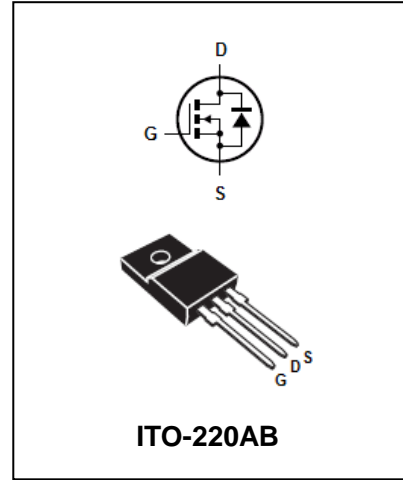


Silicon N-Channel Power MOSFET

BL16N65F

FEATURES

- Fast Switching
- Low ON Resistance($R_{dson} \leq 0.55\Omega$)
- Low Gate Charge (Typical Data:54nC)
- Low Reverse transfer capacitances(Typical:18.5pF)
- 100% Single Pulse avalanche energy Test



APPLICATIONS

- Power switch circuit of adaptor and charger.

Ordering Information

Part Number	Package	Shipping	Marking Code
BL16N65F□	ITO-220AB	50/Tube	16N65F

□: none is for Lead Free package;

“G” is for Halogen Free package

MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	650	V
V_{GS}	Gate -Source Voltage	± 30	V
I_D	Maximum Drain Current(continuous) at $T_C=25^\circ C$ $T_C=100^\circ C$	16	A
$I_{DM}^{(Note 1)}$	Drain Current(pulsed)	64	A
P_D	Power Dissipation at $T_C=25^\circ C$	70	W
$E_{AS}^{(Note 2)}$	Single Pulse Avalanche Energy	800	mJ
$dv/dt^{(Note3)}$	Peak Diode Recovery Voltage Slope	5	V/ns
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient	100	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance,Junction-to-Case	1.79	$^\circ C/W$
$T_j T_{stg}$	Operating Junction and Storage Tem-perature Range	-55 to +150	$^\circ C$

Note:1. Repetitive rating; pulse width limited by maximum junction temperature

2. $L=10mH, I_D=12.6A, Start T_J=25^\circ C$

3. $I_{SD}=16A, di/dt \leq 200A/us, V_{DD} \leq BV_{DSS}, Start T_J=25^\circ C$

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	650	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V, V_{GS}=0V$ $V_{DS}=520V, V_{GS}=0V, T_C=125^\circ C$	-	-	10 100	μA
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 30V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	-	4	V
Static drain-Source On-resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=8A$	-	0.49	0.55	Ω
Forward Transconductance	g_{fs}	$V_{DS}=15V, I_D=8A$	-	15	-	S
Continuous Source Current(Body Diode)	I_S	Ta=25°C	-	-	16	A
Maximum Pulsed Current(Body Diode))	I_{SM}		-	-	64	A
Forward on Voltage	V_{SD}	$I_{SD}=16A, V_{GS}=0$	-	-	1.5	V
Input Capacitance	C_{ISS}	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	2450	-	pF
Output Capacitance	C_{OSS}		-	218	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	18.5	-	pF
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD} = 325V, I_D=16A,$ $R_G= 25\Omega$	-	30	-	ns
Rise Time	t_R		-	70	-	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	145	-	ns
Fall Time	t_F		-	74	-	ns
Total Gate Charge	Q_g	$V_{DD}=325V, V_{GS}=10V$ $I_D=16A$	-	54	-	nC
Gate-source Charge	Q_{gs}		-	10	-	nC
Gate-drain Charge	Q_{gd}		-	21	-	nC
Reverse Recovery Time	T_{rr}	$I_S=16A, V_{GS}=0V$ $dI_F/dt=100A/\mu s, T_J=25^\circ C$	-	410	-	ns
Reverse Recovery Charge	Q_{rr}		-	3.5	-	μC

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TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

