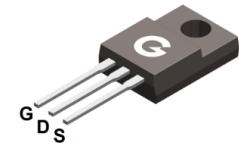
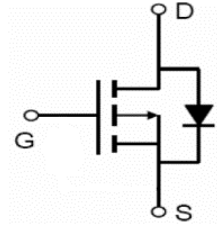


Features

- Super low gate charge
- Green device available
- Excellent C_{dv} / d_t effect decline
- Advanced high cell density trench technology
- HBM: JESD22-A114-B: 1C

HF



ITO-220AB

Mechanical Data

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

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL075P03F	ITO-220AB	50 pcs / Tube	075P03F

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	-30	V
Gate-to-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ($T_C = 25^\circ\text{C}$)	I_D	-60	A
Continuous Drain Current ($T_C = 100^\circ\text{C}$)		-38	A
Continuous Drain Current ($T_A = 25^\circ\text{C}$)		-13	A
Continuous Drain Current ($T_A = 100^\circ\text{C}$)		-8.5	A
Pulsed Drain Current ($t_p = 10\mu\text{s}$, $T_C = 25^\circ\text{C}$)	I_{DM}	-180	A
Single Pulse Avalanche Energy ^{*2}	E_{AS}	150	mJ
Power Dissipation ($T_C = 25^\circ\text{C}$)	P_D	42	W
Power Dissipation ($T_A = 25^\circ\text{C}$)		2	W
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	-	-	3	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	-	-	62.5	$^\circ\text{C/W}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V _{DS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = -250μA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -24V, V _{GS} = 0V	-	-	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V, V _{DS} = 0V	-	-	±100	nA
On Characteristics						
R _{DS(ON)}	Drain-Source On-resistance *1	V _{GS} = -10V, I _D = -14A	-	-	7.5	mΩ
		V _{GS} = -4.5V, I _D = -12A	-	-	11.5	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = -250 μA	-1	-1.5	-2.5	V
R _G	Gate Resistance	V _{GS} = 0V, f = 1MHz	-	8.6	-	Ω
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V	-	3890	-	pF
C _{OSS}	Output Capacitance	V _{DS} = -15V	-	491	-	
C _{RSS}	Reverse Transfer Capacitance	f = 1.0MHz	-	459	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time *3	V _{DD} = -15V	-	11	-	ns
t _r	Turn-on Rise Time *3	V _{GS} = -10V	-	14	-	
t _{d(OFF)}	Turn-Off Delay Time *3	R _G = 3Ω	-	50	-	
t _f	Turn-Off Fall Time *3	I _D = -1A	-	21	-	
Q _G	Total Gate-Charge	V _{DD} = -15V	-	82	-	nC
Q _{GS}	Gate to Source Charge	V _{GS} = -10V	-	10	-	
Q _{GD}	Gate to Drain (Miller) Charge	I _D = -14A	-	15	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage *1	I _{SD} = -1A, V _{GS} = 0V	-	-0.7	-1.2	V
t _{rr}	Reverse Recovery Time	I _{SD} = -14A, V _{GS} = 0V	-	163	-	ns
Q _{rr}	Reverse Recovery Charge	dI/dt = 100A/μs	-	256	-	nC

Notes:

- The data tested by pulsed, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- The E_{AS} data shows Max. rating. The test condition is $V_{DD} = -20V, V_{GS} = -10V, L = 0.5mH$
- Guaranteed by design, not subject to production

