

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
800V	$1\Omega@10V$	10A

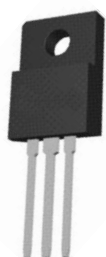
Feature

- Self-aligned planar Technology
- Low conduction loss

Application

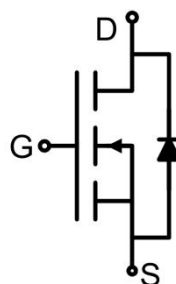
- Uninterruptible power supply (UPS)
- Power factor correction (PFC)

Package

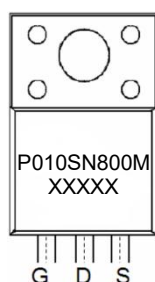


ITO-220AB

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}	800	V
Gate-Source Voltage	V _{GS}	±30	V
Continuous Drain Current	I _D	10	A
Pulsed Drain Current ¹⁾	I _{DM}	40	A
Single Pulse Avalanche Energy ²⁾	E _{AS}	520.2	mJ
Power Dissipation ³⁾	P _D	43.9	W
Thermal Resistance Junction to Case	R _{θJC}	2.85	°C/W
Operating Junction Temperature	T _J	-55 ~ +150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°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	800			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =800V, V _{GS} =0V			1	μA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±30V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	3	4	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =5A		0.77	1	Ω
Dynamic characteristics ³⁾						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f =1MHz		1945		pF
Output Capacitance	C _{oss}			211		
Reverse Transfer Capacitance	C _{rss}			143		
Total Gate Charge	Q _g	V _{DS} =400V, V _{GS} =10V, I _D =10A		82		nC
Gate-Source Charge	Q _{gs}			8.5		
Gate-Drain Charge	Q _{gd}			50		
Turn-on delay time	t _{d(on)}	V _{DS} =400V, I _D =10A, R _G =25Ω		43		nS
Turn-on rise time	t _r			27		
Turn-off delay time	t _{d(off)}			150		
Turn-off fall time	t _f			48		
Source-Drain Diode characteristics						
Diode Forward Current	I _S	T _C =25°C			10	A
Diode Forward voltage	V _{SD}	V _{GS} =0V, I _S =5A			1.4	V
Reverse Recovery Time	T _{rr}	V _{GS} =0V, I _S =10A di/dt =100A/μs		515		nS
Reverse Recovery Charge	Q _{rr}			7.8		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}=4.5A, V_{DD}=50V, R_G=25Ω, Starting T_J=25 °C.
- 3) The power dissipation is limited by 150°C junction temperature.
- 4) Guaranteed by design, not subject to production testing.

