

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
150V	8.7mΩ@10V	110A

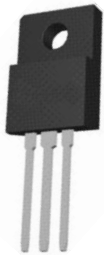
### Feature

- Fast Switching
- Low Gate Charge and R<sub>ds(on)</sub>

### Application

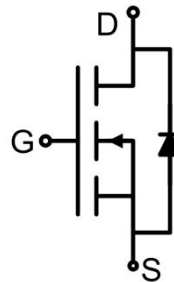
- Power switching application
- DC-DC Converter
- Power Management

### Package

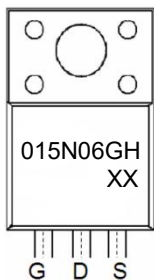


ITO-220AB

### Circuit diagram



### Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	150	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current(T <sub>C</sub> =25°C)	I <sub>D</sub>	110	A
Pulsed Drain Current	I <sub>DM</sub>	440	A
Power Dissipation(T <sub>C</sub> =25°C)	P <sub>D</sub>	375	W
Thermal Resistance,Junction-to-Case	R <sub>θJC</sub>	0.33	°C/W
Single pulse avalanche energy <sup>1)</sup>	E <sub>AS</sub>	1056	mJ
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

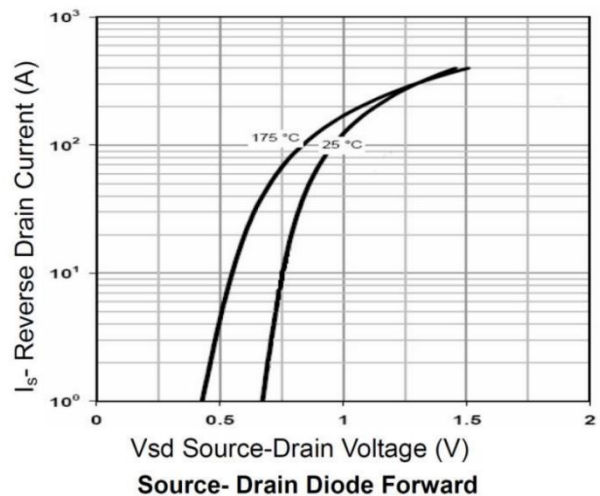
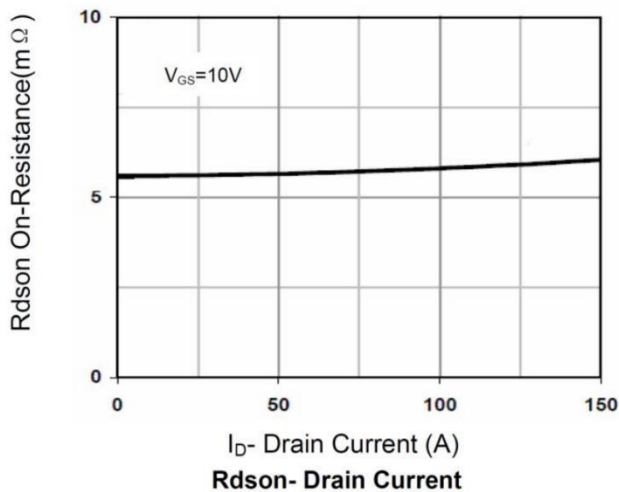
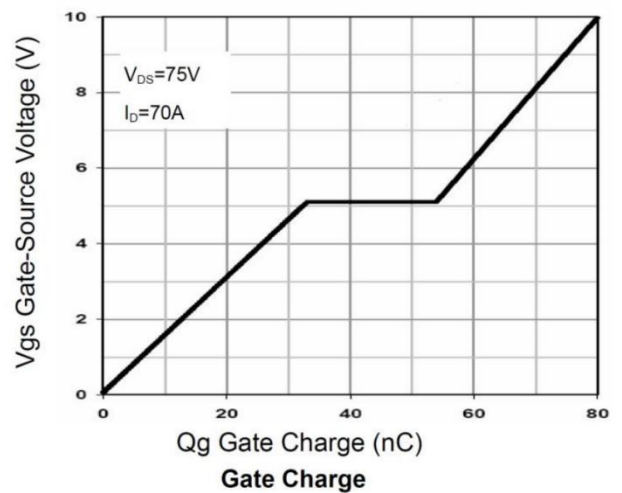
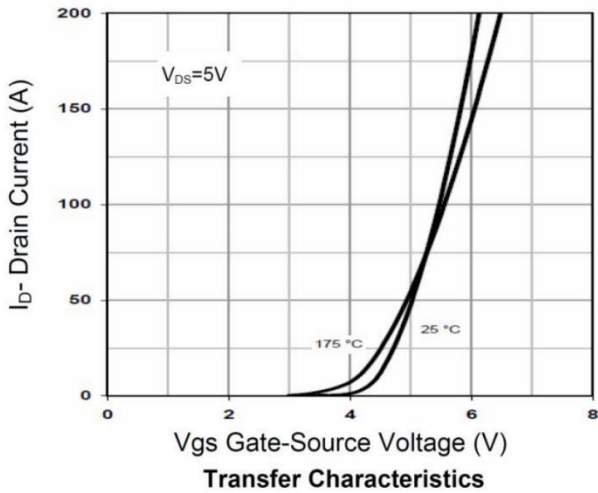
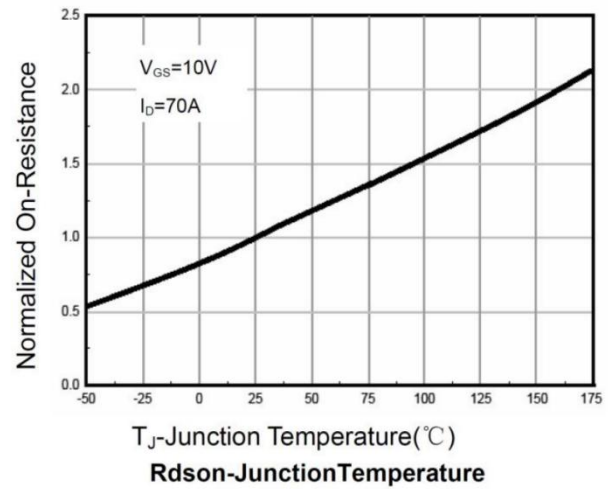
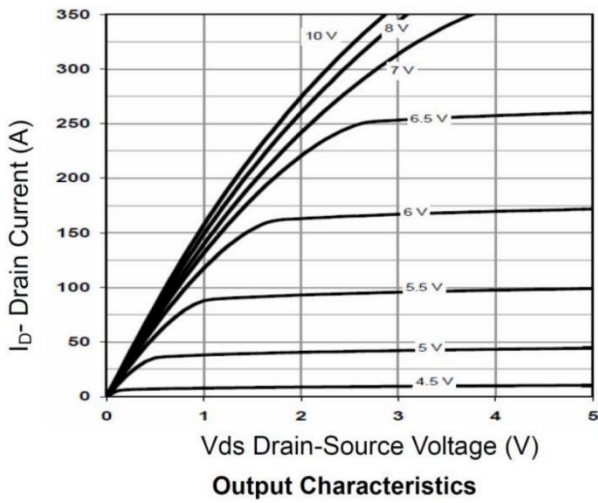
### Electrical characteristics (Ta=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	150			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = 120V, V <sub>GS</sub> = 0V			1.0	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±100	nA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	2.0		4.0	V
Drain-source on-resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 20A		6.9	8.7	mΩ
<b>Dynamic characteristics<sup>2)</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 75V, V <sub>GS</sub> = 0V, f = 1MHz		5280		pF
Output Capacitance	C <sub>oss</sub>			653		
Reverse Transfer Capacitance	C <sub>rss</sub>			24		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 75V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 70A		80		nC
Gate-Source Charge	Q <sub>gs</sub>			33		
Gate-Drain Charge	Q <sub>gd</sub>			21		
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DS</sub> = 75V, V <sub>GS</sub> = 10V, R <sub>G</sub> = 4.7Ω, R <sub>L</sub> = 3Ω		26		nS
Turn-on rise time	t <sub>r</sub>			35		
Turn-off delay time	t <sub>d(off)</sub>			45		
Turn-off fall time	t <sub>f</sub>			17		
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage	V <sub>DS</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 1A			1.2	V

