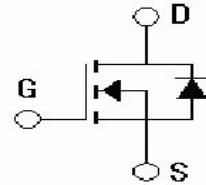
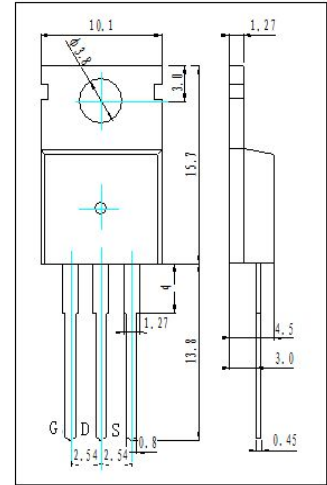


N沟道增强型功率场效应晶体管

1、概述与特点

DH7N80 是 N 沟道增强型 800V 高压功率 MOS 场效应晶体管。主要用途：AC-DC 开关电源、DC-DC 电源转换器、高压 H 桥 PWM 马达驱动等。其特点如下：

- 导通电阻低
- 低栅极电荷
- 开关速度快
- 低反向传输电容
- 100%单脉冲雪崩能量筛选测试
- 封装形式：TO-220C, 管脚排列：G、D、S
- 符合 RoHS 指令要求



2、电特性

2.1 极限值 (除非另有规定, Tc=25°C)

参数名称	符号	额定值	单位
最高漏极-源极直流电压	V_{DSS}	800	V
最高栅极-源极电压	V_{GSS}	±30	V
连续漏极电流	I_D (T=25°C) (T=100°C)	7.0	A
		4.2	A
单脉冲雪崩能量(注 1)	E_{AS}	300	mJ
二极管反向恢复最大电压变化速率(注 2)	dv/dt	5.0	V/ns
耗散功率	T _a =25°C	P_{tot}	2.0 W
	T _c =25°C	P_{tot}	120 W
最高结温	T _j	150	°C
贮存温度	T _{stg}	-55~150	°C
焊锡最高温度	T _L	300	°C

2.2 电参数 (除非另有规定, Tc=25°C)

参数名称	符号	测试条件	规范值			单位
			最小	典型	最大	
漏源击穿电压	BV_{DSS}	$I_D=250 \mu A, V_{GS}=0V$	800			V
零栅电压漏极电流	I_{DSS}	$V_{DS}=800V, V_{GS}=0V, T_C=25^\circ C$			25	μA
		$V_{DS}=640V, V_{GS}=0V, T_C=125^\circ C$			250	μA
栅源正向漏电流	I_{GSSF}	$V_{GS}=30V, V_{DS}=0V$			100	nA
栅源反向漏电流	I_{GSSR}	$V_{GS}=-30V, V_{DS}=0V$			-100	nA
栅门槛电压	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250 \mu A$	2.0	3.0	4.0	V
漏源导通电阻	$R_{DS(on)}$	$V_{GS}=10V, I_D=3.5A$			2.2	Ω
漏源二极管正向电压	V_{FSD}	$V_{GS}=0V, I_S=7.0A$			1.5	V
正向跨导	g_{FS}^a	$V_{DS}=15V, I_D=3.5A$		7.5		S
栅极总电荷	Qg	$I_D=7A, V_{DD}=400V, V_{GS}=10V$	--	34	--	nC
输入电容	C_{iss}	$V_{GS}=0V, V_{DS}=25V, f=1.0MHz$	--	1350	--	pF
输出电容	C_{oss}		--	115	--	
反向传输电容	C_{rss}		--	12	--	

a: 脉冲测试 $t_p \leq 300 \mu s, \delta \leq 2\%$

注释： 1、L=20mH, $I_D=5.5A, V_{DD}=50V, V_{GATE}=800V$, 起始结温 $T_j=25^\circ C$ 。

2、 $I_{SD}=7.0A, di/dt \leq 100A/\mu s, V_{DD} \leq BV_{DSS}$, 起始结温 $T_j=25^\circ C$ 。

