TMG80N06NF

N-Channel Enhancement Mosfet

General Description

- Low $R_{DS(ON)}$
- RoHS and Halogen-Free Compliant

Applications

- Load switch
- PWM

General Features

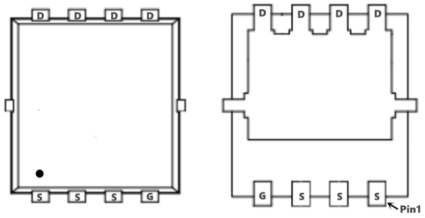
V_{DS} = 60V I $_D$ =80A

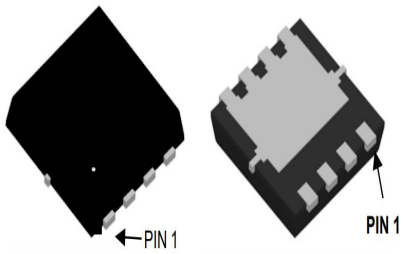
$R_{DS(ON)}$= 4.7mΩ(typ.)@V_{GS}=10V

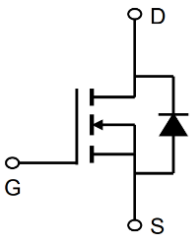
100% UIS Tested
100% R_g Tested

Green Product

NF:DFN5x6-8L







Marking: 80N06

Absolute Maximum Ratings: (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current-T_C=25℃[1]	80	A
	Pulsed Drain Current[2]	288	
E_{AS}	Single Pulse Avalanche Energy[4]	30	mJ
P_D	Power Dissipation	60	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	℃

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	2.1	℃/W
$R_{\theta JA}$	Thermal Resistance Junction to mbient	62	℃/W

Electrical Characteristics: (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	60	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=60V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1	---	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=10V,I_D=20A	---	4.7	6.3	mΩ
		V_{GS}=4.5V,I_D=10A	---	6.4	8.8	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=50V, V_{GS}=0V, f=1MHz	---	1122	---	pF
C_{oss}	Output Capacitance		---	139	---	
C_{rss}	Reverse Transfer Capacitance		---	3.8	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=50V , V_{GS}=10V , R_G=2Ω， I_D=10A	---	17.9	---	ns
t_r	Rise Time		---	4	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	34.9	---	ns
t_f	Fall Time		---	5.5	---	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=50V, I_D=10A	---	18.4	---	nC
Q_{gs}	Gate-Source Charge		---	3.3	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	2.8	---	nC
Drain-Source Diode Characteristics						
Symbol	**Parameter**	**Conditions**	**Min**	**Typ**	**Max**	**Units**
V_{SD}	Source-Drain Diode Forward Voltage[3]	V_{GS}=0V,I_S=20A	---	---	1.3	V
I_S	Diode forward current	V_{GS}<V_{th}	---	---	80	A
I_{SP}	Pulsed source current	V_{GS}<V_{th}	---	---	180	A
trr	Continuous Source Current	I_S=10 A, di/dt=100 A/μs	---	41.8	---	ns
qrr	Pulsed Source Current		---	36.1	---	nC

Notes:
1) Calculated continuous current based on maximum allowable junction temperature.
2) Repetitive rating; pulse width limited by max. junction temperature.
3) Pd is based on max. junction temperature, using junction-case thermal resistance.