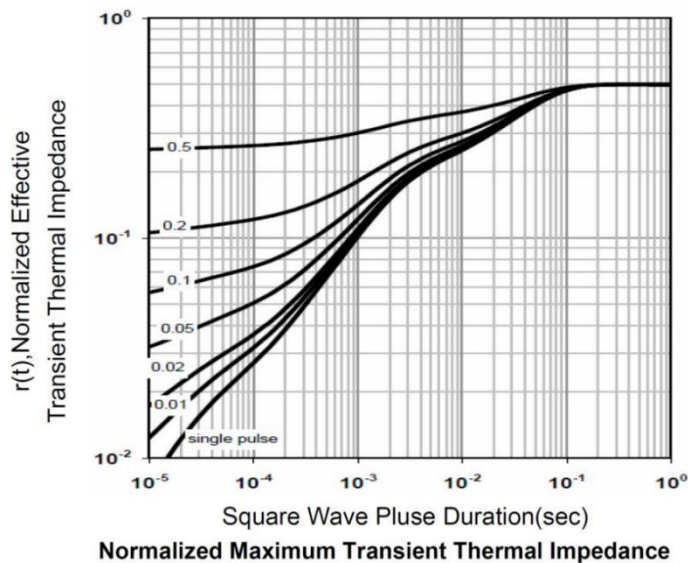
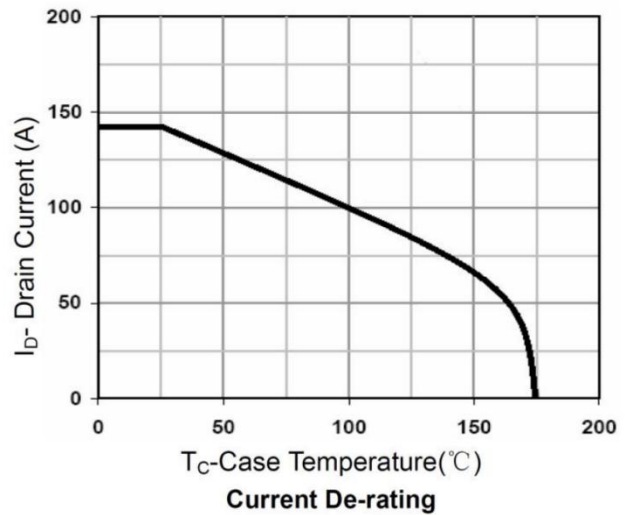
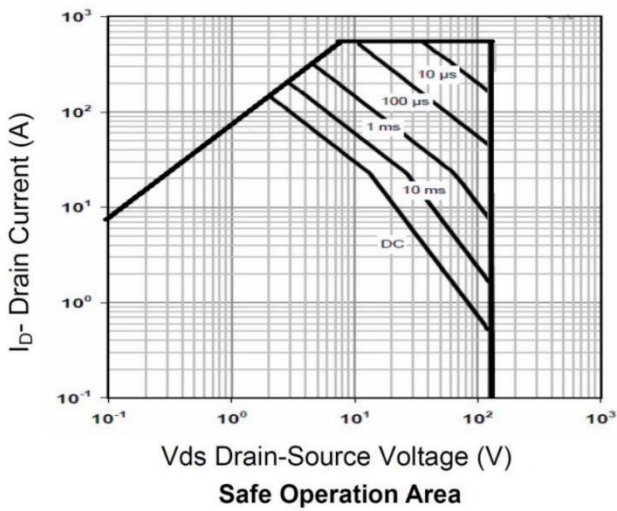
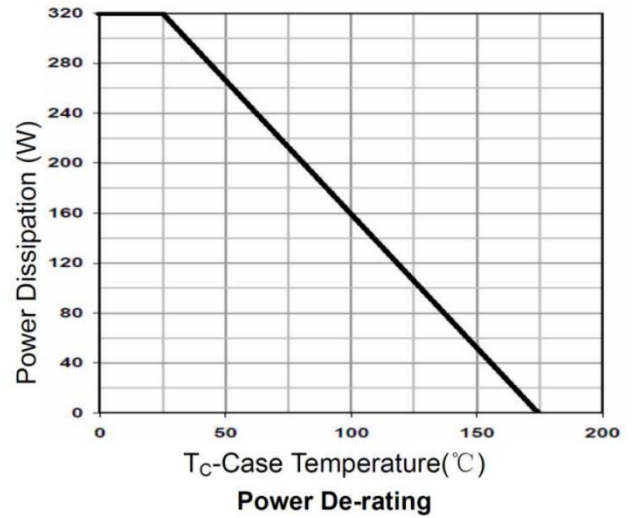
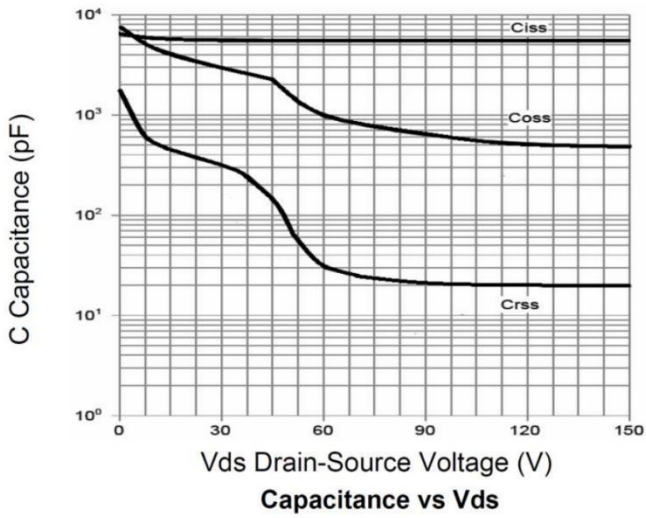
Notes:

