

Features

- Super low gate charge
- Green device available
- Excellent C_{dv}/d_t effect decline
- Advanced high cell density trench technology

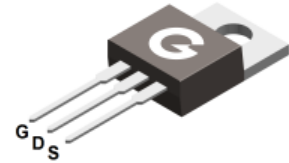
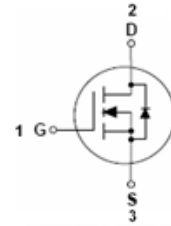
HF

Application

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

Mechanical Data

- Case: TO-220AB
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



TO-220AB

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL2N60	TO-220AB	50 pcs / Tube	2N60

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	600	V
Gate-to-Source Voltage	V_{GSS}	± 30	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current	I_{DM}	8	A
Single Pulse Avalanche Energy ^{*1}	E_{AS}	75	mJ

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_A = 25^\circ\text{C}$)	P_D	1.8	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	70	$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250μA	600	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 600V, V _{GS} = 0V	-	-	10	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±30V, V _{DS} = 0V	-	-	±100	nA
On Characteristics						
R _{DS(ON)}	Static Drain-Source On-resistance ^{*2}	V _{GS} = 10V, I _D = 1A	-	-	5	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	2	3	4	V
R _G	Gate Resistance	V _{GS} = 0V, f = 1MHz	-	23.6	-	Ω
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V	-	359	-	pF
C _{OSS}	Output Capacitance	V _{DS} = 25V	-	48	-	
C _{RSS}	Reverse Transfer Capacitance	f = 1.0MHz	-	17	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time	V _{DD} = 300V R _G = 25Ω I _D = 2.4A	-	10	-	ns
t _r	Turn-on Rise Time		-	25	-	
t _{d(OFF)}	Turn-Off Delay Time		-	20	-	
t _f	Turn-Off Fall Time		-	25	-	
Q _G	Total Gate-Charge	V _{DD} = 480V	-	7.8	-	nC
Q _{GS}	Gate to Source Charge	V _{GS} = 10V	-	1.7	-	
Q _{GD}	Gate to Drain (Miller) Charge	I _D = 2.4A	-	2.3	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage ^{*2}	I _{SD} = 2A, V _{GS} = 0V	-	-	1.2	V
t _{rr}	Reverse Recovery Time	I _{SD} = 2.4A, V _{GS} = 0V	-	503	-	ns
Q _{rr}	Reverse Recovery Charge	di/dt = 100A/μs	-	1838	-	nC

Notes:

- The E_{AS} data shows Max. rating. The test condition is V_{DS} = 50V, V_{GS} = 10V, L = 70mH
- The data tested by pulsed, pulse width ≤ 300μs, duty cycle ≤ 2%