3、特性曲线

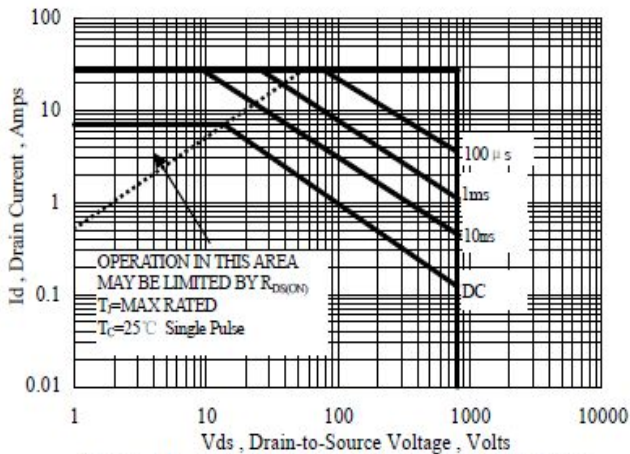


Figure 1 Maximum Forward Bias Safe Operating Area

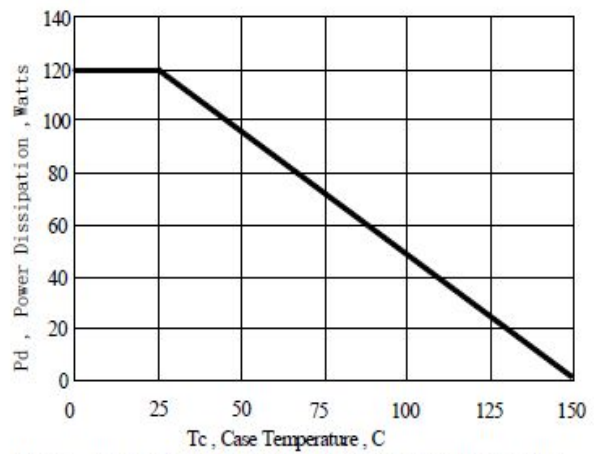


Figure 2 Maximum Power Dissipation vs Case Temperature

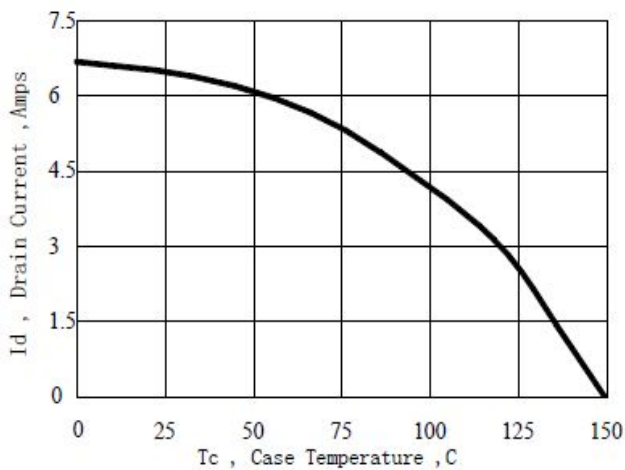


Figure 3 Maximum Continuous Drain Current vs Case Temperature

