

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
100V	2.6m $\Omega$ @10V	220A

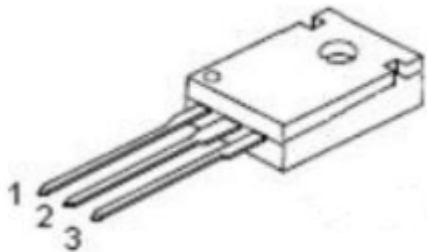
## Feature

- Fast Switching
- Low Gate Charge and Rdson
- 100% Single Pulse avalanche energy Test

## Application

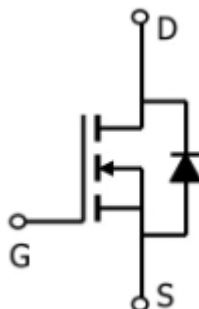
- Power switching application
- DC-DC Converter
- Power Management

## Package

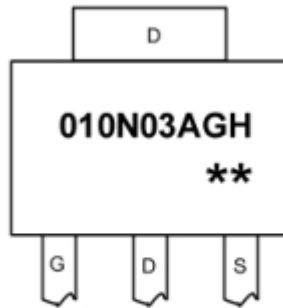


TO-247(1:G 2:D 3:S)

## Circuit diagram



## Marking



**010N03AGH** : Product code  
**\*\*** : Week code

## Absolute maximum ratings

( $T_a=25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current ( $T_c = 25^\circ\text{C}$ )	$I_D$	220	A
Pulsed Drain Current	$I_{DM}$	880	A
Total Power Dissipation( $T_c = 25^\circ\text{C}$ )	$P_D$	300	W
Single Pulse Avalanche Energy <sup>1</sup>	$E_{AS}$	1600	mJ
Thermal Resistance Junction-Case	$R_{\theta JC}$	0.42	$^\circ\text{C}/\text{W}$
Operation and storage temperature	$T_{STG}, T_J$	-55~ +150	$^\circ\text{C}$

