

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
900V	1.1Ω@10V	9A

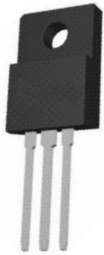
Feature

- Low $R_{DS(on)}$
- Fast switching
- Low gate charge
- Low Reverse transfer capacitances
- ESD protected

Application

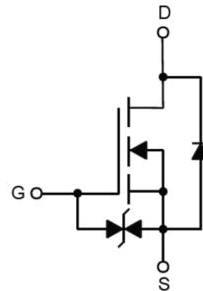
- Power switching application
- Power factor correction (PFC)

Package

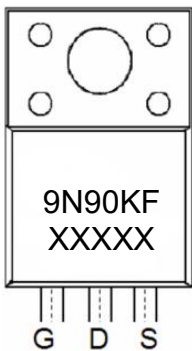


ITO-220AB

Circuit diagram



Marking



Absolute maximum ratings (T_C=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	900	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D	9	A
Continuous Drain Current (T _C =100°C)	I _D (100°C)	5.7	A
Pulsed Drain Current	I _{DM}	36	A
Power Dissipation(T _C =25°C)	P _D	42	W
Thermal Resistance,Junction-to-Case	R _{θJC}	3	°C/W
Single pulse avalanche energy ²⁾	E _{AS}	500	mJ
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Electrical characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	900			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =900V, V _{GS} = 0V			25	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±10	μA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.0		4.0	V
Drain-source on-resistance ¹⁾	R _{DS(on)}	V _{GS} =10V, I _D =4.5A			1.1	Ω
Dynamic characteristics³⁾						
Input Capacitance	C _{iSS}	V _{DS} =25V, V _{GS} =0V, f =1MHz		2716		pF
Output Capacitance	C _{oss}			211		
Reverse Transfer Capacitance	C _{rSS}			11		
Total Gate Charge	Q _g	V _{DD} =720V, I _D =9A, V _{GS} =10V		58		nC
Gate-Source Charge	Q _{gs}			10.6		
Gate-Drain Charge	Q _{gd}			23.4		
Turn-on delay time	t _{d(on)}	V _{DD} =450V, R _G =10Ω, I _D =9A		30.4		nS
Turn-on rise time	t _r			41.6		
Turn-off delay time	t _{d(off)}			82		
Turn-off fall time	t _f			52		
Source-Drain Diode characteristics						
Diode Forward Voltage ¹⁾	V _{SD}	V _{GS} =0V, I _{SD} =9A			1.5	V
Reverse Recovery Time	t _{rr}	I _{SD} =9 A, V _{GS} =0V, di/dt=100 A/us		845		nS
Reverse Recovery Charge	Q _{rr}			8		uC

Notes:

- 1) The data tested by pulsed, pulse width ≤ 300μs, duty cycle ≤ 2%
- 2) The E_{AS} data shows Max. rating. The test condition is V_{DD} = 100V, V_{GS} = 10V, L = 50mH
- 3) Guaranteed by design, not subject to production testing.

