

7A 650V N Channel MOSFET

Features

- $V_{DS} = 650V$
- $I_D = 7A @ V_{GS} = 10V$
- $R_{DS(ON)} (Typ) = 1.1\Omega @ V_{GS} = 10V$

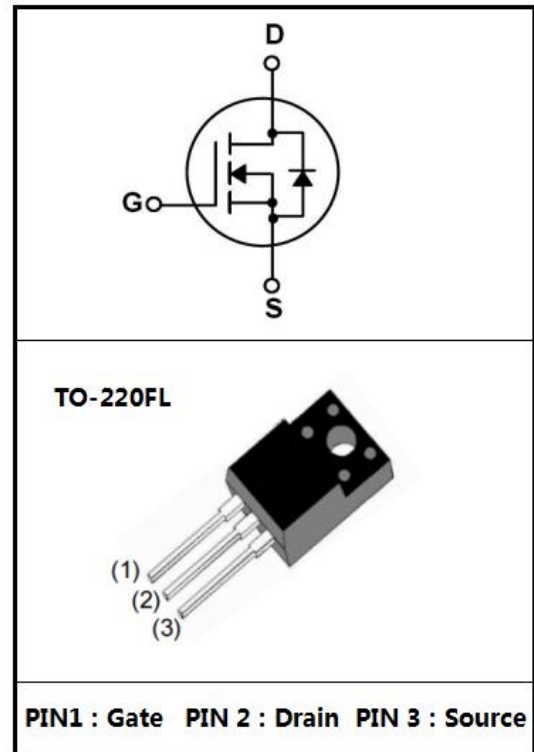
Applications

- Power Supply
- PFC
- High Current, High Speed Switching

Descriptions

These N-channel MOSFET are produced using advanced plane MOSFET Technology, which provides Low on-state resistance, high switching performance and excellent quality.

These devices are suitable device for SMPS, high Speed switching and general purpose applications.



Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	650	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	7.0	A
Drain Current	$I_D(T_c=100^\circ\text{C})$	4.4	A
Drain Current - Pulsed	I_{DM}	29.5	A
Gate-Source Voltage	V_{GSS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	420	mJ
Repetitive Avalanche Energy	E_{AR}	14.7	mJ
Avalanche Current	I_{AR}	7.0	A
Power Dissipation	$P_D(T_c=25^\circ\text{C})$	50	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$
Junction to Ambient	$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
Junction to Case	$R_{\theta JC}$	2.5	$^\circ\text{C/W}$

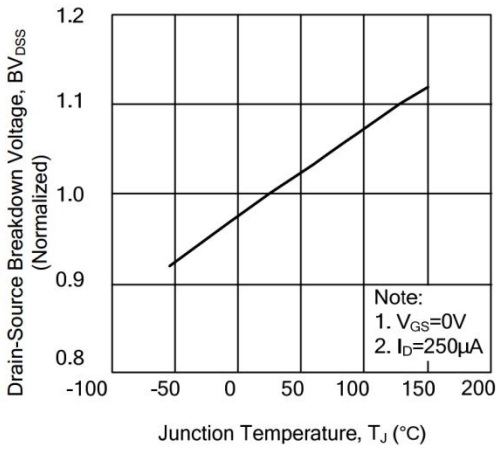
Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	650			V	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V$ $V_{GS}=0V$			1.0	μA	
		$V_{DS}=520V$ $T_C=125^\circ C$			100	μA	
Gate-Body Leakage Current, Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 100	nA	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.0		4.0	V	
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=3.5A$		1.1	1.3	Ω	
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		580		pF	
Output Capacitance	C_{oss}				50		pF
Reverse Transfer Capacitance	C_{rss}				10		pF
Total Gate Charge	Q_G	$V_{DS}=520V$, $I_D=7.0A$, $V_{GS}=10V$		30		nC	
Gate-Source Charge	Q_{GS}			10			
Gate-Drain Charge	Q_{GD}			21			

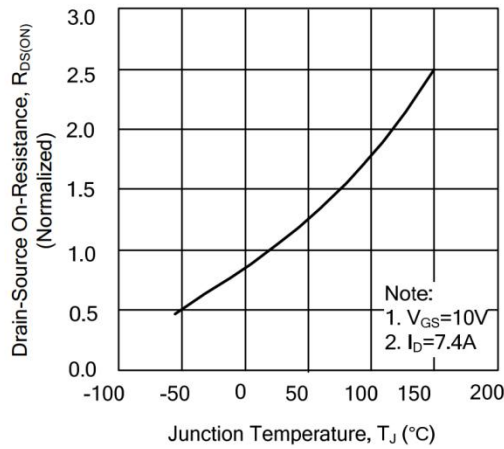
Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=325V$ $I_D=7.0A$ $R_G=25\Omega$		52		ns
Turn-On Rise Time	t_r			160		
Turn-Off Delay Time	$t_{d(off)}$			400		
Turn-Off Fall Time	t_f			190		
Maximum Continuous Drain-Source Diode Forward Current	I_S				7	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}				29.5	A
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$, $I_S=7.0A$			1.4	V
Reverse Recovery Time	t_{rr}	$V_{GS}=0V$, $I_S=7.0A$, $di_f/dt=100A/\mu s$		330		nS
Reverse Recovery Charge	Q_{rr}				2400	

