

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
200V	38mΩ@10V	75A

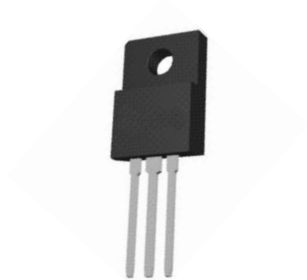
Feature

- Self-aligned planar technology
- Low conduction loss

Application

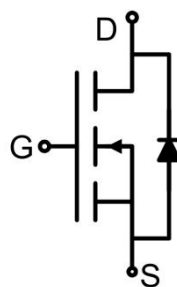
- Uninterruptible power supply (UPS)
- Power factor correction (PFC)

Package

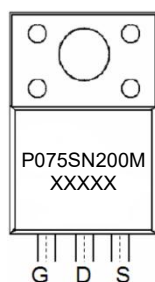


ITO-220AB

Circuit diagram



Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage (V _{GS} =0V)	V _{DS}	200	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D	75	A
Pulsed Drain Current ¹⁾	I _{DM}	280	A
Single Pulse Avalanche Energy ²⁾	E _{AS}	1800	mJ
Power Dissipation ³⁾	P _D	367	W
Thermal Resistance Junction to Case	R _{θJC}	0.5	°C/W
Operating Junction Temperature	T _J	-55 ~ +175	°C
Storage Temperature	T _{STG}	-55 ~ +175	°C

Electrical characteristics (T_J=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	200			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =200V, V _{GS} =0V			5	μA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	3	4	V
Drain-source on-resistance ⁴⁾	R _{DS(on)}	V _{GS} =10V, I _D =9A		30	38	mΩ
Dynamic characteristics ⁵⁾						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f =1MHz		3538		pF
Output Capacitance	C _{oss}			657		
Reverse Transfer Capacitance	C _{rss}			280		
Total Gate Charge	Q _g	V _{DS} =160V, V _{GS} =10V, I _D =50A		244		nC
Gate-Source Charge	Q _{gs}			16		
Gate-Drain Charge	Q _{gd}			144		
Turn-on delay time	t _{d(on)}	V _{DS} =100V, I _D =50A, R _G =25Ω		53		nS
Turn-on rise time	t _r			65		
Turn-off delay time	t _{d(off)}			689		
Turn-off fall time	t _f			230		
Source-Drain Diode characteristics						
Diode Forward Current	I _S	T _C =25℃			75	A
Diode Forward voltage	V _{SD}	V _{GS} =0V, I _S =50A			1.4	V
Reverse Recovery Time	T _{rr}	V _{GS} =0V, I _S =50A		208		nS
Reverse Recovery Charge	Q _{rr}	di/dt = 100A/μs		2.04		μC

Notes:

- 1) The data tested by surface mounted on a 1 inch² FR-4 board with 20Z copper.
- 2) The EAS data shows Max. rating. I_{AS}=25A, V_{DD} = 50V, R_G = 25Ω, Starting T_J = 25°C.
- 3) The power dissipation is limited by 175°C junction temperature.
- 4) The test condition is Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤ 1%.
- 5) Guaranteed by design, not subject to production testing.