Typical Characteristics

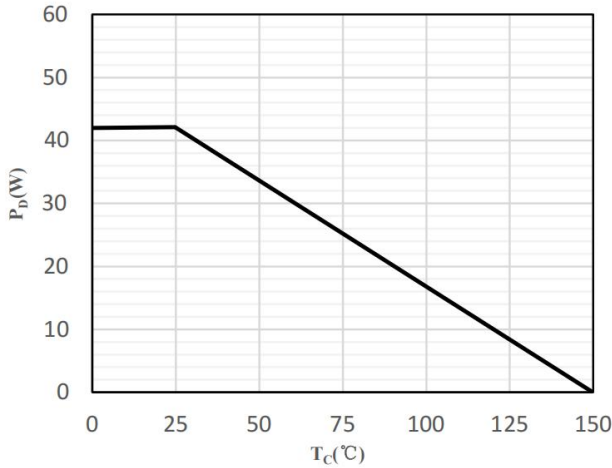


Fig 1 Power Dissipation

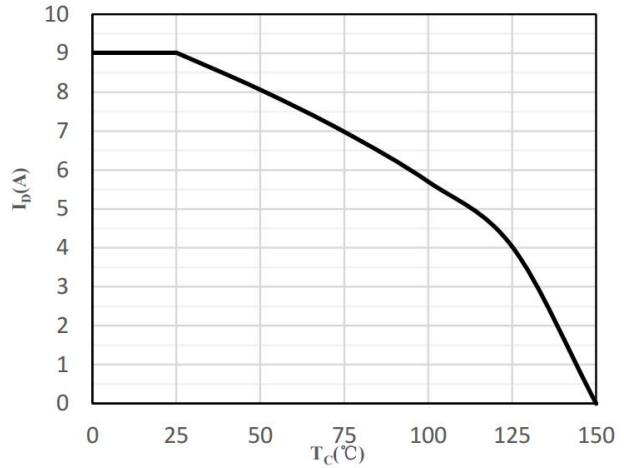


Fig 2 Drain Current

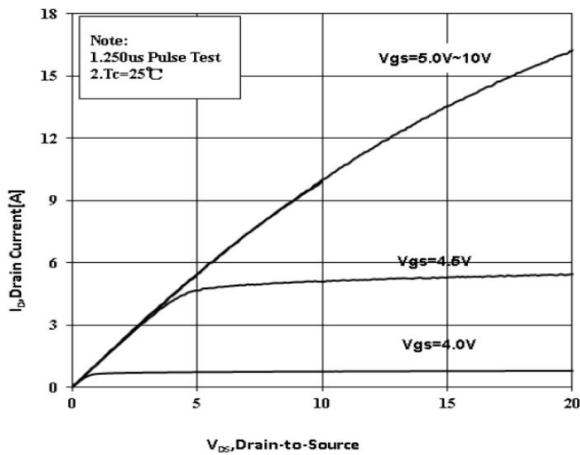


Fig 3 Typical Output Characteristics

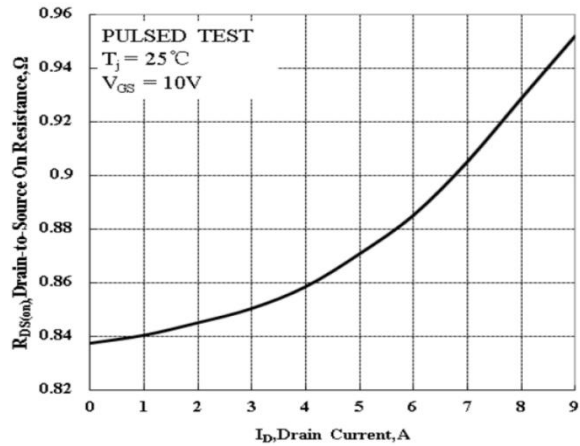


Fig 4 On-Resistance vs. Drain Current and Gate Voltage

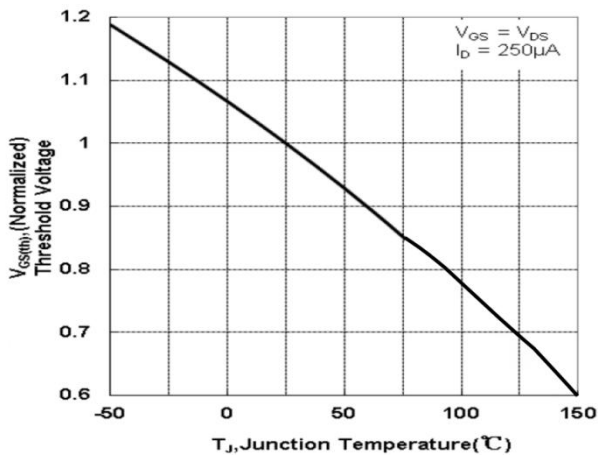


Fig 5 Normalized $V_{GS(th)}$ vs. Junction Temperature

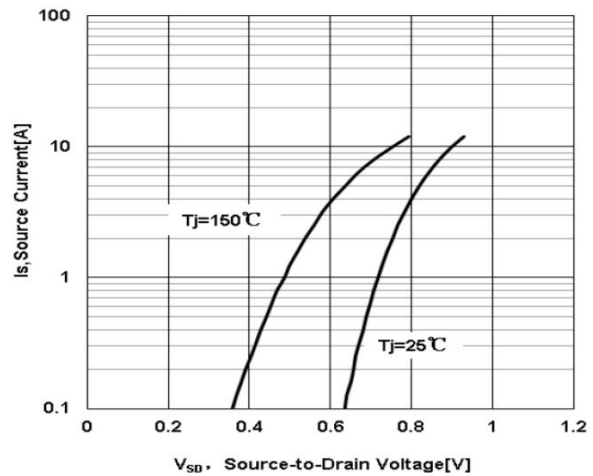