Typical Characteristics

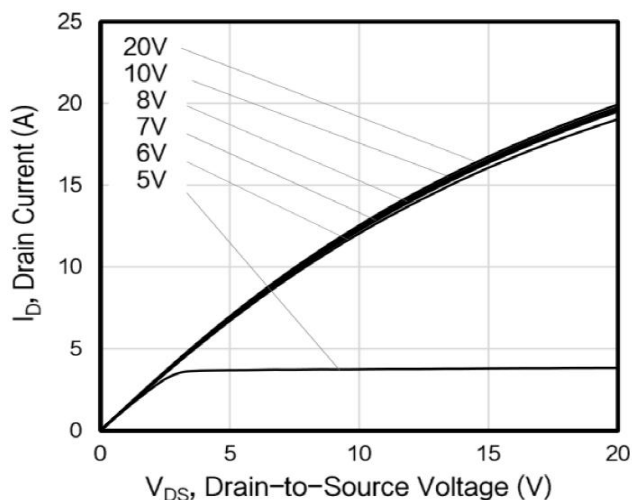


Figure 1. Output Characteristics

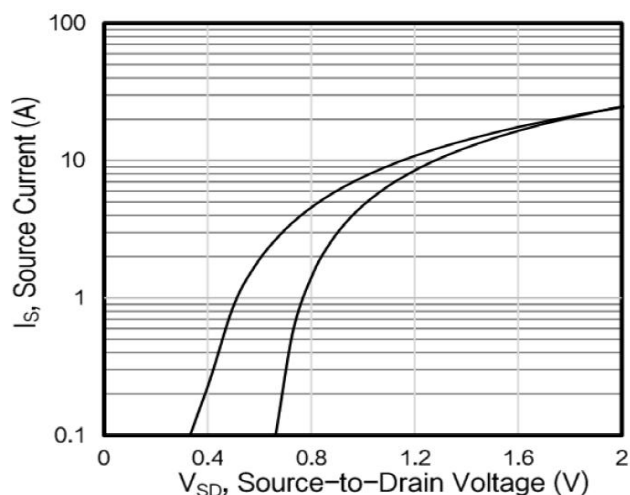


Figure 2. Body Diode Forward Voltage

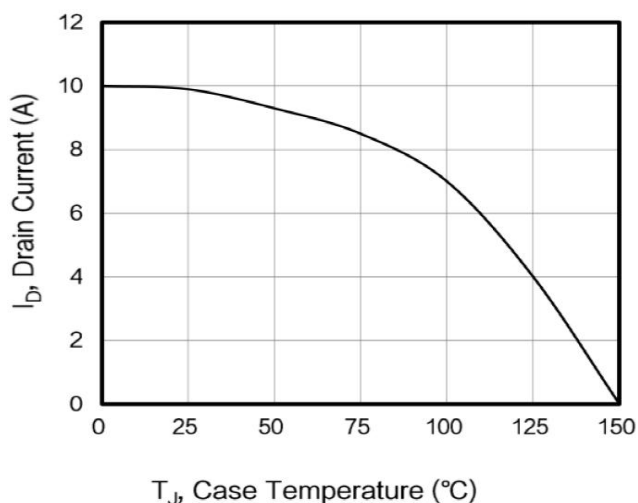


Figure3. Drain Current vs. Temperature

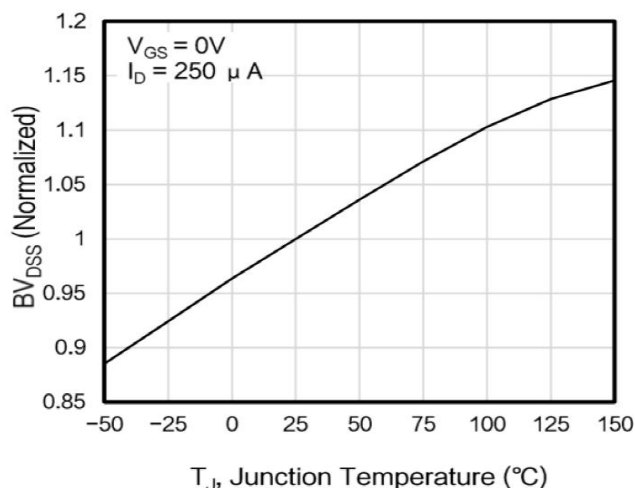


Figure4. BVDSS Variation vs. Temperature

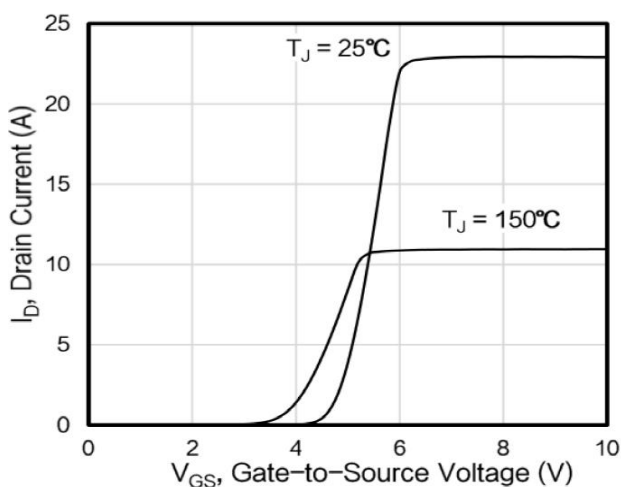


Figure 5. Transfer Characteristics

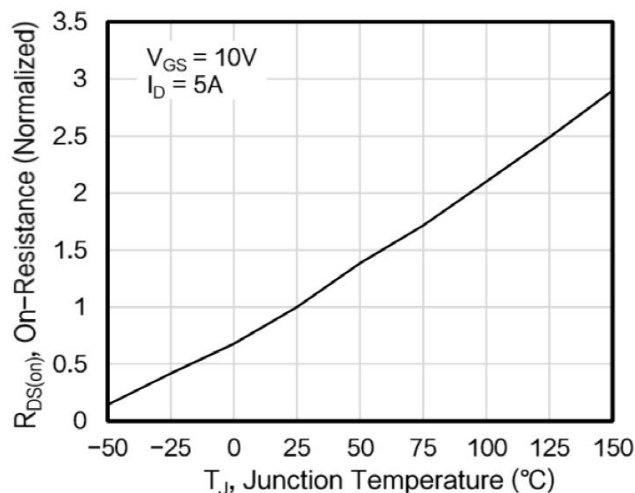


Figure 6. On-Resistance vs. Temperature

Typical Characteristics

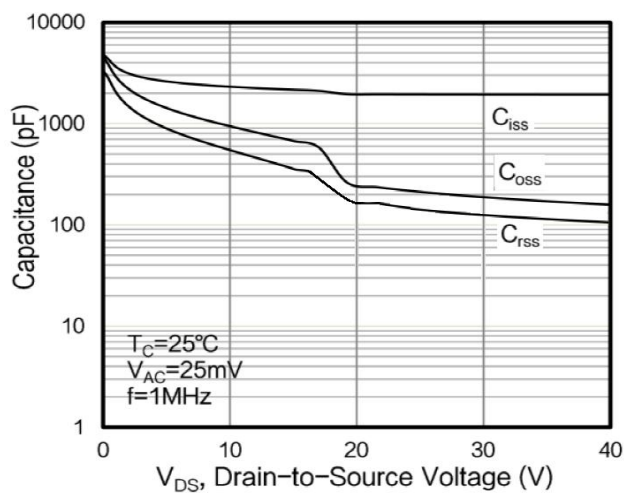


Figure 7. Capacitance