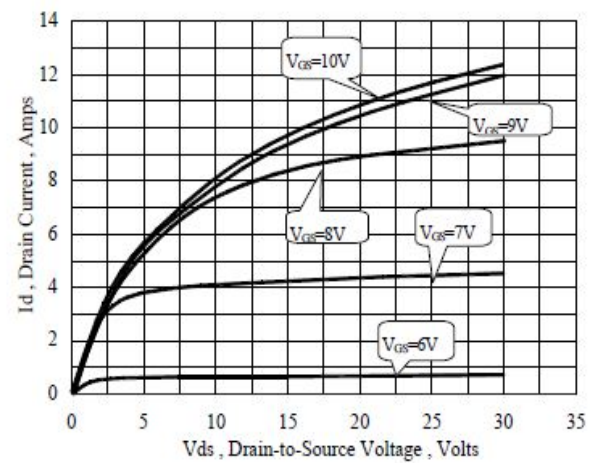


Figure 4 Typical Output Characteristics

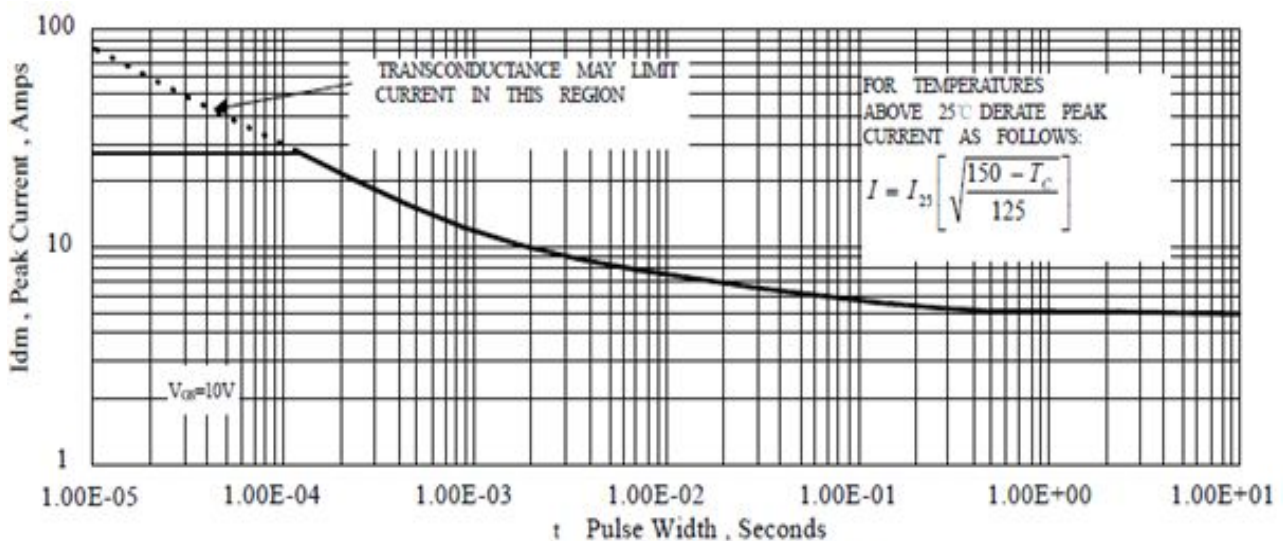


Figure 5 Maximum Peak Current Capability

3、特性曲线

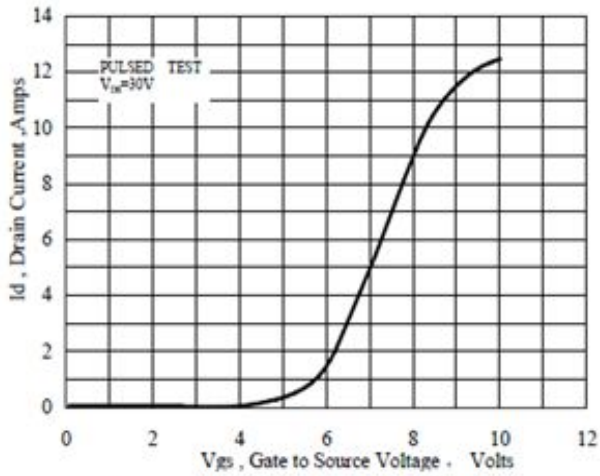


Figure 6 Typical Transfer Characteristics

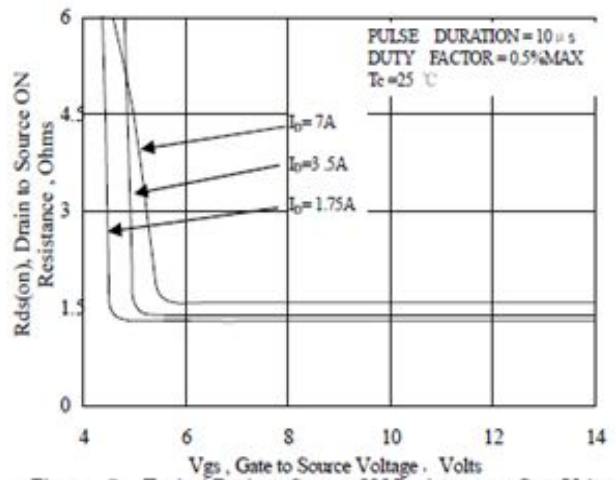