Fig 6 Body-Diode Characteristics

Typical Characteristics

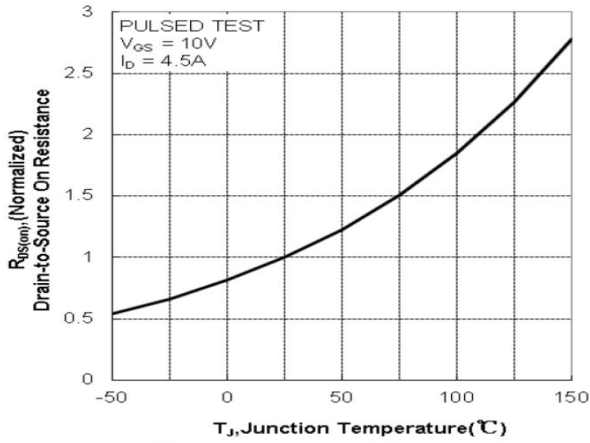


Fig 7 Normalized On-Resistance vs. Junction Temperature

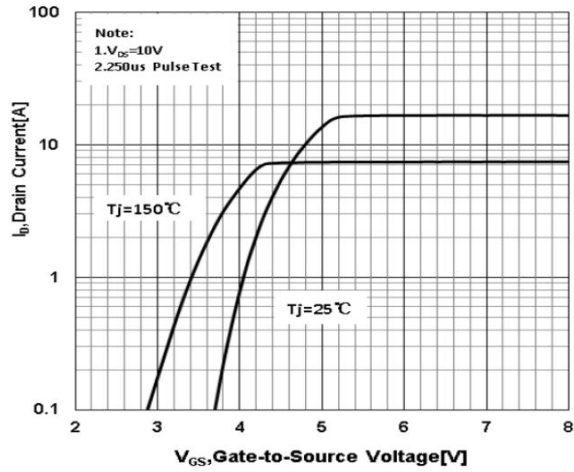


Fig 8 Transfer Characteristics

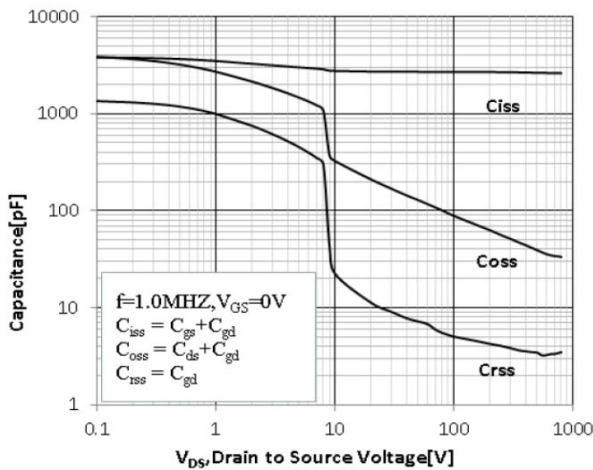


Fig 9 Capacitance Characteristics

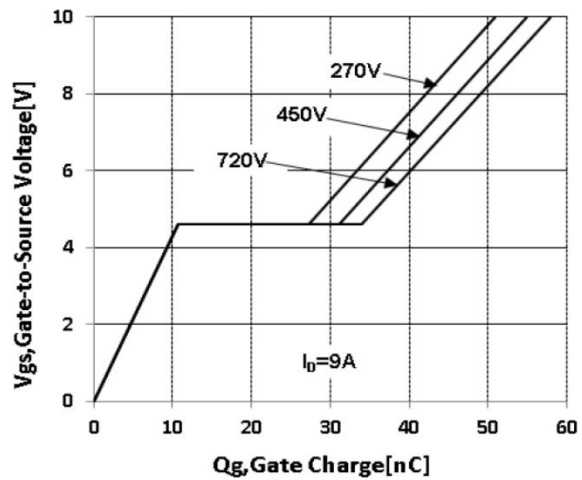


Fig 10 Gate-Charge Characteristics

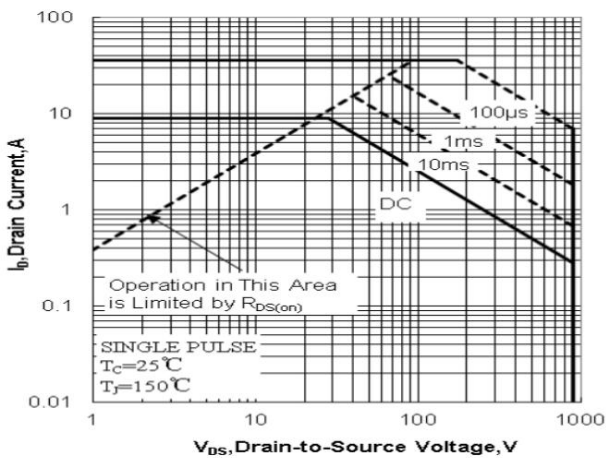
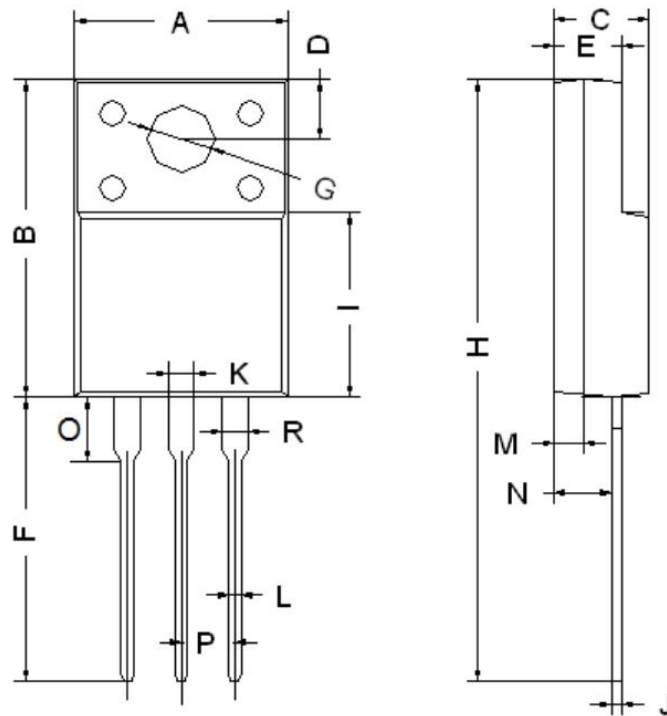


Fig 11 Safe Operation Area

ITO-220AB Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	9.900	10.300	0.390	0.406
B	14.800	15.200	0.583	0.598
C	4.300	4.700	0.169	0.185
D	2.500	2.900	0.098	0.114
E	2.800	3.300	0.110	0.130
F	13.000	13.600	0.512	0.535
G	3.100	3.300	0.122	0.130
H	28.000	28.600	1.102	1.126
I	7.900	8.900	0.311	0.350
J	0.400	0.600	0.016	0.024
L	0.700	0.900	0.028	0.035
M	1.300	1.500	0.051	0.059
N	2.600	2.800	0.102	0.110
O	2.600	3.100	0.102	0.122
P	2.450	2.650	0.096	0.104
K/R	1.100	1.300	0.043	0.051