Typical Characteristics

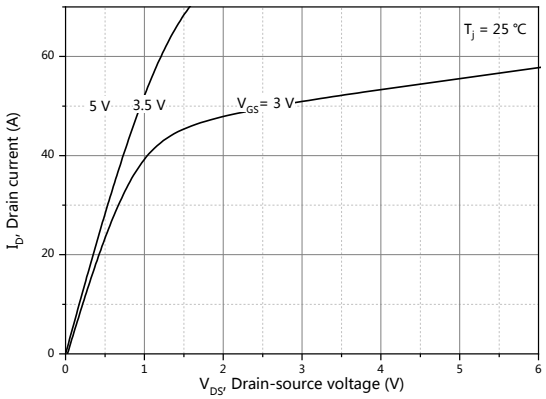


Figure 1, Typ. output characteristics

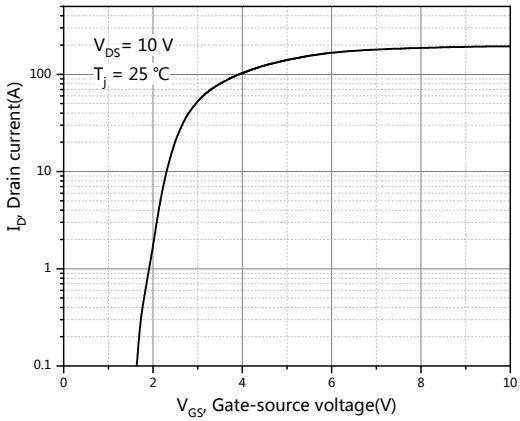


Figure 2, Typ. transfer characteristics

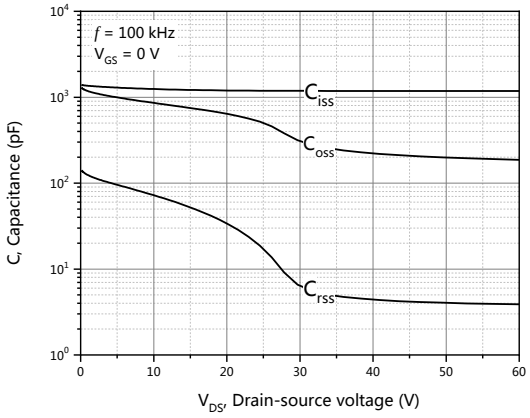


Figure 3, Typ. capacitances

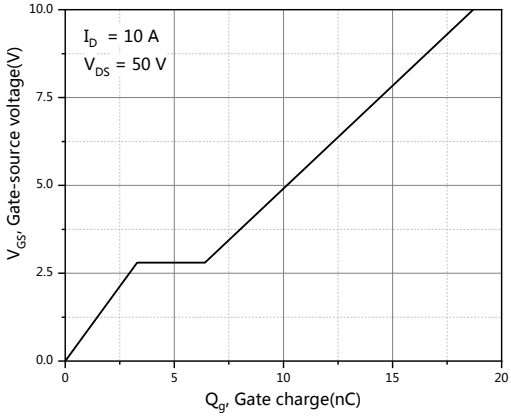


Figure 4, Typ. gate charge

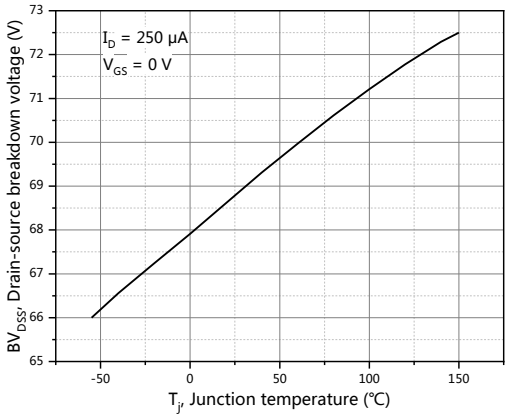


Figure 5, Drain-source breakdown voltage

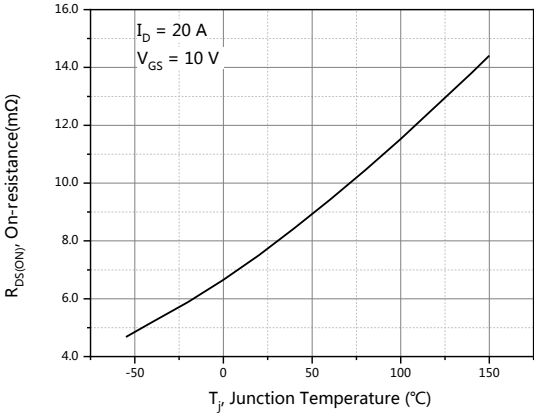


Figure 6, Drain-source on-state resistance

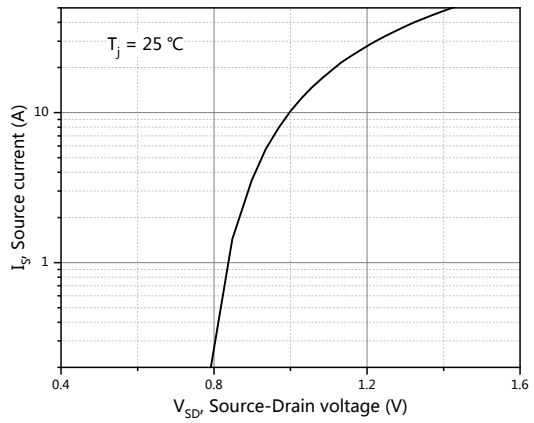


Figure 7, Forward characteristic of body diode