- 1) EAS is tested at starting T<sub>J</sub> = 25°C, V<sub>DD</sub> = 75V, V<sub>GS</sub> = 10V, L = 0.5mH, R<sub>G</sub> = 25Ω.
- 2) Guaranteed by design, not subject to production testing.

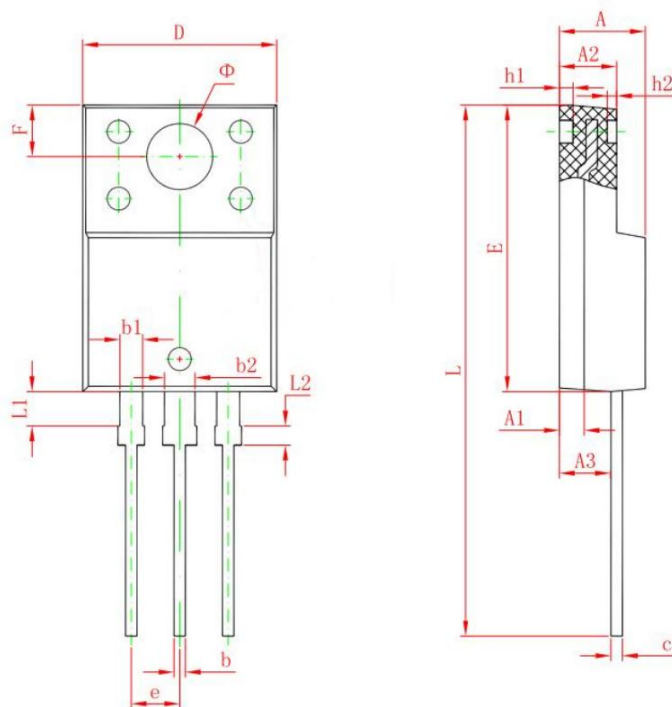
## Typical Characteristics



## Typical Characteristics



### ITO-220AB Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.300	4.700	0.169	0.185
A1	1.300 REF		0.051 REF	
A2	2.800	3.200	0.110	0.126
A3	2.500	2.900	0.098	0.114
b	0.500	0.750	0.020	0.030
b1	1.100	1.350	0.043	0.053
b2	1.500	1.750	0.059	0.069
c	0.500	0.750	0.020	0.030
D	9.960	10.360	0.392	0.408
E	14.800	15.200	0.583	0.598
e	2.540 TYP		0.100 TYP	
F	2.700 REF		0.106 REF	
Φ	3.500 REF		0.138 REF	
h1	0.800 REF		0.031 REF	
h2	0.500 REF		0.020 REF	
L	28.000	28.400	1.102	1.120
L1	1.700	1.900	0.067	0.075
L2	0.900	1.100	0.035	0.043