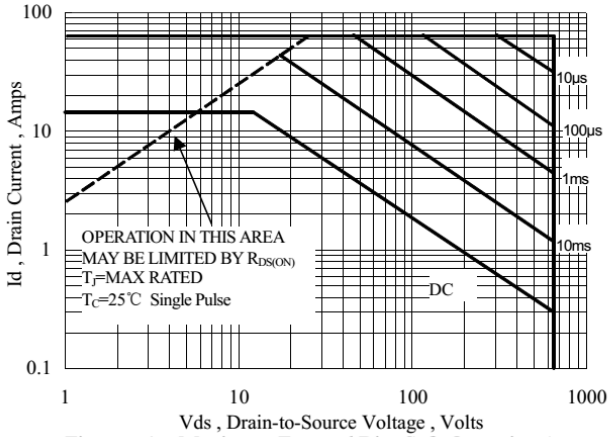


Figure 1 Maximum Forward Bias Safe Operating Area

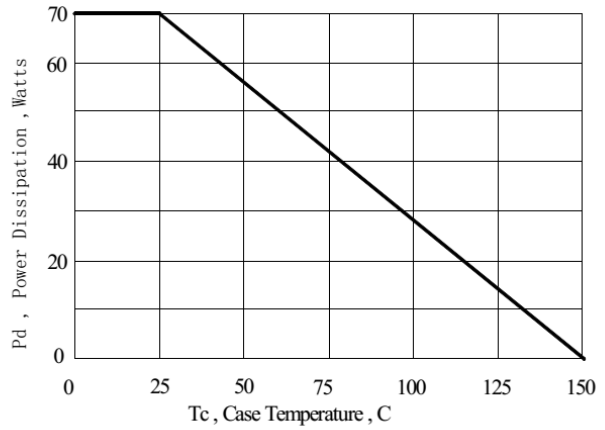


Figure 2 Maximum Power Dissipation vs Case Temperature

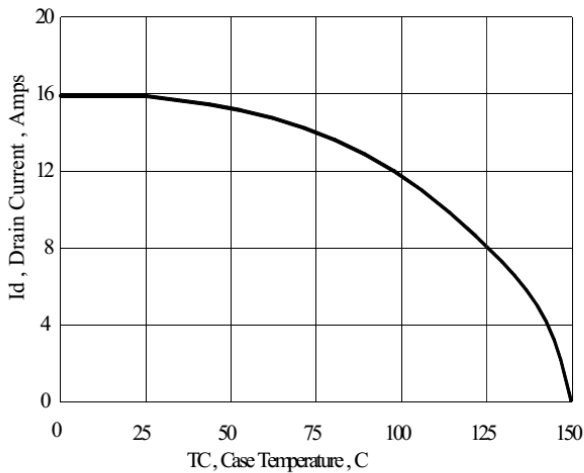


Figure 3 Maximum Continuous Drain Current vs Case Temperature