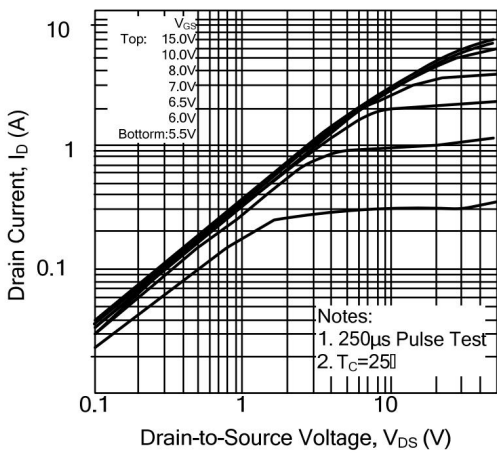
Electrical Characteristic Curve



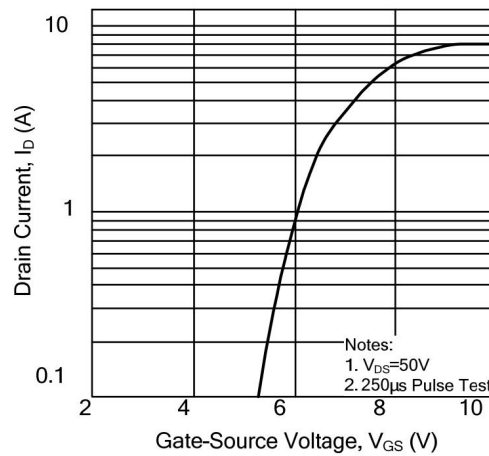
1. Breakdown Voltage Variation vs. Junction Temperature



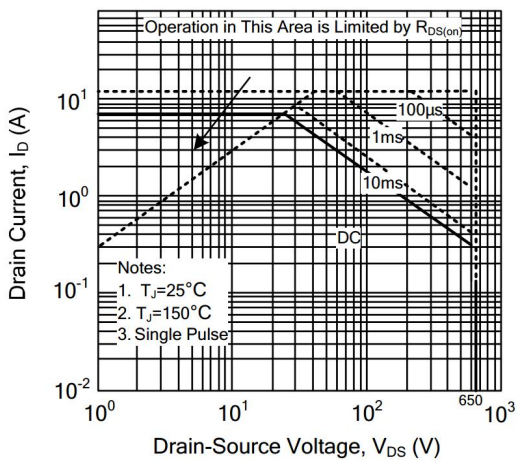
2. On-Resistance Variation vs. Junction Temperature



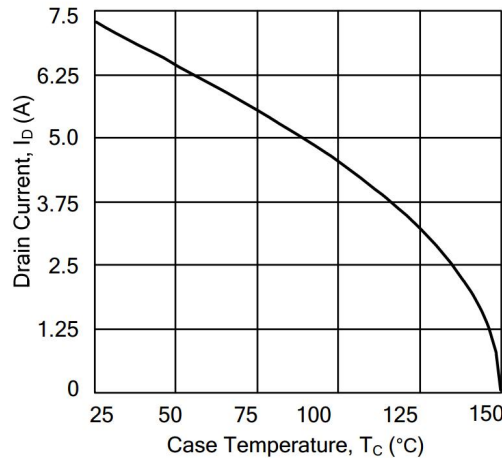
3. On-State Characteristics



4. Transfer Characteristics

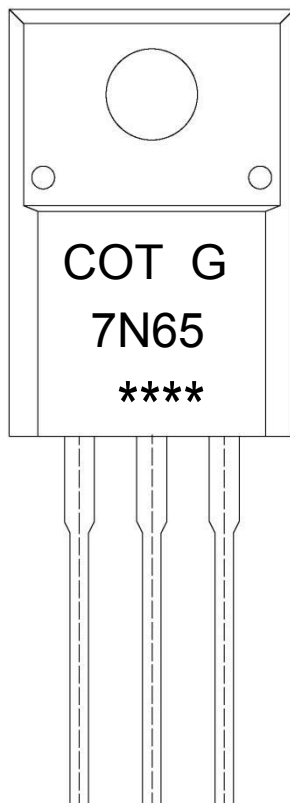


5. Safe Operating Area



6. Maximum Drain Current vs. Case Temperature

Marking Instructions



Note:

- COT: Company Logo
- G: Halogen Free
- 7N65: Product Type.
- ****: Lot No. Code, code change with Lot No.

Packaging SPEC.

TUBE INFORMATION

Package Type	Units					Dimension (unit: mm ³)		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-220FL	50	20	1,000	5	5,000	532×33×7.0	555×164×50	575×290×180

Package Outline Dimensions

TO-220FL 单位: mm

