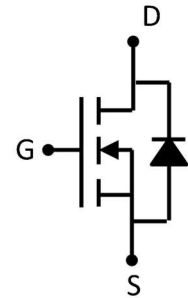


Feature

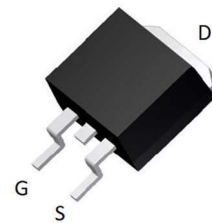
- 60V,80A
 $R_{DS(ON)} < 7.5m\Omega @ V_{GS}=10V$
- Advanced Trench Technology
- Lead free product is acquired
- Excellent $R_{DS(ON)}$ and Low Gate Charge



Schematic diagram

Application

- PWM applications
- Load Switch
- Power management



TO-263 top view

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity (PCS)
80N06DH	AP80N06DH	TO-263	-	-	800

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ($T_a=25^\circ\text{C}$)	I_D	80	A
Continuous Drain Current ($T_a=100^\circ\text{C}$)	I_D	56	A
Pulsed Drain Current ⁽¹⁾	I_{DM}	320	A
Single Pulsed Avalanche Energy ⁽²⁾	E_{AS}	110	mJ
Power Dissipation	P_D	108	W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	1.4	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	60	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 60V, V _{GS} = 0V	-	-	1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V	-	-	±100	nA
Gate threshold voltage ⁽³⁾	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2.0	3.0	4.0	V
Drain-source on-resistance ⁽³⁾	R _{DS(on)}	V _{GS} = 10V, I _D = 30A	-	6.1	7.5	mΩ
Forward tranconductance ⁽³⁾	g _{FS}	V _{DS} = 10V, I _D = 30A	20	-	-	S
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} = 30V, V _{GS} = 0V, f = 1MHz	-	4130	-	pF
Output Capacitance	C _{oss}		-	280	-	
Reverse Transfer Capacitance	C _{rss}		-	250	-	
Switching characteristics						
Turn-on delay time	t _{d(on)}	V _{DD} = 30V, I _D = 30A, R _L = 1Ω V _{GS} = 10V, R _G = 3Ω	-	9	-	ns
Turn-on rise time	t _r		-	7	-	
Turn-off delay time	t _{d(off)}		-	40	-	
Turn-off fall time	t _f		-	15	-	
Total Gate Charge	Q _g	V _{DS} = 30V, I _D = 30A, V _{GS} = 10V	-	90	-	nC
Gate-Source Charge	Q _{gs}		-	9	-	
Gate-Drain Charge	Q _{gd}		-	18	-	
Source-Drain Diode characteristics						
Diode Forward voltage ⁽³⁾	V _{DS}	V _{GS} = 0V, I _S = 30A	-	-	1.2	V
Diode Forward current ⁽⁴⁾	I _S		-	-	80	A
Body Diode Reverse Recovery Time	t _{rr}	T _J = 25° , I _F = 30A, di/dt = 100A/us		33		ns
Body Diode Reverse Recovery Charge	Q _{rr}	T _J = 25° , I _F = 30A, di/dt = 100A/us		46		nc

Notes:

1. Repetitive Rating: pulse width limited by maximum junction temperature
2. EAS Condition: T_J = 25°C, V_{DD} = 30V, R_G = 25 Ω, L = 0.5mH, I_{AS} = 21A
3. Pulse Test: pulse width ≤ 300μs, duty cycle ≤ 2%
4. Surface Mounted on FR4 Board, t ≤ 10 sec