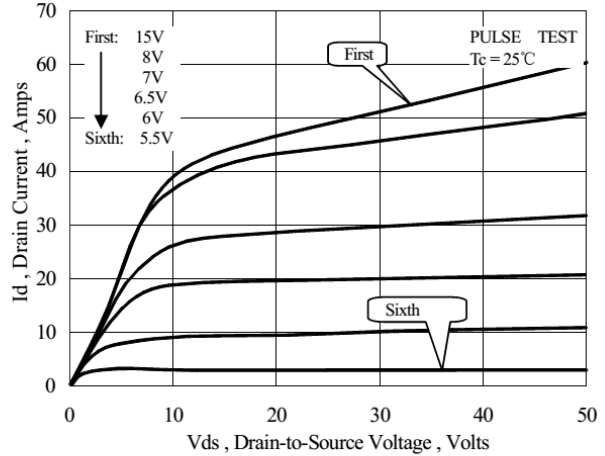


Figure 4 Typical Output Characteristics

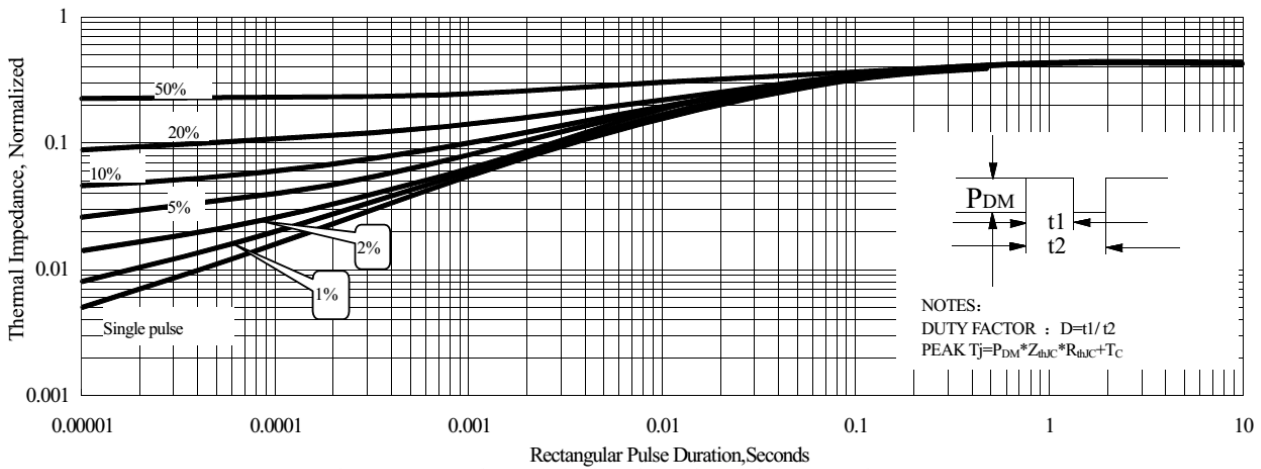


Figure 5 Maximum Effective Thermal Impedance, Junction to Case

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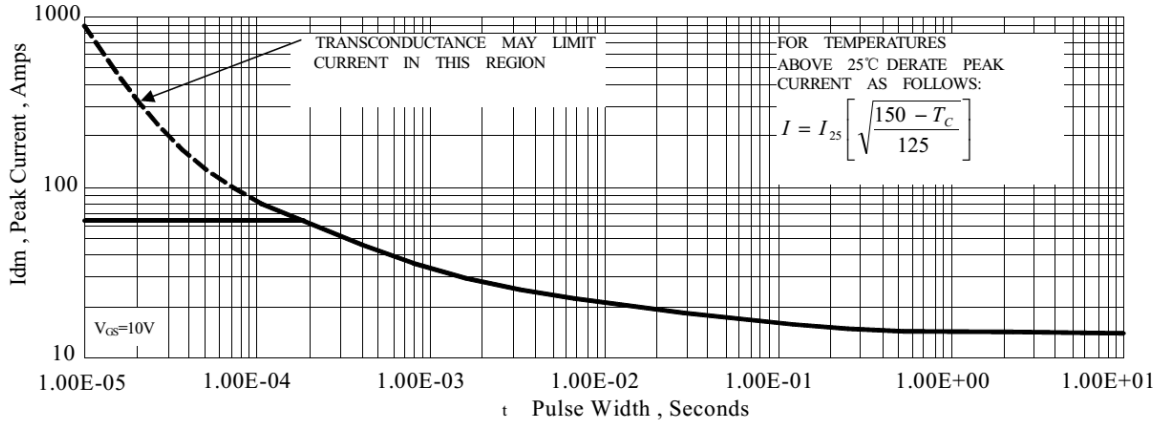