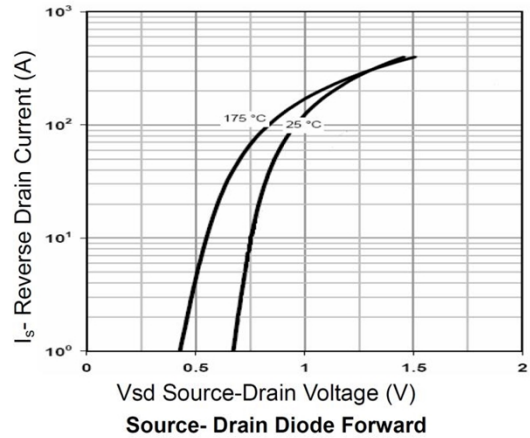
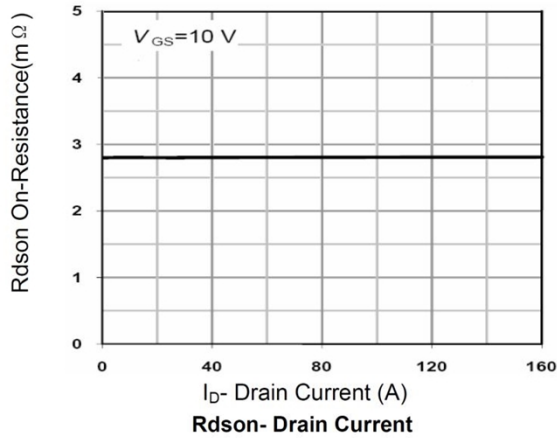
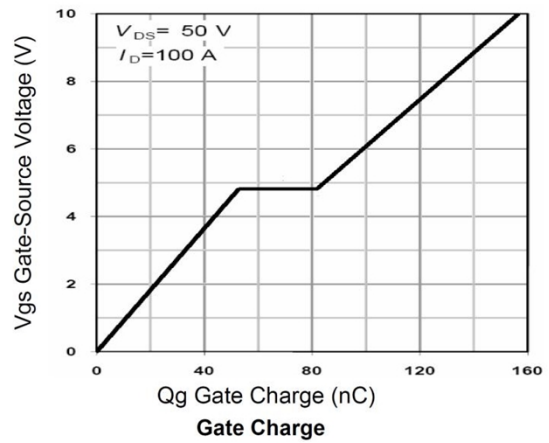
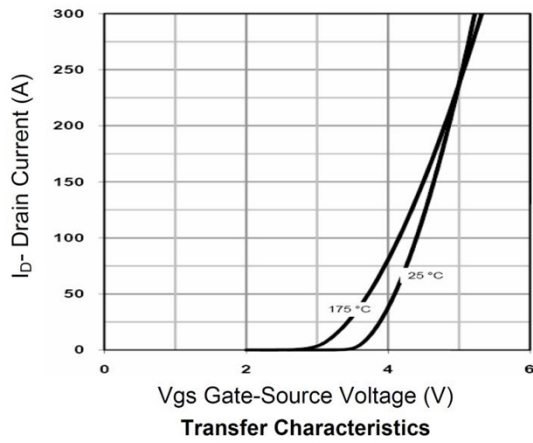
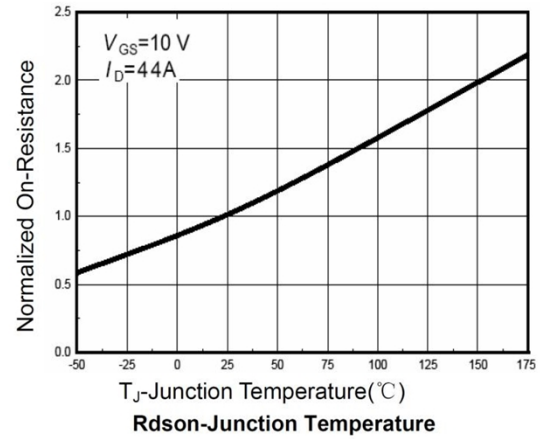
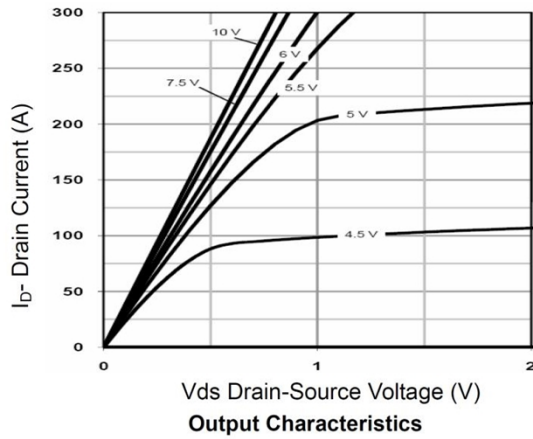
## Electrical characteristics