Figure 7 Typical Drain to Source ON Resistance vs Gate Voltage and Drain Current

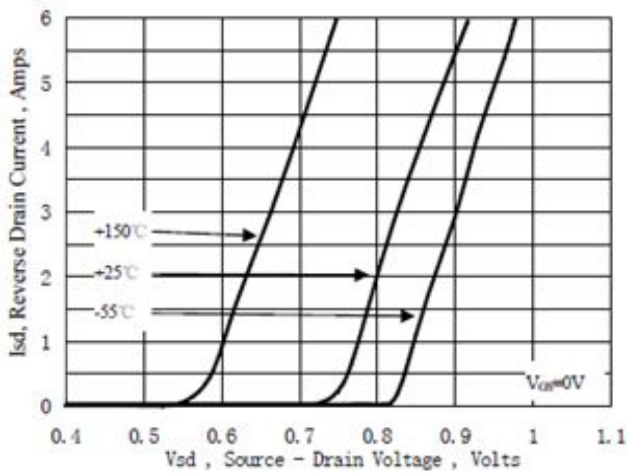


Figure 10 Typical Body Diode Transfer Characteristics

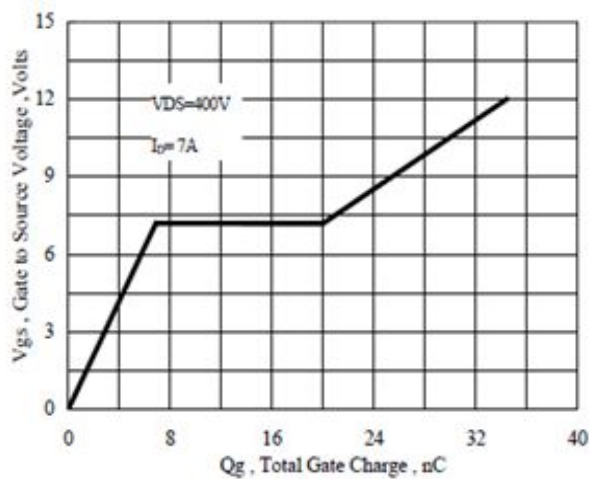


Figure 11 Typical Gate Charge vs Gate to Source Voltage