Test Circuit

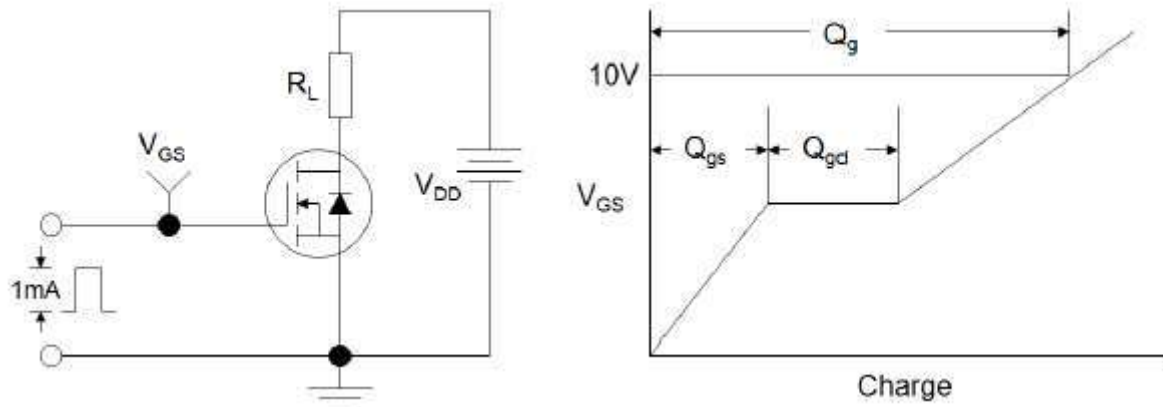


Figure1:Gate Charge Test Circuit & Waveform

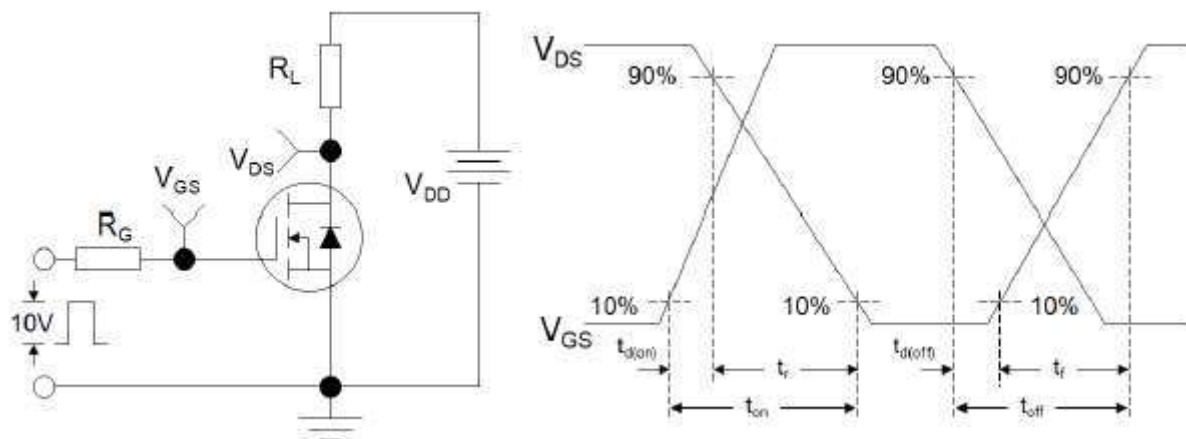


Figure 2: Resistive Switching Test Circuit & Waveforms

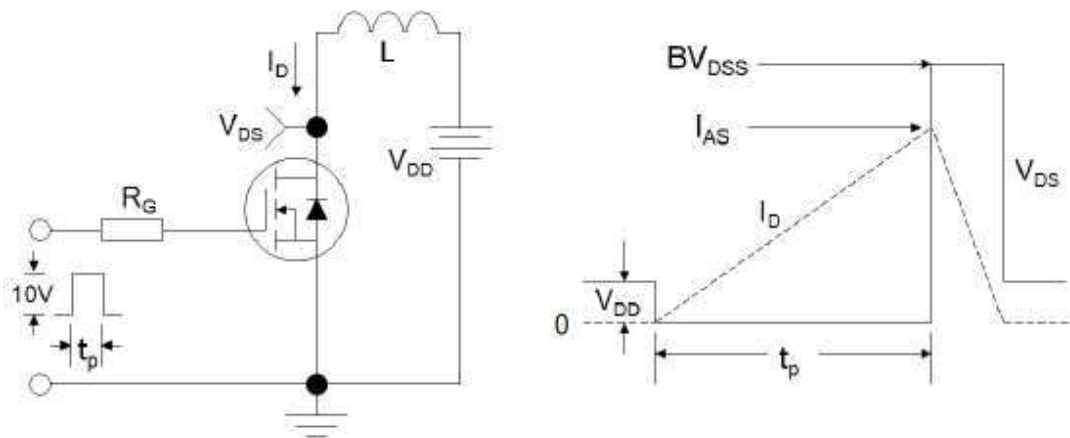


Figure 3:Unclamped Inductive Switching Test Circuit & Waveforms

Typical Performance Characteristics

Figure 1: Output Characteristics