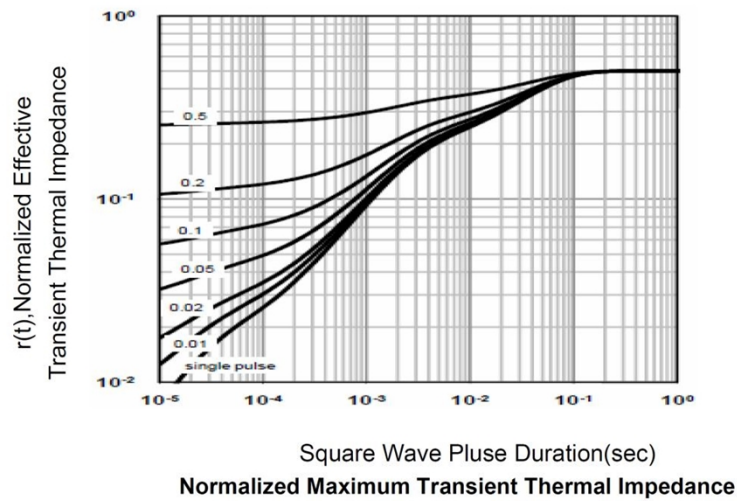
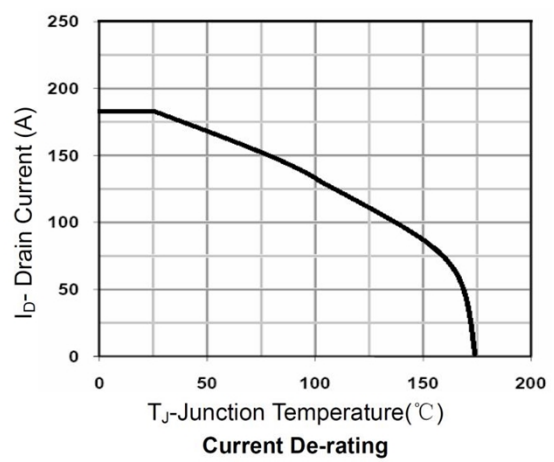
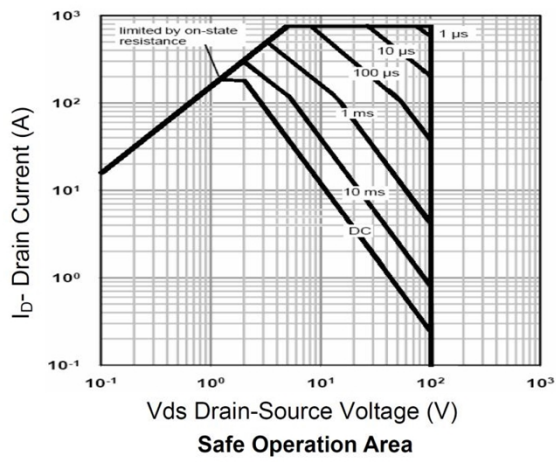
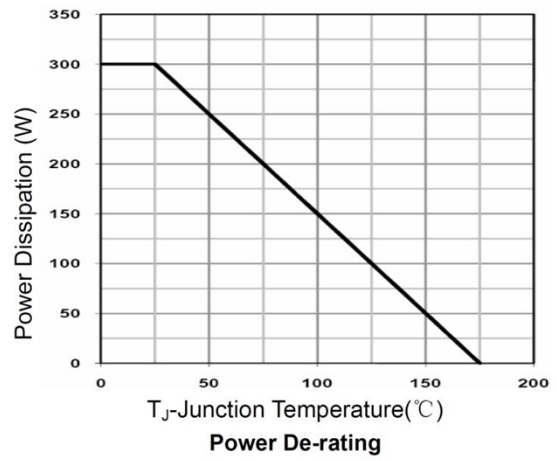
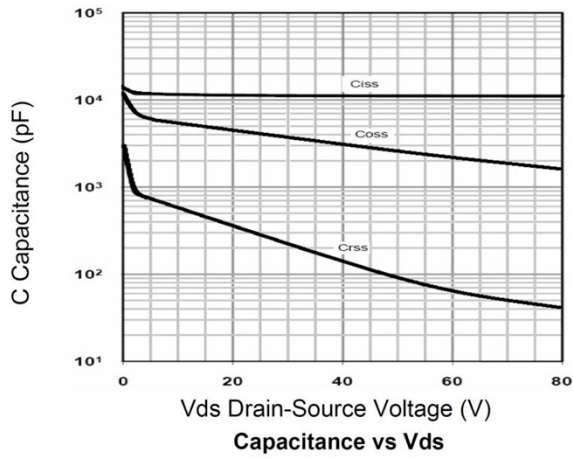
(T<sub>A</sub>=25°C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV <sub>DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	100			V
Drain Cut-Off Current	I <sub>DSS</sub>	V <sub>DS</sub> =80V,V <sub>GS</sub> = 0V			1	uA
Gate Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±0.1	uA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	2	2.5	4	V
Static Drain-Source on-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =30A		2.6	3.3	Ω
Dynamic characteristics						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =50V, V <sub>GS</sub> =0V, f=1MHz		6980		pF
Output Capacitance	C <sub>oss</sub>			653		
Reverse Transfer Capacitance	C <sub>rss</sub>			24		
Switching Characteristics						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =50V, V <sub>GS</sub> =10V, I <sub>D</sub> =100A		158		nC
Gate-Source Charge	Q <sub>gS</sub>			53		
Gate-Drain Charge	Q <sub>gd</sub>			27		
Turn-On Delay Time	T <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =50V, I <sub>D</sub> =100A, R <sub>G</sub> =6.0Ω		26		nS
Rise Time	T <sub>r</sub>			75		
Turn-Off Delay Time	T <sub>d(off)</sub>			87		
Fall Time	T <sub>f</sub>			30		
Diode Characteristics						
Diode Forward Voltage2	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =1A			1.2	V