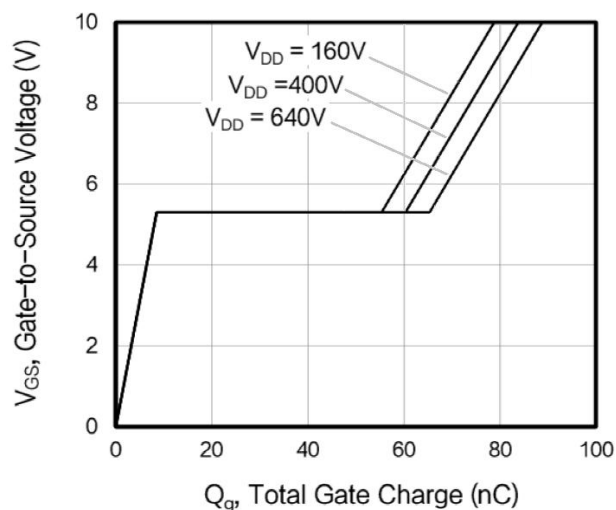


Figure 8. Gate Charge

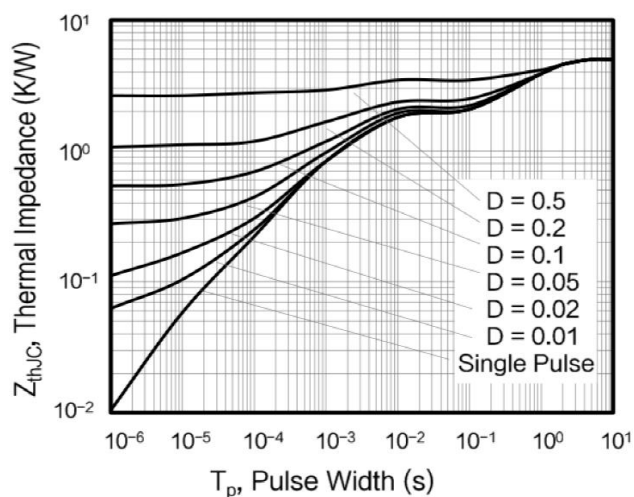
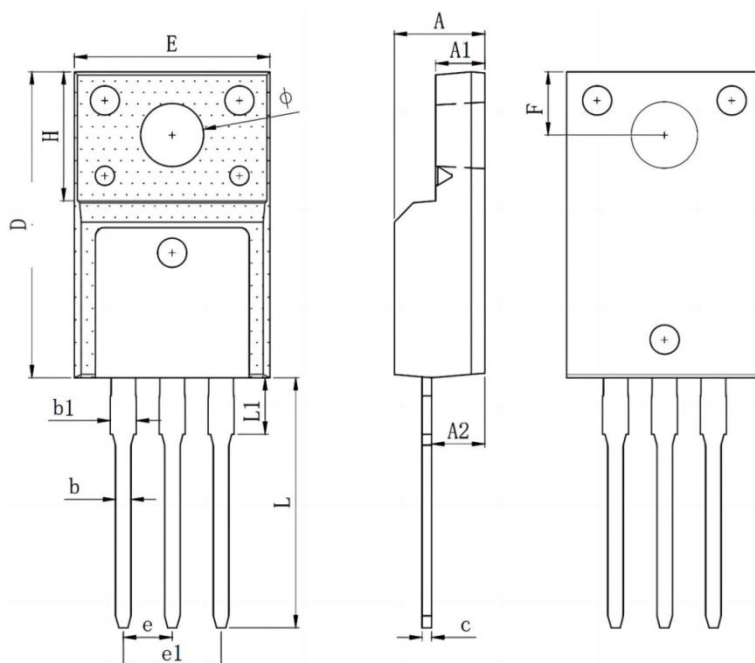


Figure 9. Transient Thermal Impedance

ITO-220AB Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.500	5.000	0.177	0.197
A1	2.340	2.840	0.092	0.112
A2	2.400	3.400	0.094	0.134
b	0.700	0.950	0.028	0.037
b1	1.050	1.550	0.041	0.061
c	0.400	0.650	0.016	0.026
D	15.570	16.170	0.613	0.637
H	6.700 REF.		0.264 REF.	
E	9.860	10.460	0.388	0.412
e	2.540 BSC.		0.100 BSC.	
e1	5.080 BSC.		0.200 BSC.	
L	12.650	13.300	0.498	0.524
L1	2.780	3.380	0.109	0.133
F	3.150	3.550	0.124	0.140
φ	3.000	3.650	0.118	0.144