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

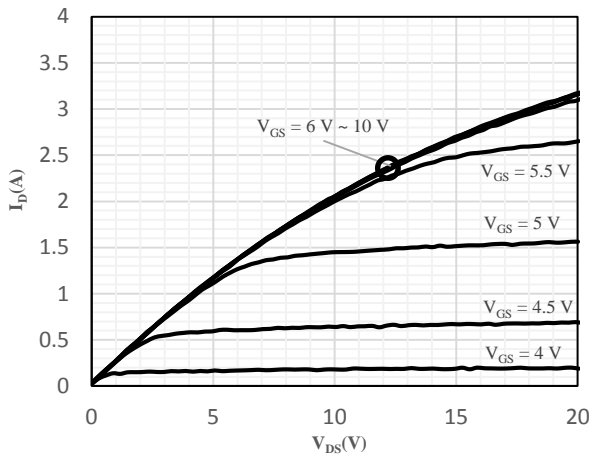


Fig 1 Typical Output Characteristics

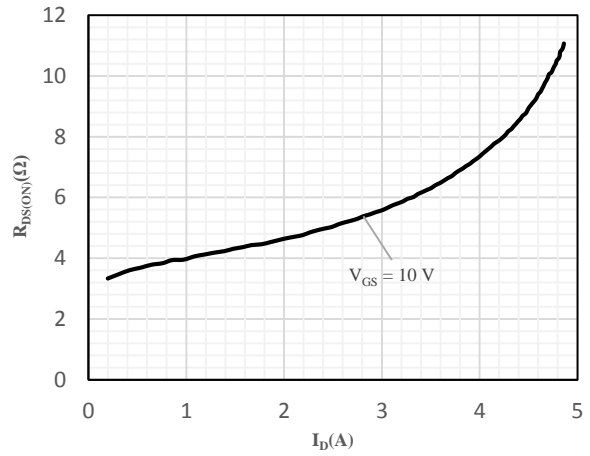


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

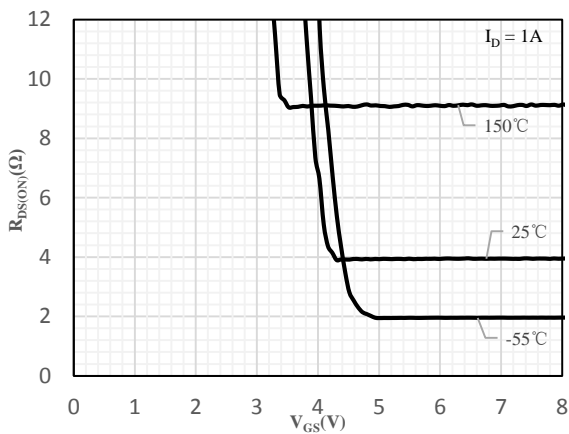


Fig 3 On-Resistance vs. Gate-Source Voltage

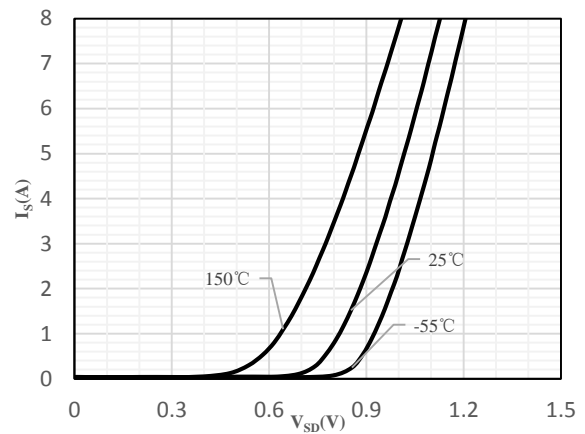