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

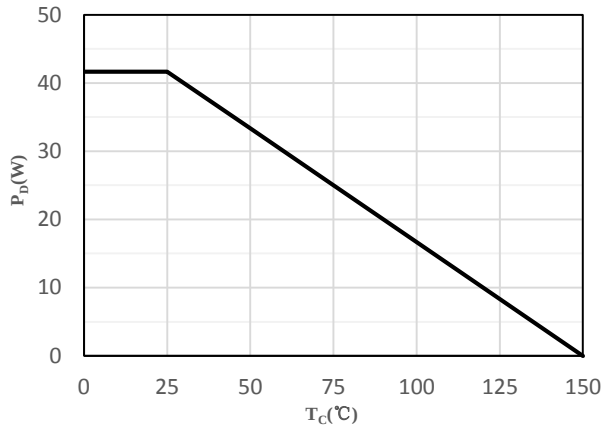


Fig 1 Power Dissipation

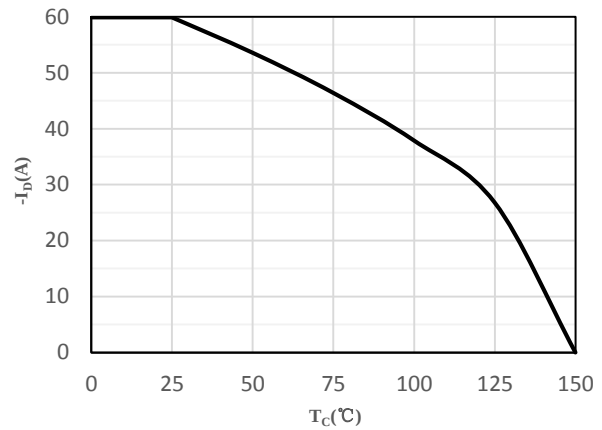


Fig 2 Drain Current

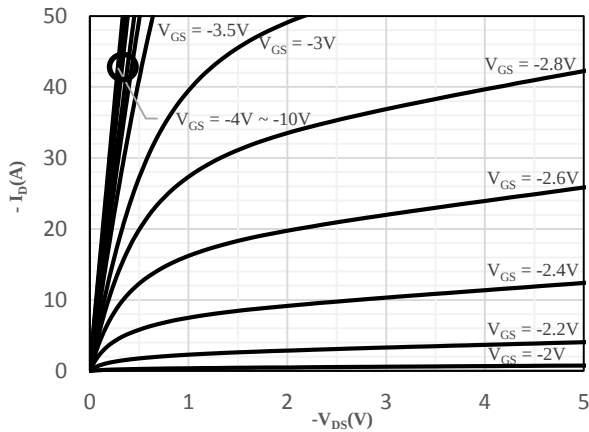


Fig 3 Typical Output Characteristics

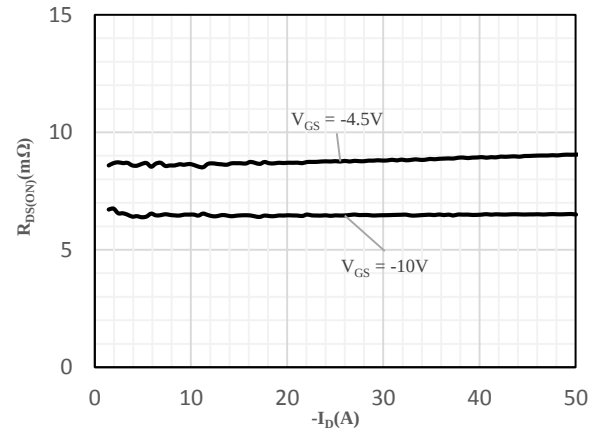


Fig 4 On-Resistance vs. Drain Current
and Gate Voltage

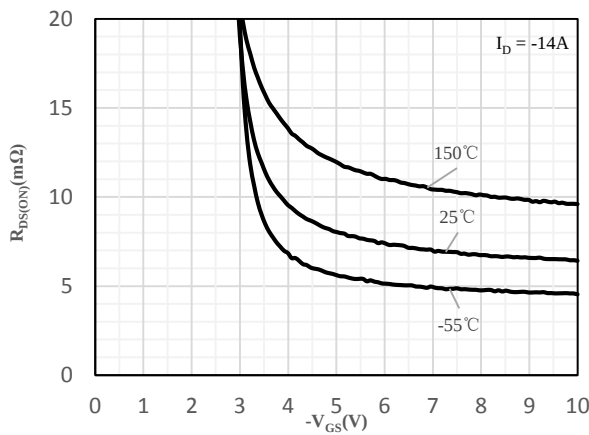


Fig 5 On-Resistance vs. Gate-Source Voltage

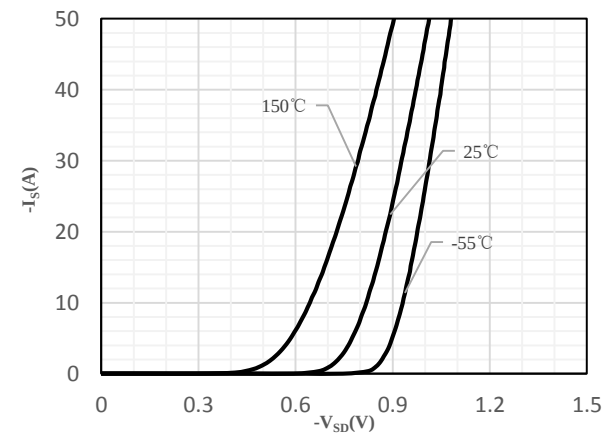