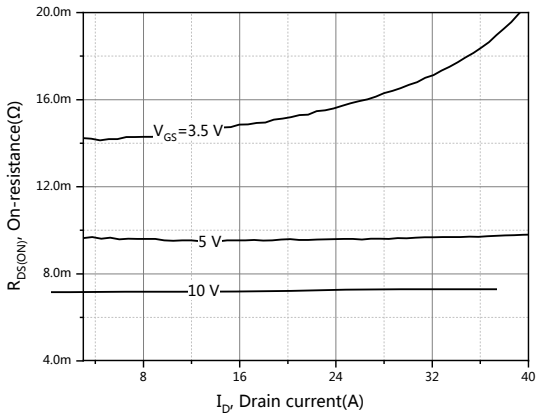
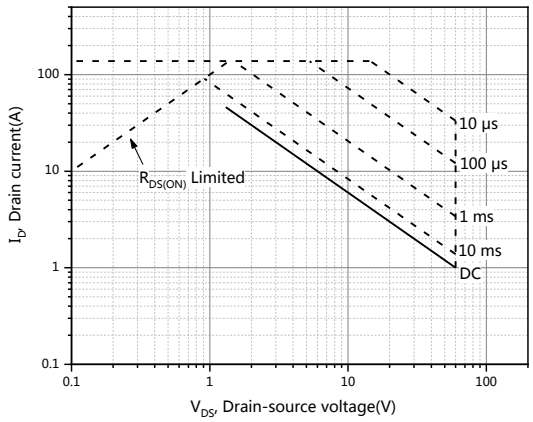
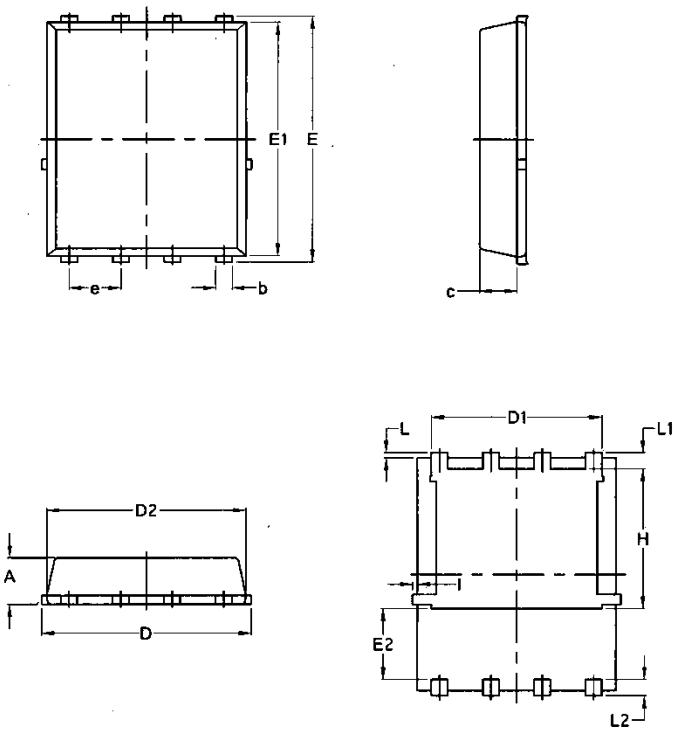


Figure 8, Drain-source on-state resistance



Package Mechanical Data:DFN5x6-8L



Symbol	Common			
	mm		Inch	
	Mim	Max	Min	Max
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.824	0.0970	0.0324	0.082
D	4.80	5.40	0.1890	0.2126
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.00	0.1890	0.1969
E	5.95	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	1.60	/	0.0630	/
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.50	0.0150	0.0197
H	3.30	3.50	0.1299	0.1378
I	/	0.18	/	0.0070