Typical Characteristics

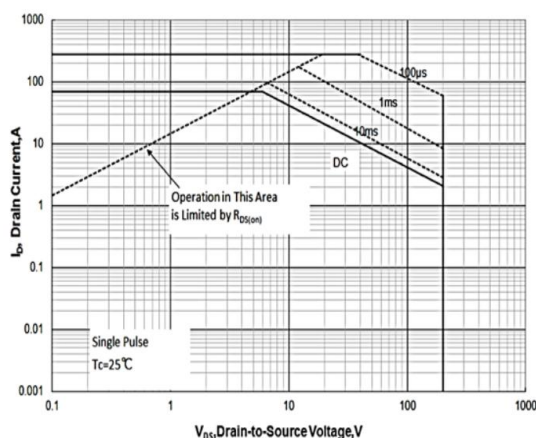


Figure 1 Maximum Forward Bias Safe Operating Area

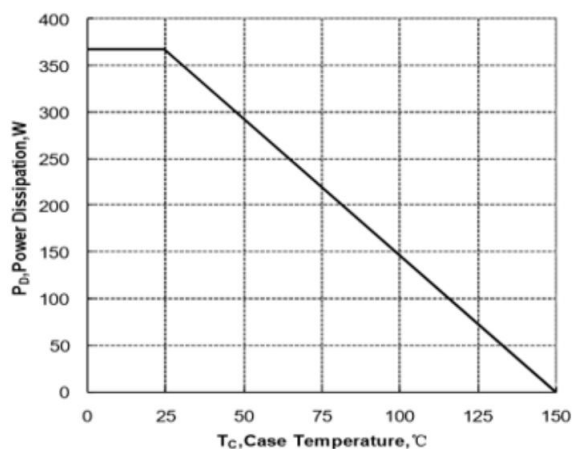


Figure 2 Maximum Power dissipation vs Case Temperature

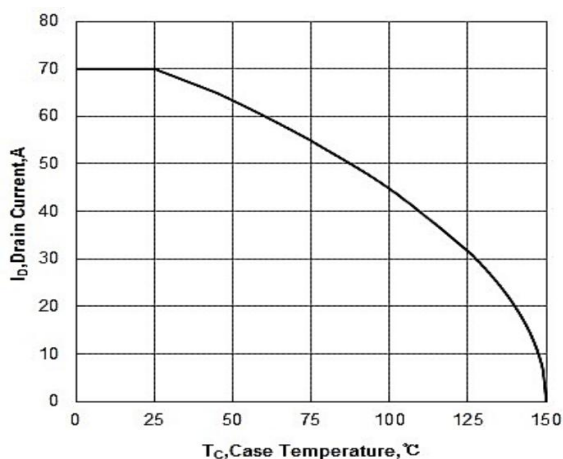


Figure 3 Maximum Continuous Drain Current vs Case Temperature

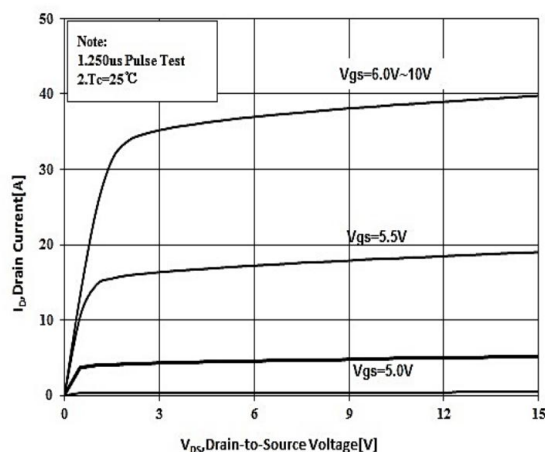


Figure 4 Typical Output Characteristics

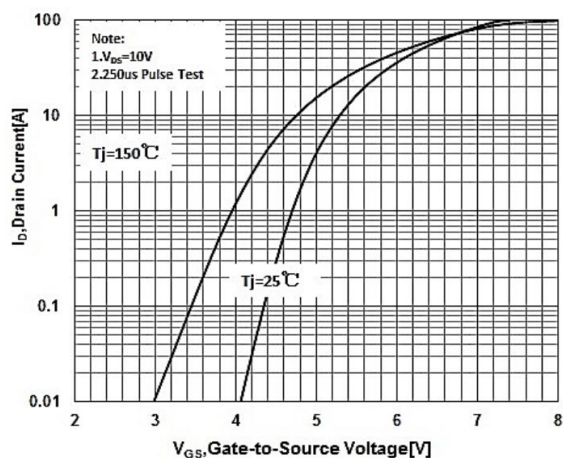


Figure 5: Typical Transfer Characteristics

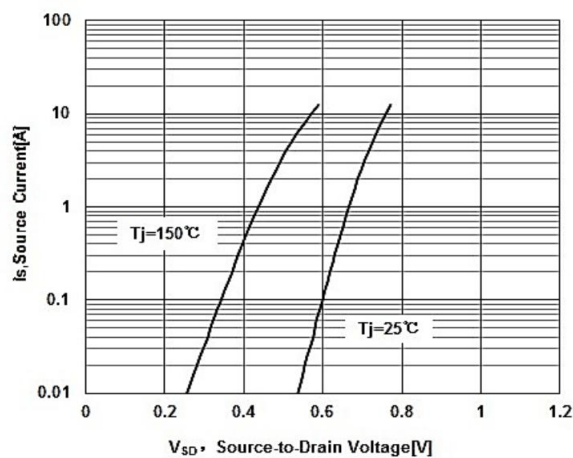