Fig 6 Body-Diode Characteristics

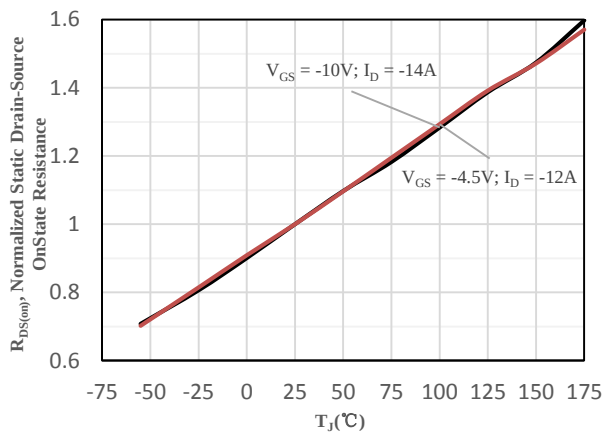


Fig 7 Normalized On-Resistance vs. Junction Temperature

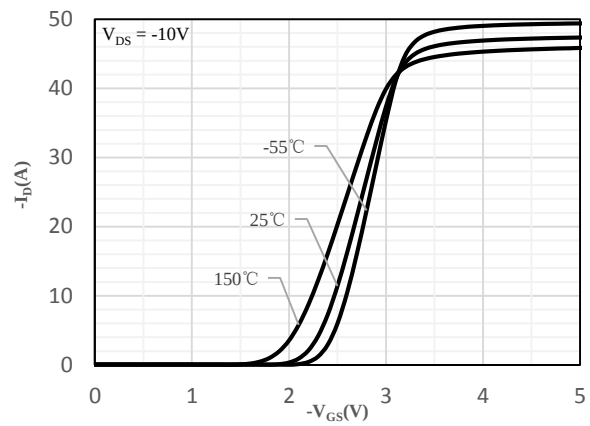


Fig 8 Transfer Characteristics

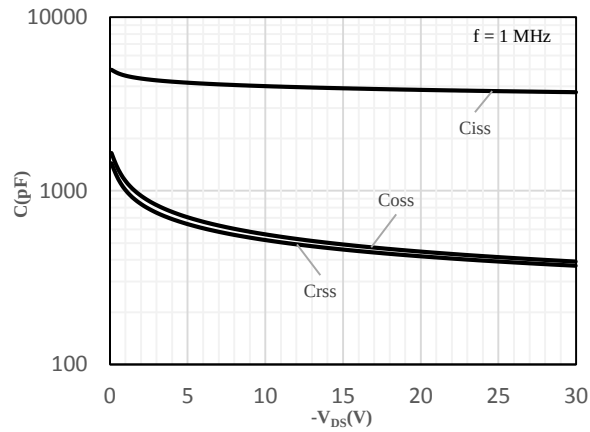


Fig 9 Capacitance Characteristics

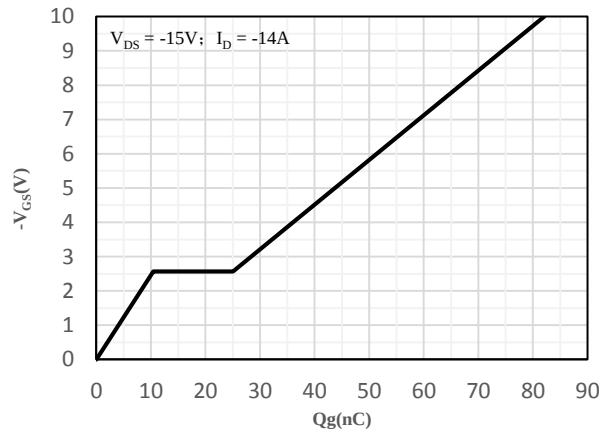


Fig 10 Gate-Charge Characteristics

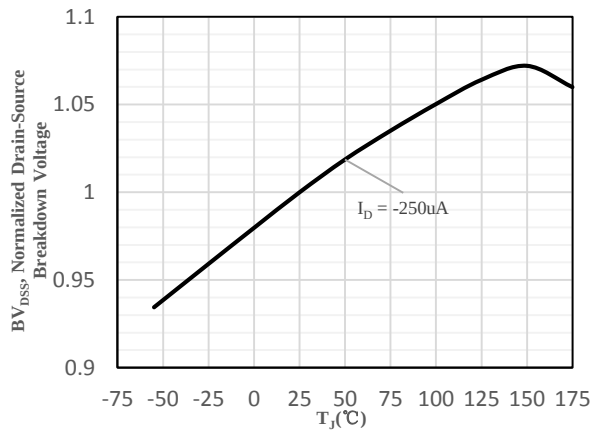


Fig 11 Normalized Breakdown Voltage vs. Junction Temperature

