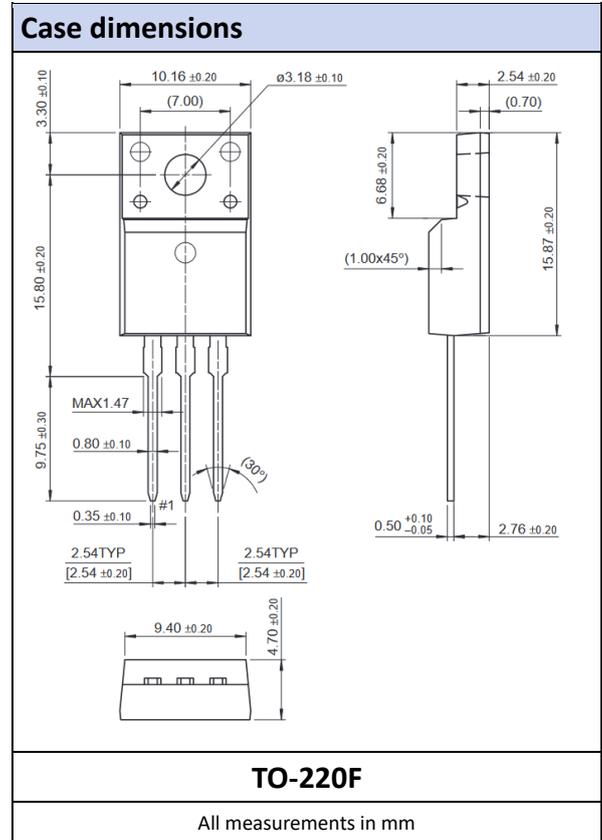


N-Channel Enhancement Mode MOSFET

Primary characteristics			
Symbol	Parameter	Value	Unit
I_D	Continuous drain current	8.0	A
V_{DSS}	Drain source voltage	650	V
$R_{DS(on)}$	Static drain-source on-resistance	1.25	Ω MAX

Features

- **TO-220F** case for easy automatic insertion
- Pb-free and **RoHS** compliant
- Fast switching
- Low ON resistance
- Low gate charge
- Application: power switch circuit of adaptor and charger
- Molding compound: UL Flammability Classification Rating 94V-0
- Solder bath temperature 275°C maximum, 10s per JESD 22-B106

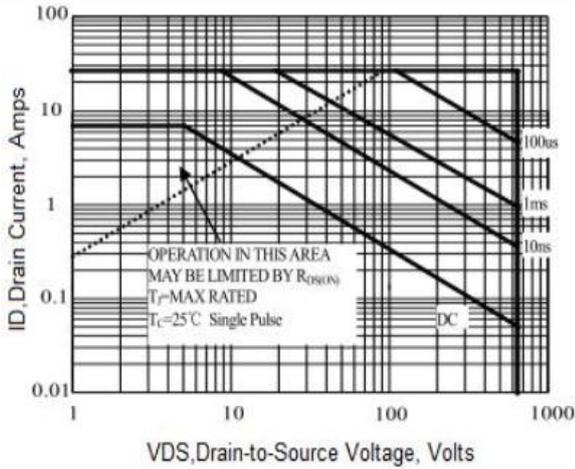


Maximum ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
Characteristic	Symbol	Value	Unit
Drain-source voltage	V_{DSS}	650	V
Gate-source voltage	V_{GSS}	±30	V
Continuous drain current	I_D	8.0	A
Pulsed drain current ²⁾	I_{DM}	28	A
Thermal resistance junction-to-air ¹⁾	$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
Thermal resistance junction-to-case ¹⁾	$R_{\theta JC}$	3.57	$^\circ\text{C/W}$
Power Dissipation	P_D	30	W
Operating junction temperature range	T_J, T_{STG}	-55 ~ 150	$^\circ\text{C}$

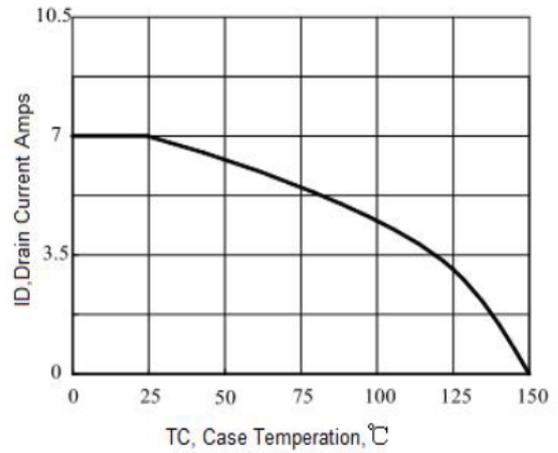
Electrical characteristics (T _A = 25°C)						
Characteristic	Test condition	Symbol	Value			Unit
			Min.	Typ.	Max.	
Drain-source breakdown voltage	V _{GS} =0V, I _D =250μA	V _{DSS}	655	-	-	V
Zero gate voltage drain current	V _{DS} =655V, V _{GS} =0V	I _{DSS}	-	-	1.0	μA
Gate body leakage current	V _{GS} =±30V, V _{DS} =0V	I _{GSS}	-	-	±100	nA
Gate threshold voltage	V _{DS} =V _{GS} , I _D =250μA	V _{GS(TH)}	2.0	-	4.0	V
Static drain-source on-state resistance	V _{GS} =10V, I _D =3.5A	R _{DS(ON)}	-	1.1	1.25	Ω
Forward transconductance	V _{DS} =15V, I _D =3.5A	g _{FS}	-	6.5	-	S
Dynamic electrical characteristics						
Characteristic	Test condition	Symbol	Value			Unit
			Min.	Typ.	Max.	
Input capacitance	V _{DS} =25V V _{GS} =0V f=1.0MHz	C _{ISS}	-	981	-	pF
Output capacitance		C _{OSS}	-	85	-	
Reverse transfer capacitance		C _{RSS}	-	4.0	-	
Switching characteristics						
Characteristic	Test condition	Symbol	Value			Unit
			Min.	Typ.	Max.	
Turn ON delay time	V _{DD} =325V V _{GS} =0V I _D =7.0A R _G =10Ω	t _{d(ON)}	-	18	-	ns
Turn ON rise time		t _r	-	19	-	
Turn OFF delay time		t _{d(OFF)}	-	39	-	
Turn OFF fall time		t _f	-	18	-	
Total gate-charge	V _{DD} =520V V _{GS} =10V I _D =7.0A	Q _G	-	18	-	nC
Gate to source charge		Q _{GS}	-	4.3	-	
Gate to drain (Miller) charge		Q _{GD}	-	7.6	-	
Source-drain diode characteristics						
Characteristic	Test condition	Symbol	Value			Unit
			Min.	Typ.	Max.	
Maximum body-diode continuous current	T _J =25°C	I _S	-	-	8.0	A
Maximum body-diode pulsed current ²⁾		I _{SM}	-	-	28	
Diode forward voltage	I _{SD} =7.0A	V _{SD}	-	-	1.4	V
Reverse recovery time ²⁾	I _{SD} =7.0A, V _{GS} =0V, di _F /dt=100A/μs	t _{rr}	-	370	-	ns
Reverse recovery charge ²⁾		Q _{rr}	-	1.9	-	μC
Notes:						
1) Device mounted on FR-4 PCB						
2) The data tested by pulsed, pulse width ≤300μs, duty cycle ≤2%						