Figure 6 Maximum Peak Current Capability

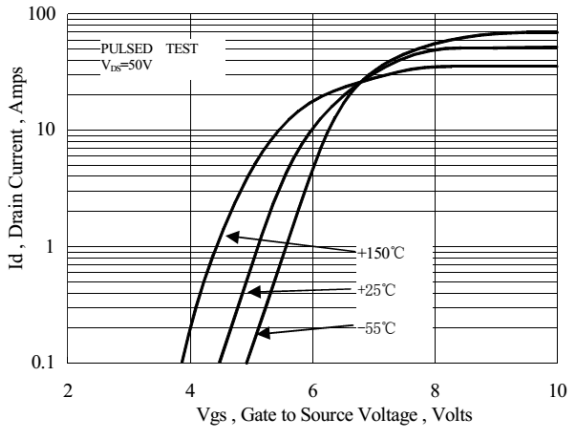


Figure 7 Typical Transfer Characteristics

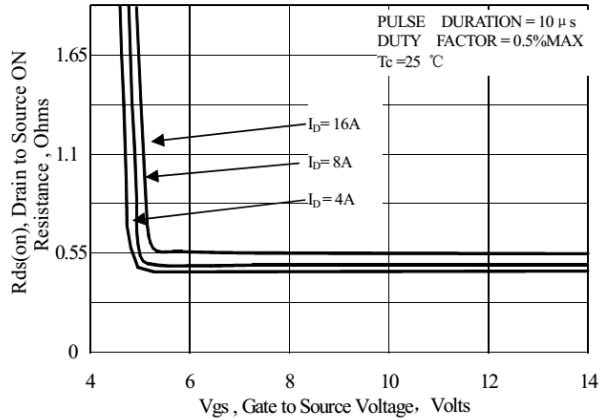


Figure 8 Typical Drain to Source ON Resistance vs Gate Voltage and Drain Current

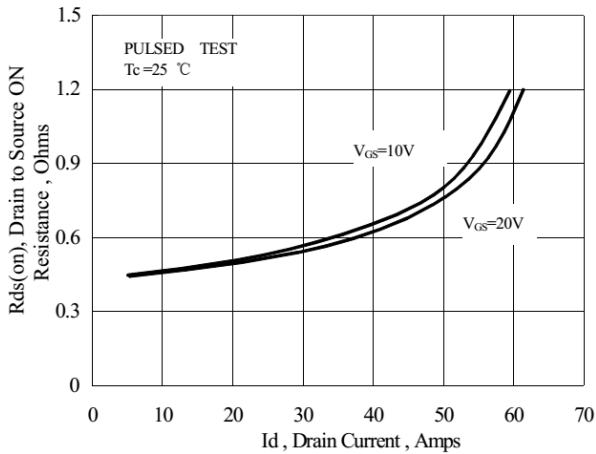


Figure 9 Typical Drain to Source ON Resistance vs Drain Current

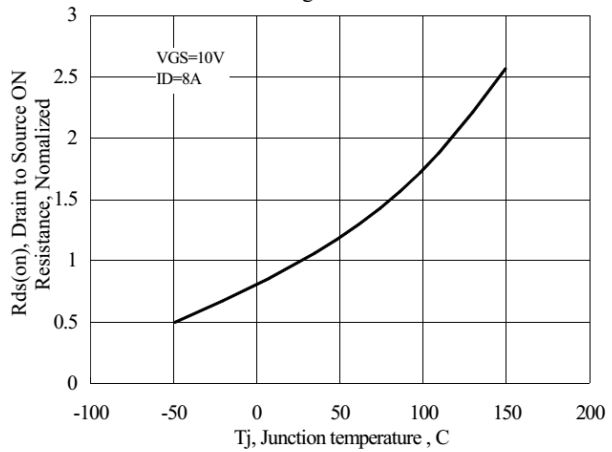


Figure 10 Typical Drain to Source on Resistance vs Junction Temperature

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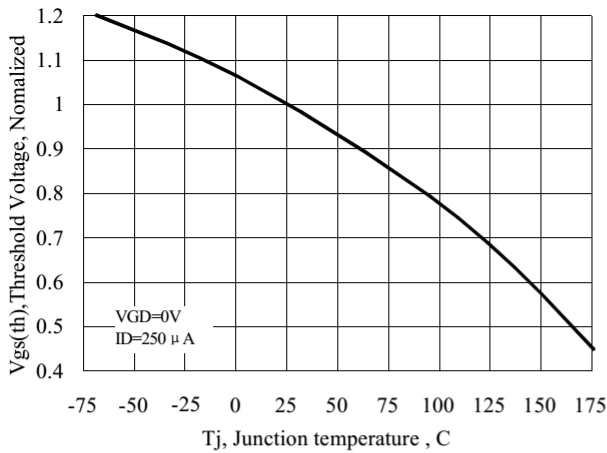