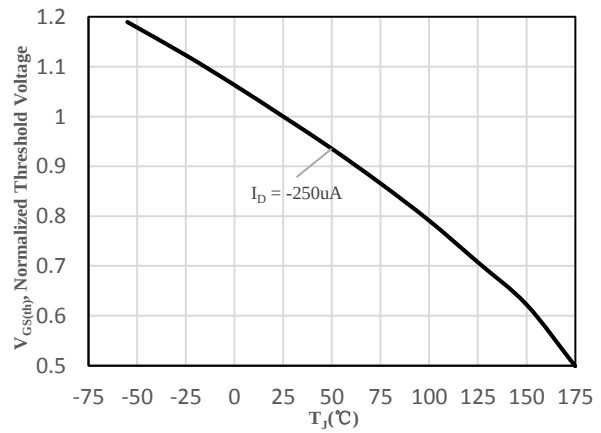
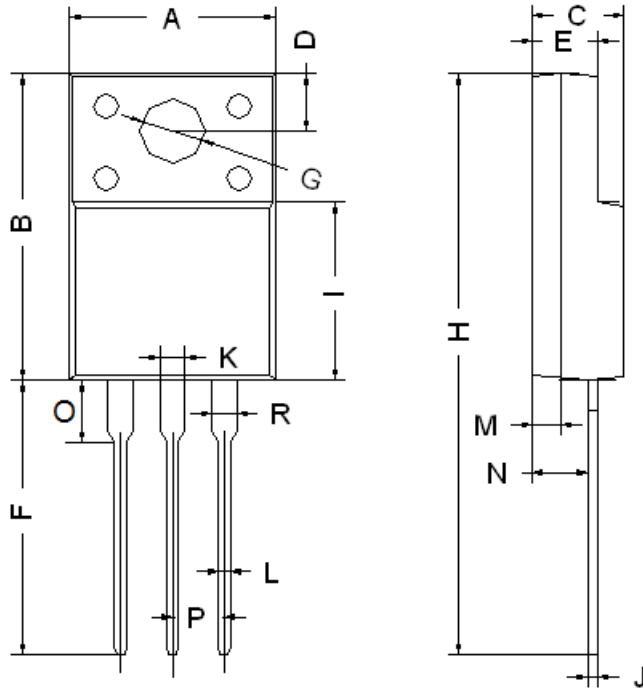


Fig 12 Normalized $V_{GS(th)}$ vs. Junction Temperature

Package Outline Dimensions (Unit: mm)



ITO-220AB		
Dimension	Min.	Max.
A	9.90	10.30
B	14.80	15.20
C	4.30	4.70
D	2.50	2.90
E	2.80	3.30
F	13.00	13.60
G	3.10	3.30
H	28.00	28.60
I	7.90	8.90
J	0.40	0.60
L	0.70	0.90
M	1.30	1.50
N	2.60	2.80
O	2.60	3.10
P	2.45	2.65
K/R	1.10	1.30

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