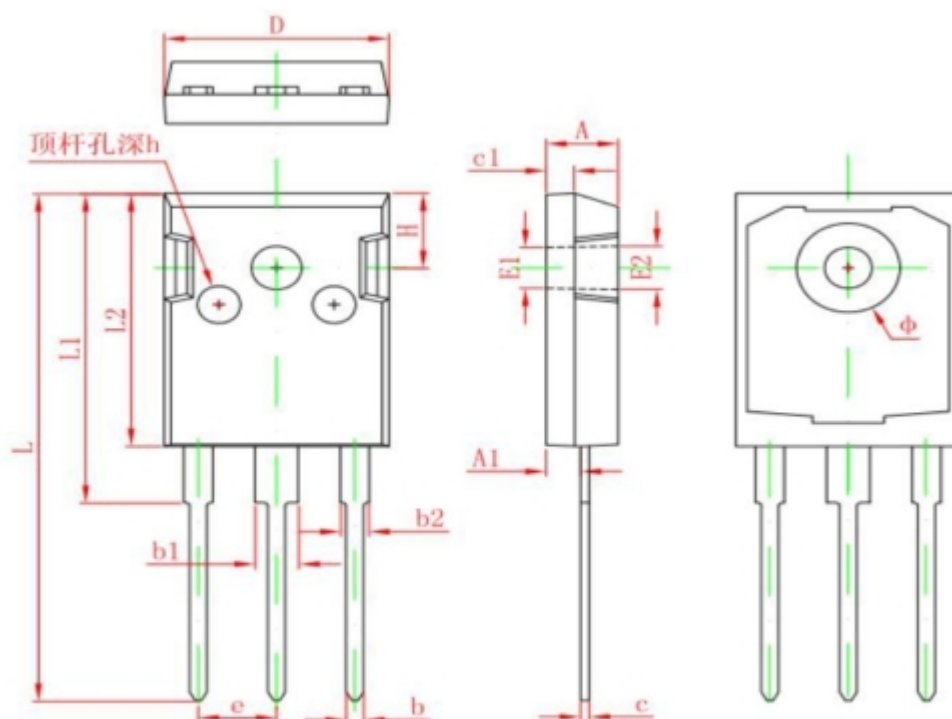
**Notes:**1. E AS is tested at starting T<sub>j</sub> = 25°C, V<sub>DD</sub> = 50V, V<sub>GS</sub> = 10V, L = 0.5mH, R<sub>g</sub> = 25Ω;

## Typical Characteristics





## TO-247 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.850	5.150	0.191	0.200
A1	2.200	2.600	0.087	0.102
b	1.000	1.400	0.039	0.055
b1	2.800	3.200	0.110	0.126
b2	1.800	2.200	0.071	0.087
c	0.500	0.700	0.020	0.028
c1	1.900	2.100	0.075	0.083
D	15.450	15.750	0.608	0.620
E1	3.500 REF.		0.138 REF.	
E2	3.600 REF.		0.142 REF.	
L	40.900	41.300	1.610	1.626
L1	24.800	25.100	0.976	0.988
L2	20.300	20.600	0.799	0.811
e	7.100	7.300	0.280	0.287
e	5.450 TYP.		0.215 TYP.	
H	5.980 REF.		0.235 REF.	
h	0.000	0.300	0.000	0.012