Fig 4 Body-Diode Characteristics

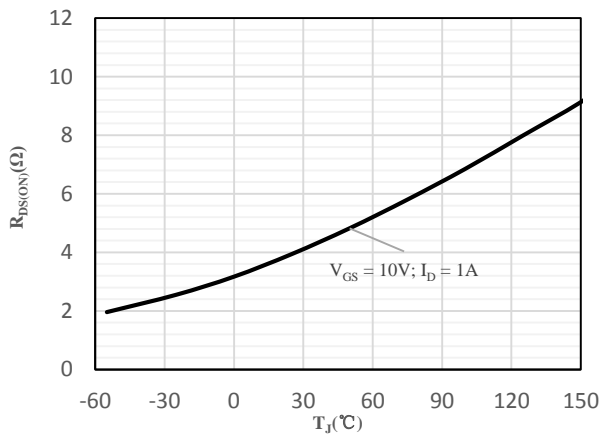


Fig 5 On-Resistance vs. Junction Temperature

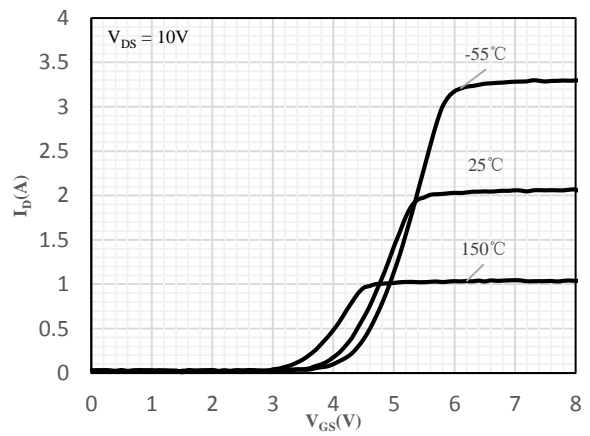


Fig 6 Transfer Characteristics

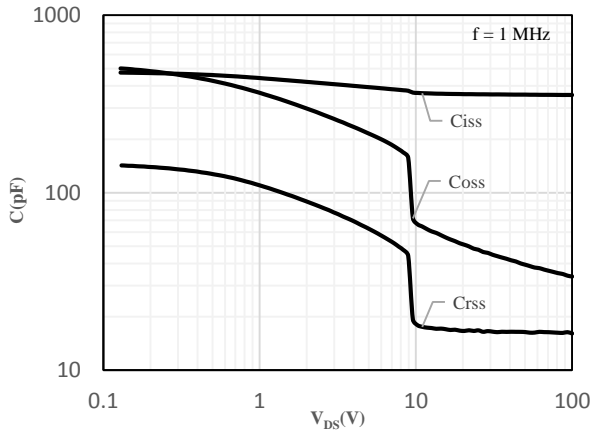


Fig 7 Capacitance Characteristics

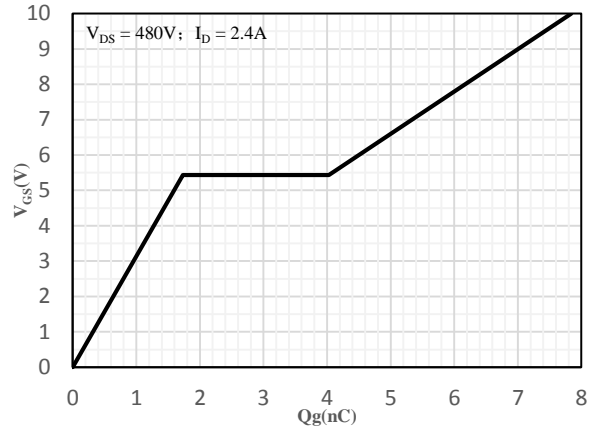


