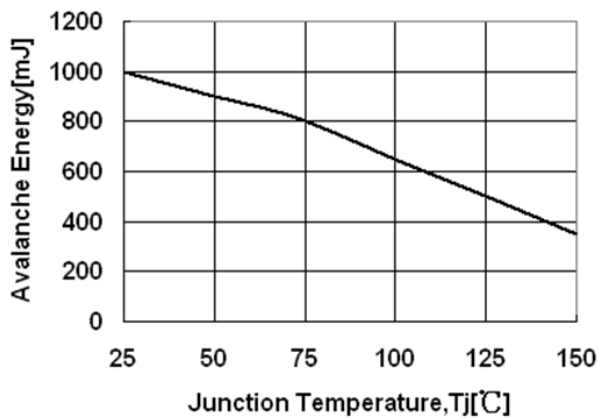
Maximum Drain Current vs. Case Temperature



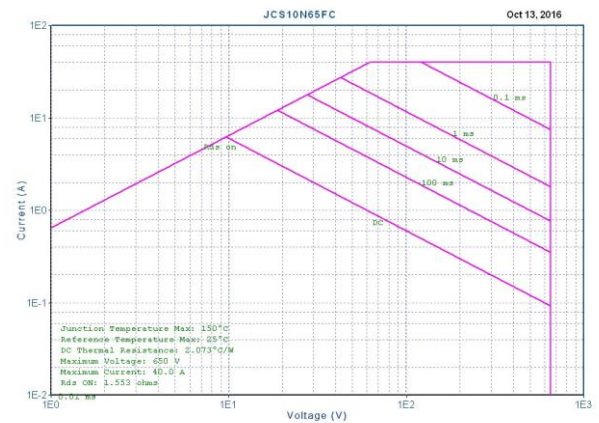
Transient Thermal Response Curve For 10N65F



Avalanche Energy vs. Temperature



Maximum Safe Operating Area For 10N65F



单击下面可查看定价，库存，交付和生命周期等信息

[>>ZG\(中鑫半导体\)](#)