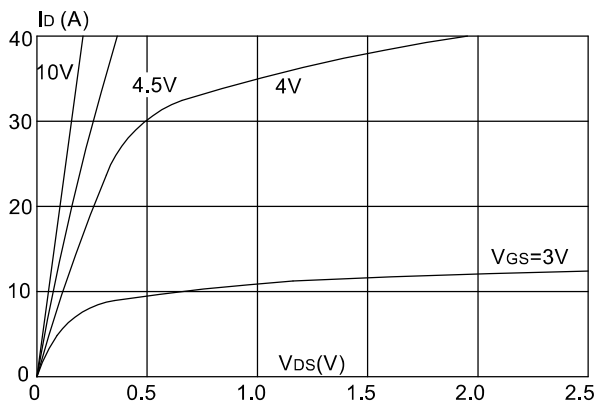


Figure 2: Typical Transfer Characteristics

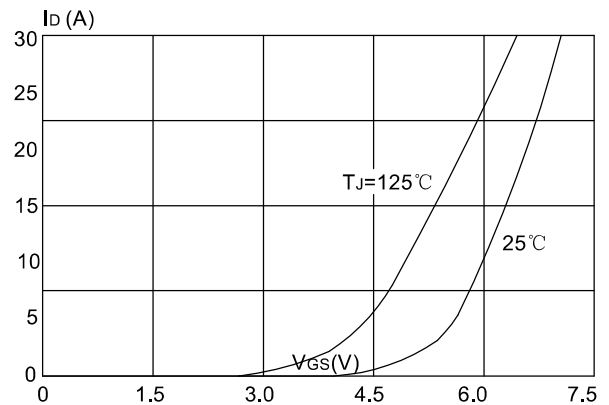


Figure 3: On-resistance vs. Drain Current

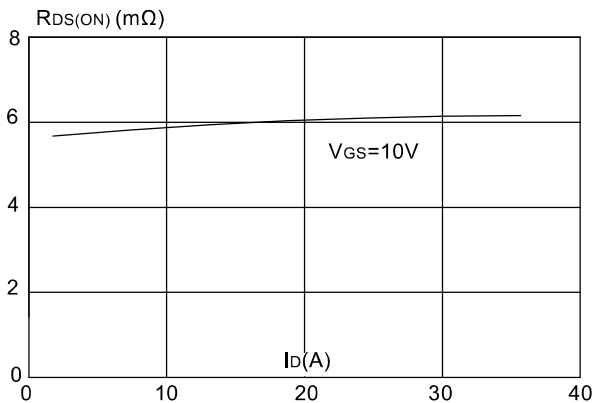


Figure 4: Body Diode Characteristics

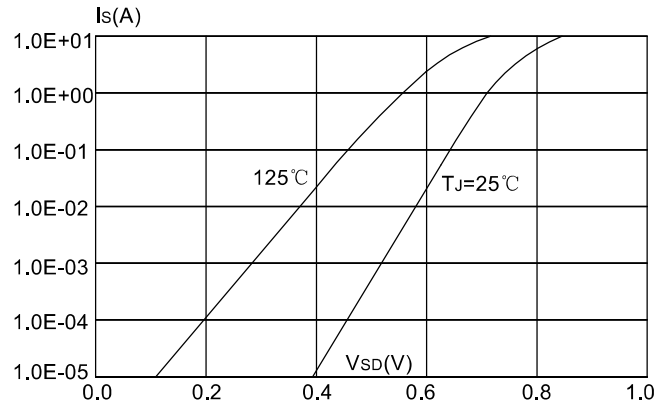


Figure 5: Gate Charge Characteristics

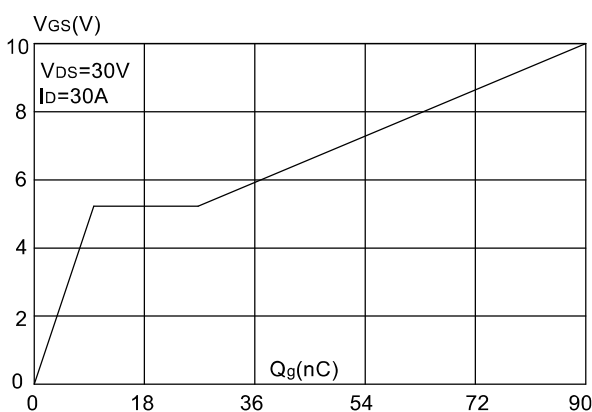
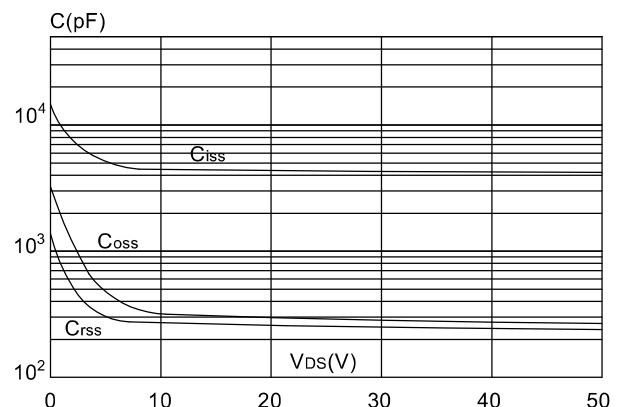