Figure 6: Typical Body Diode Transfer Characteristics

Typical Characteristics

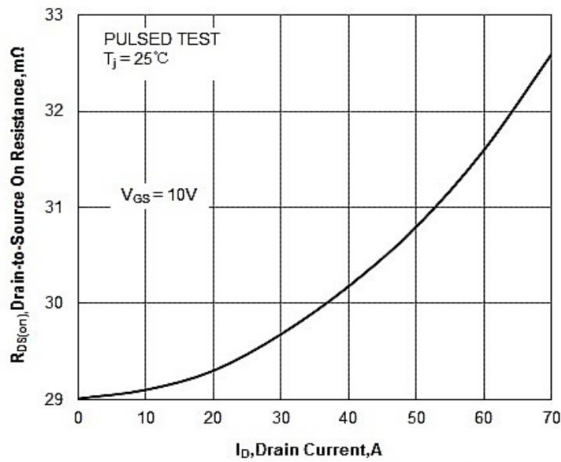


Figure 7: Source ON Resistance vs Drain Current

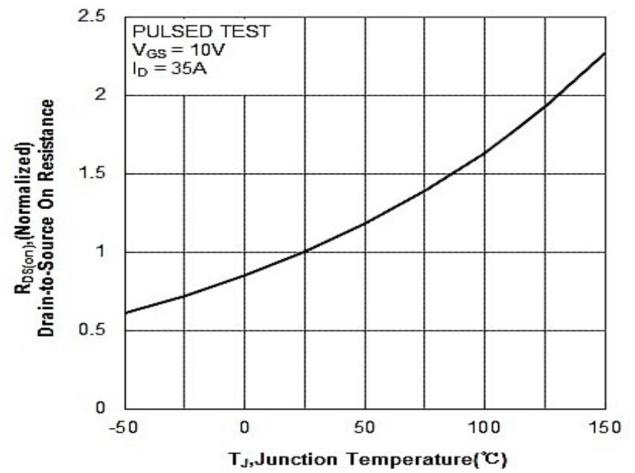


Figure 8: Source on Resistance vs Junction Temperature

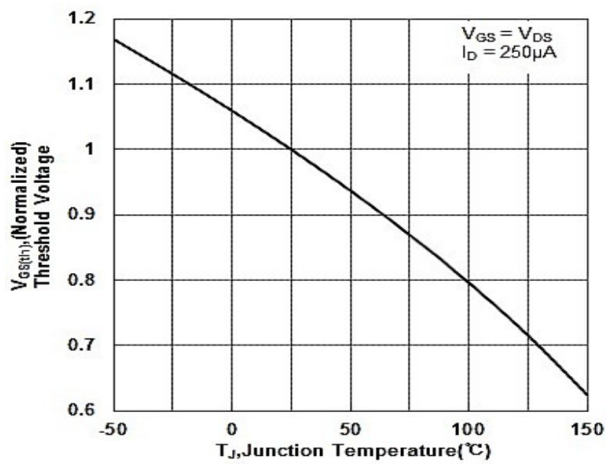


Figure 9 Typical Theshold Voltage vs Junction Temperature

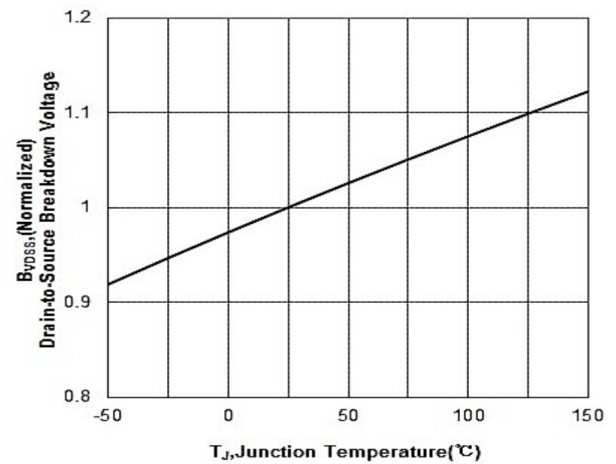


Figure 10 Typical Breakdown Voltage vs Junction Temperature

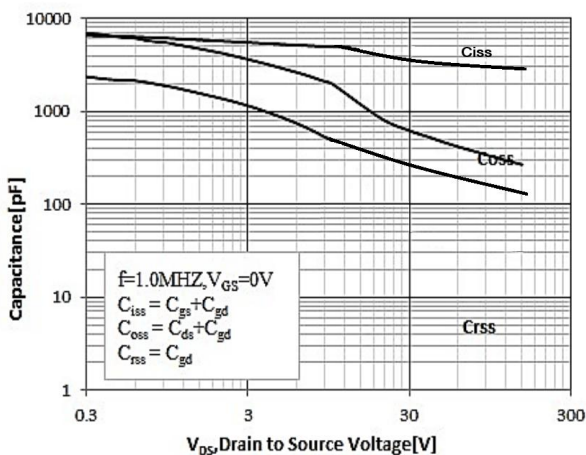


Figure 11 Typical Capacitance vs Drain to Source Voltage