Fig 8 Gate-Charge Characteristics

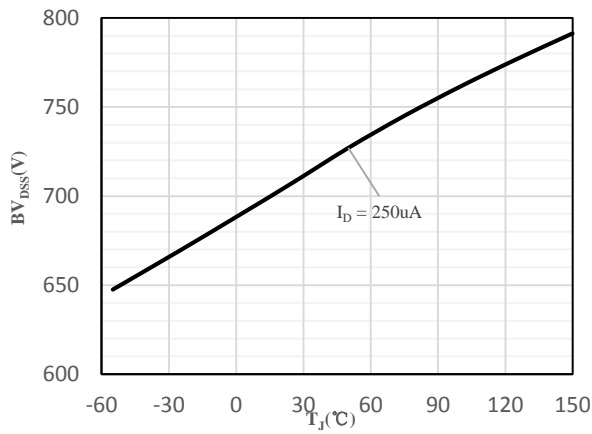


Fig 9 Breakdown Voltage vs. Junction Temperature

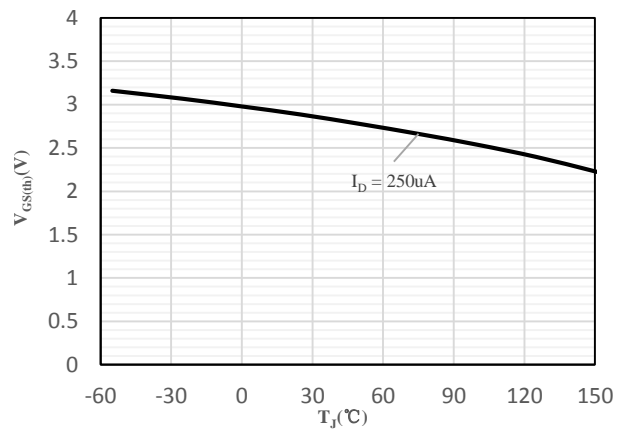
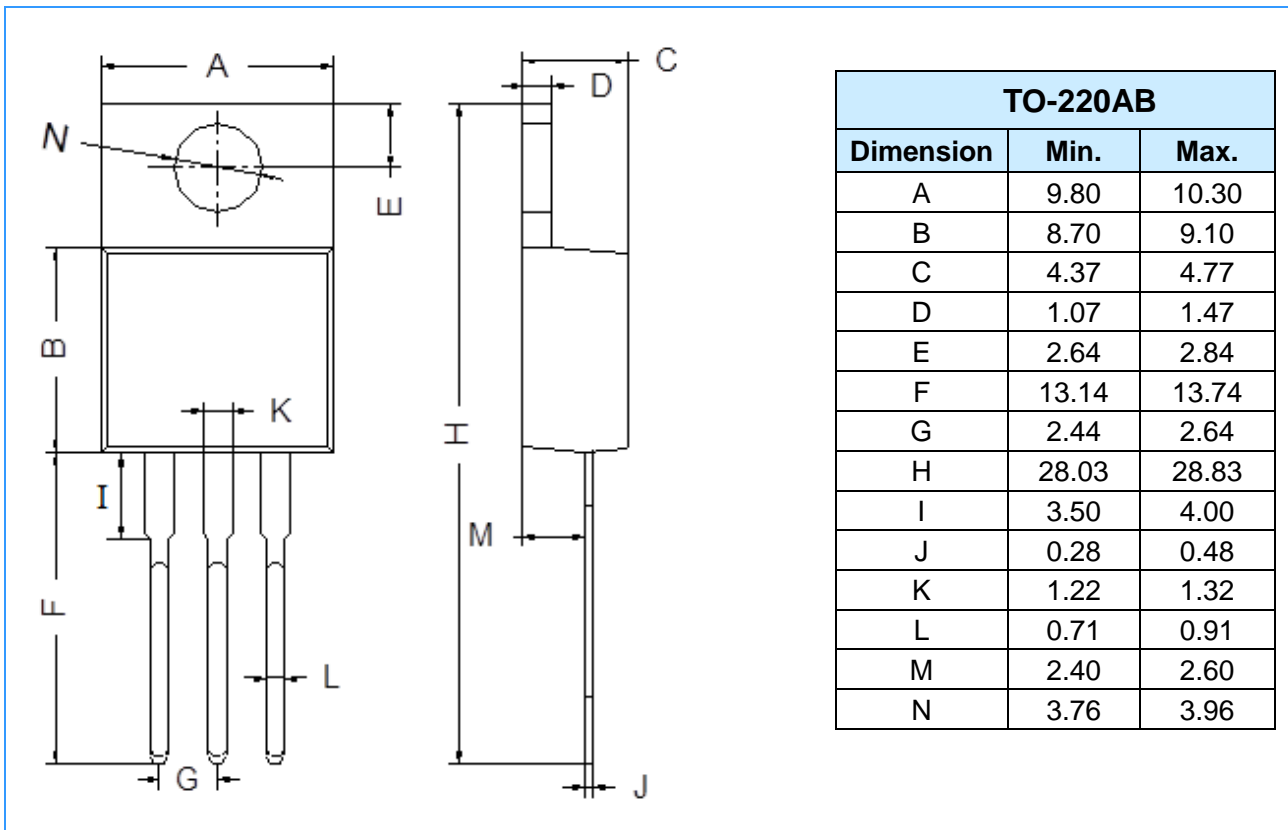


Fig 10 $V_{GS(th)}$ vs. Junction Temperature

Package Outline Dimensions (Unit: mm)



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