Typical characteristics

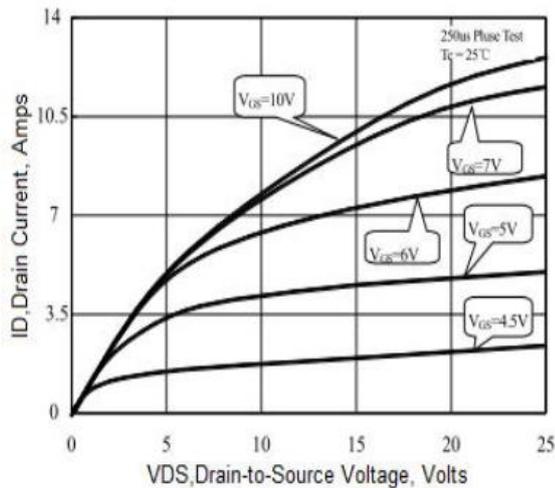
I_D vs. V_{DS}



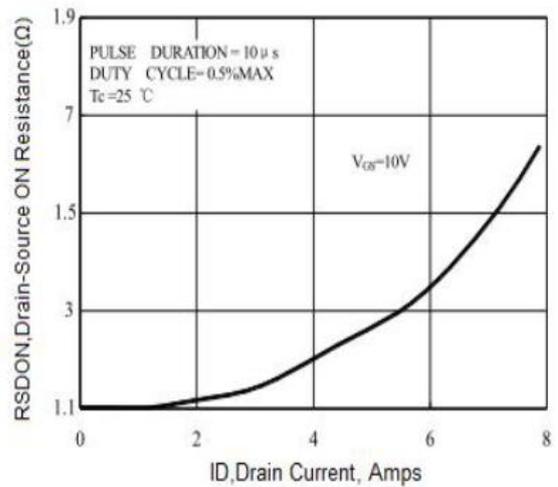
I_D vs. T_c



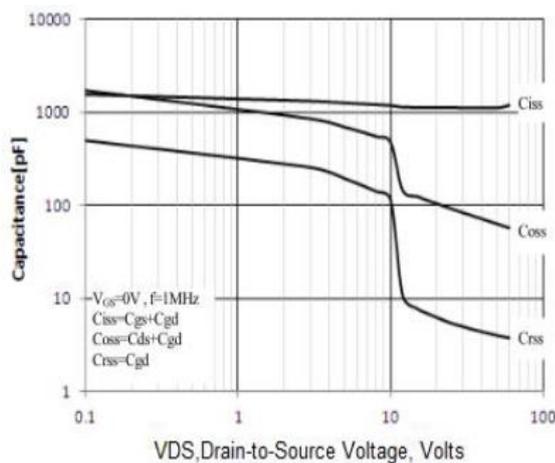
I_D vs. V_{DS}



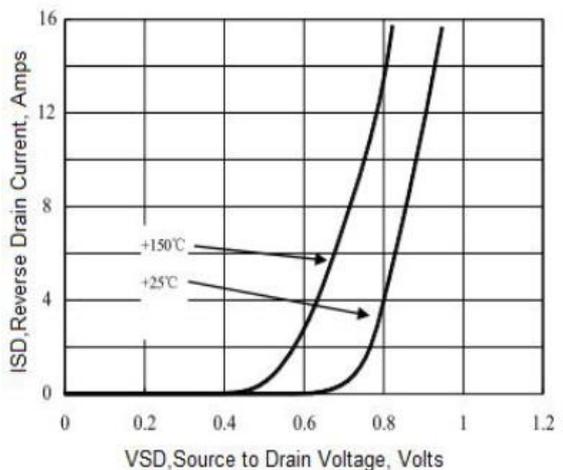
$R_{DS(on)}$ vs. I_D



C vs. V_{DS}



I_{SD} vs. V_{SD}



Ordering information			
Part Number	Package	Shipping Quantity	Dimensions
SL8N65	TO-220F	50 pcs / tube	---

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