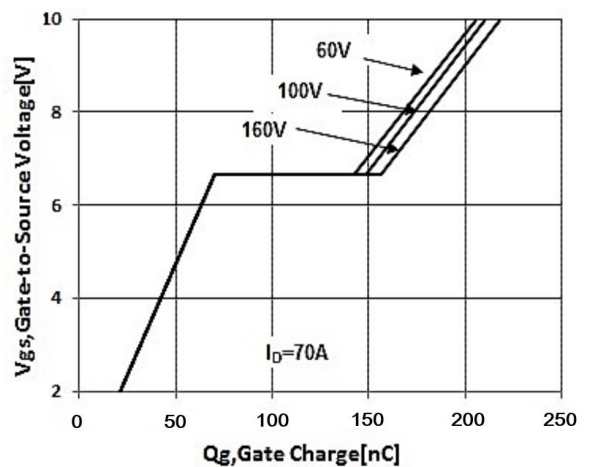
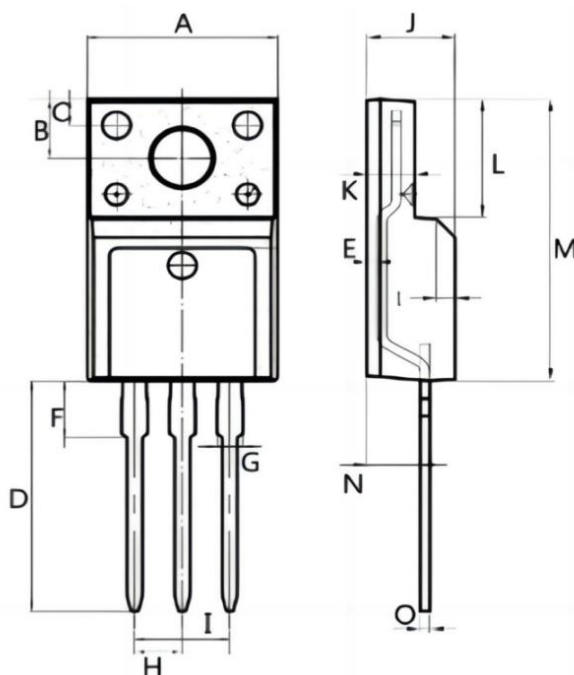


Figure 12 Typical Gate Charge vs Gate to Source Voltage

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	2.900	3.500	0.114	0.138
C	1.150	1.450	0.045	0.057
D	12.750	13.250	0.502	0.522
E	0.550	0.750	0.022	0.030
F	3.100	3.500	0.122	0.138
G	1.250	1.450	0.049	0.057
H	2.540 BSC.		0.100 BSC.	
I	5.080 BSC.		0.200 BSC.	
J	4.550	4.750	0.179	0.187
K	2.400	2.700	0.094	0.106
L	6.350	6.750	0.250	0.266
M	15.000	16.000	0.591	0.630
N	2.750	3.150	0.108	0.124
O	0.450	0.600	0.018	0.024