Figure 6: Capacitance Characteristics



AP80N06DH

N-Channel Enhancement Mosfet

Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

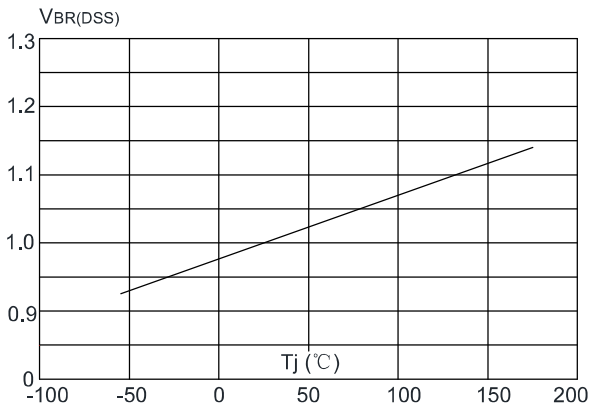


Figure 8: Normalized on Resistance vs. Junction Temperature

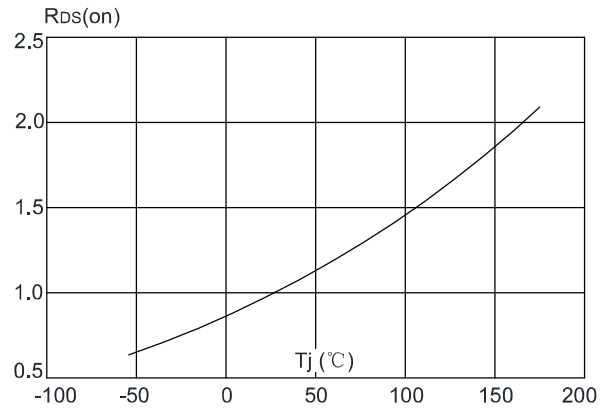


Figure 9: Maximum Safe Operating Area

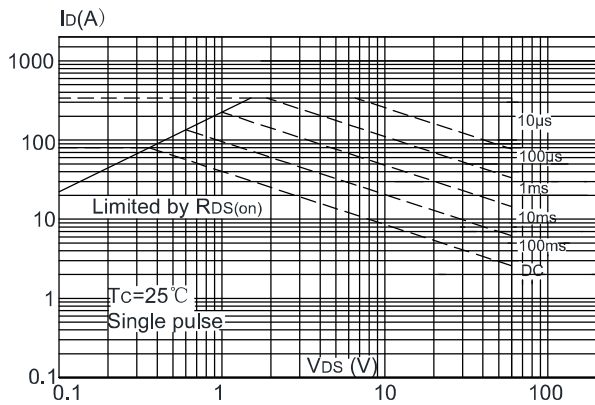


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

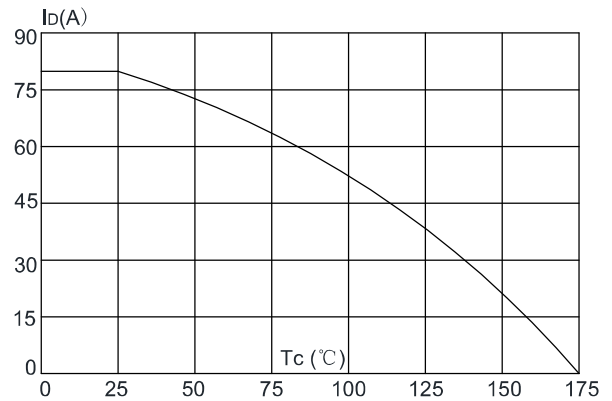
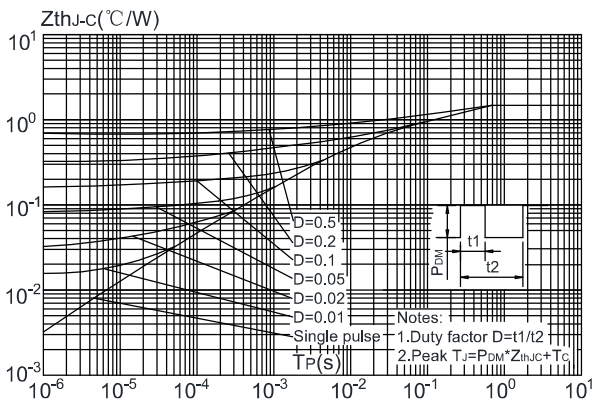
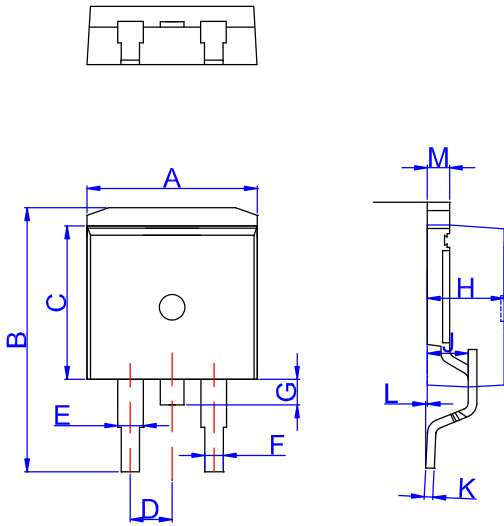


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case



TO-263 Package Information



TO-263

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.4		9.6	0.37		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [Quan Li](#) manufacturer:

Other Similar products are found below :

[IRFD120](#) [JANTX2N5237](#) [2SK2267\(Q\)](#) [BUK455-60A/B](#) [TK100A10N1,S4X\(S](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#)
[IRS2092STRPBF-EL](#) [IPS70R2K0CEAKMA1](#) [TK31J60W5,S1VQ\(O](#) [TK31J60W,S1VQ\(O](#) [TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#)
[DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [P85W28HP2F-7071](#) [DMN1053UCP4-7](#) [NTE2384](#) [DMC2700UDMQ-7](#) [DMN2080UCB4-7](#)
[DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [IPS60R3K4CEAKMA1](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [IPS60R360PFD7SAKMA1](#)
[DMN2990UFB-7B](#) [SSM3K35CT,L3F](#) [IPLK60R1K0PFD7ATMA1](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [IPWS65R035CFD7AXKSA1](#)
[MCQ7328-TP](#) [SSM3J143TU,LXHF](#) [DMN12M3UCA6-7](#) [PJMF280N65E1_T0_00201](#) [PJMF380N65E1_T0_00201](#)
[PJMF280N60E1_T0_00201](#) [PJMF600N65E1_T0_00201](#) [PJMF900N65E1_T0_00201](#)