Figure 11 Typical Theshold Voltage vs Junction Temperature

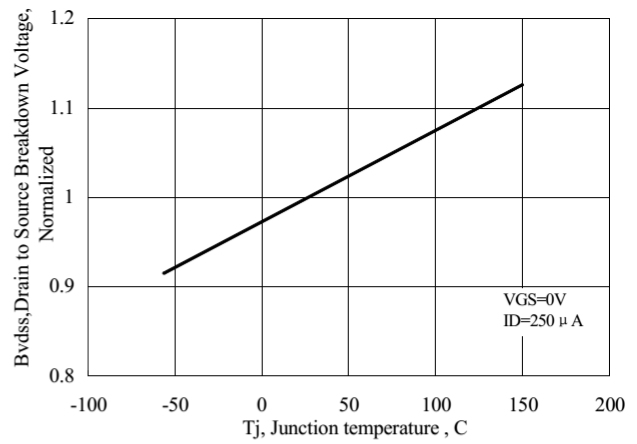


Figure 12 Typical Breakdown Voltage vs Junction Temperature

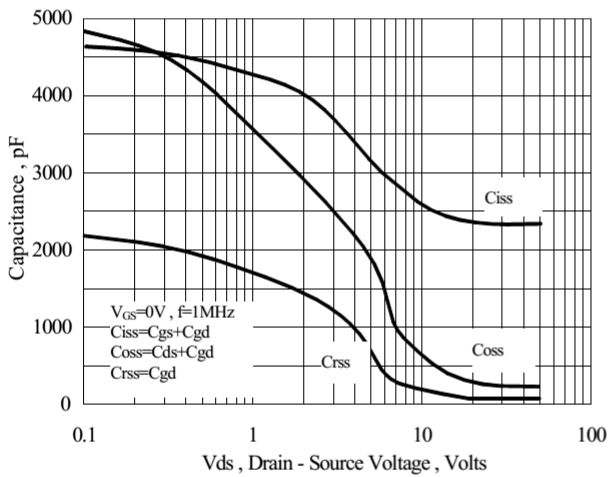


Figure 13 Typical Capacitance vs Drain to Source Voltage

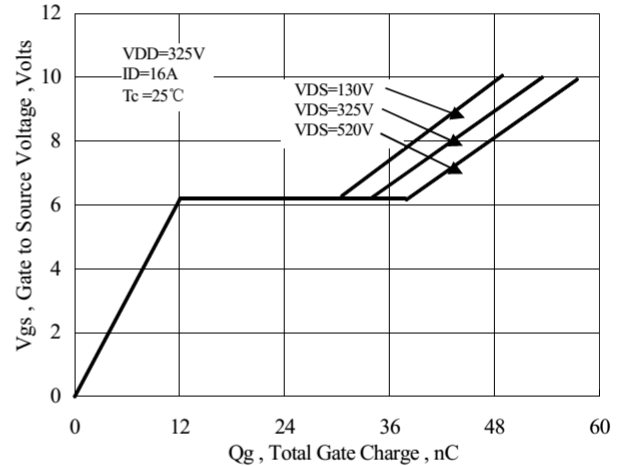


Figure 14 Typical Gate Charge vs Gate to Source Voltage

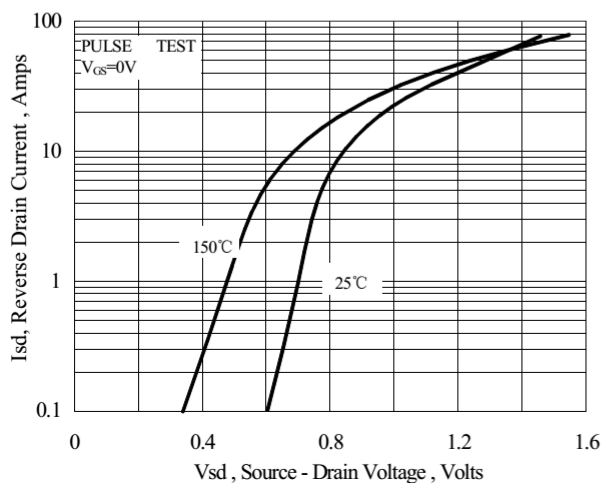


Figure 15 Typical Body Diode Transfer Characteristics

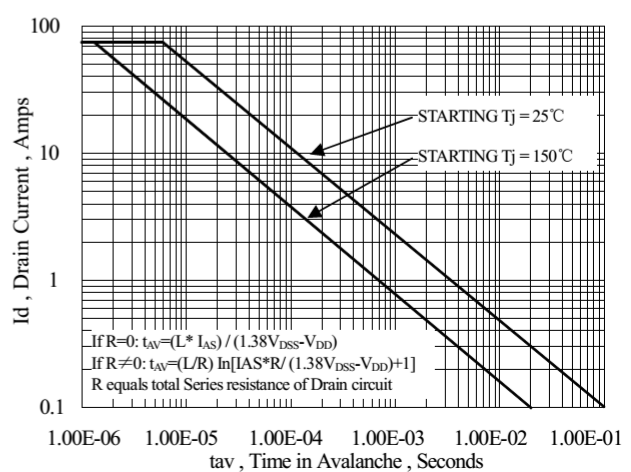


Figure 16 Unclamped Inductive Switching Capability

Silicon N-Channel Power MOSFET

BL16N65F

PACKAGE OUTLINE

Plastic surface mounted package

ITO-220AB