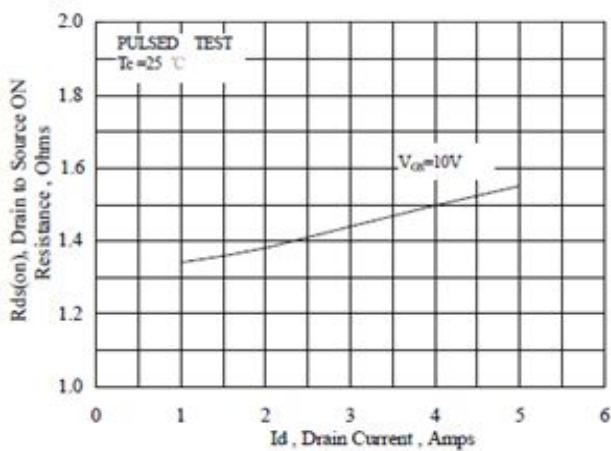


Figure 8 Typical Drain to Source ON Resistance vs Drain Current

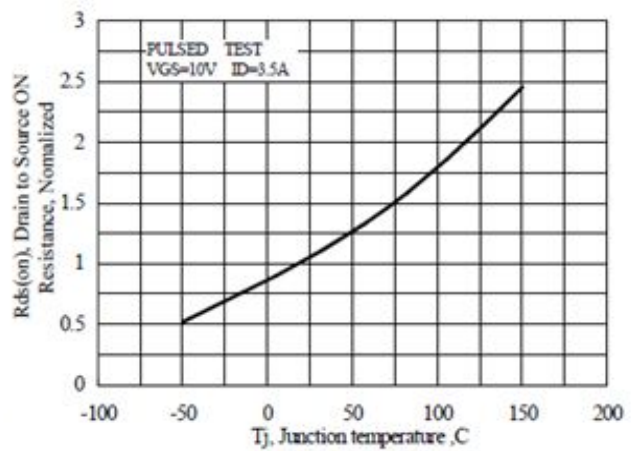
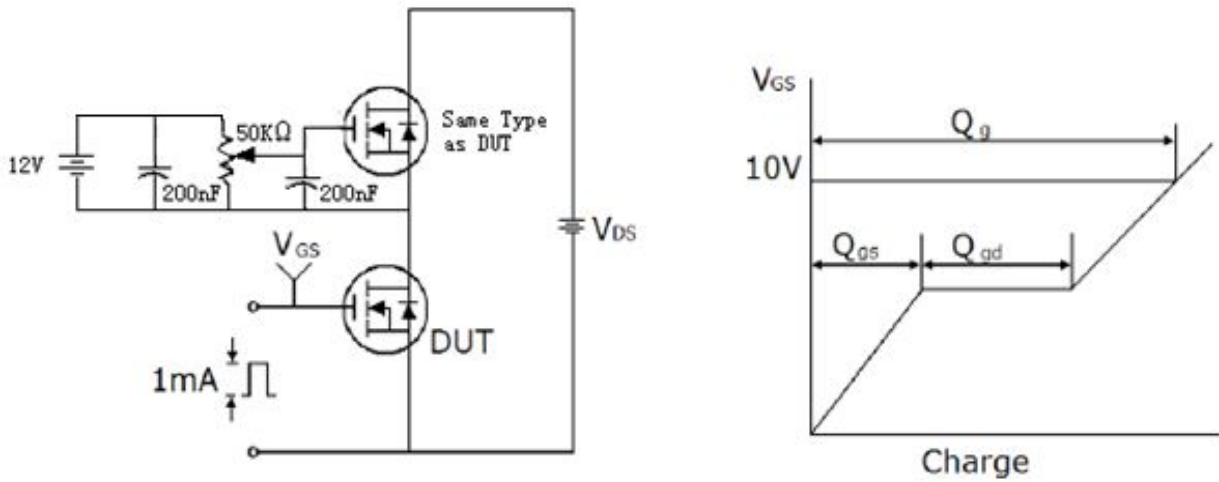
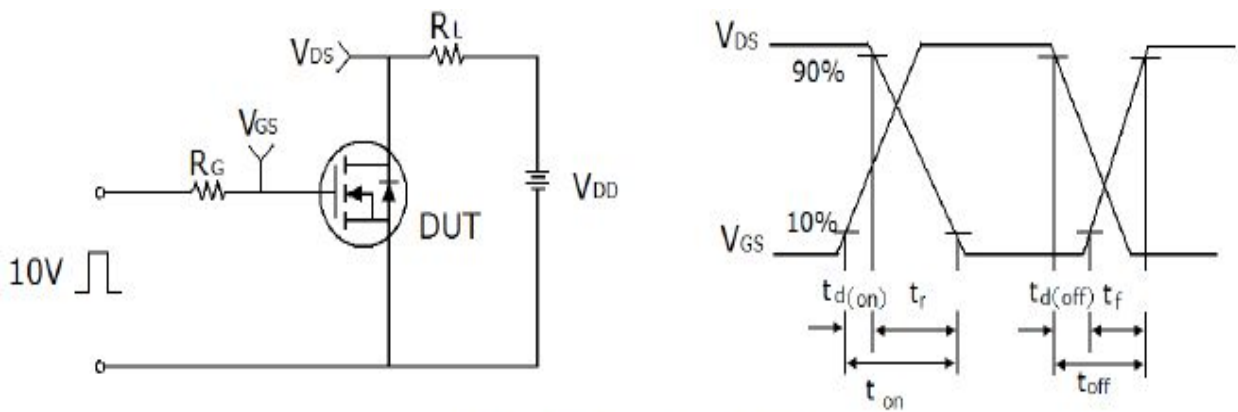


Figure 9 Typical Drain to Source ON Resistance vs Junction Temperature

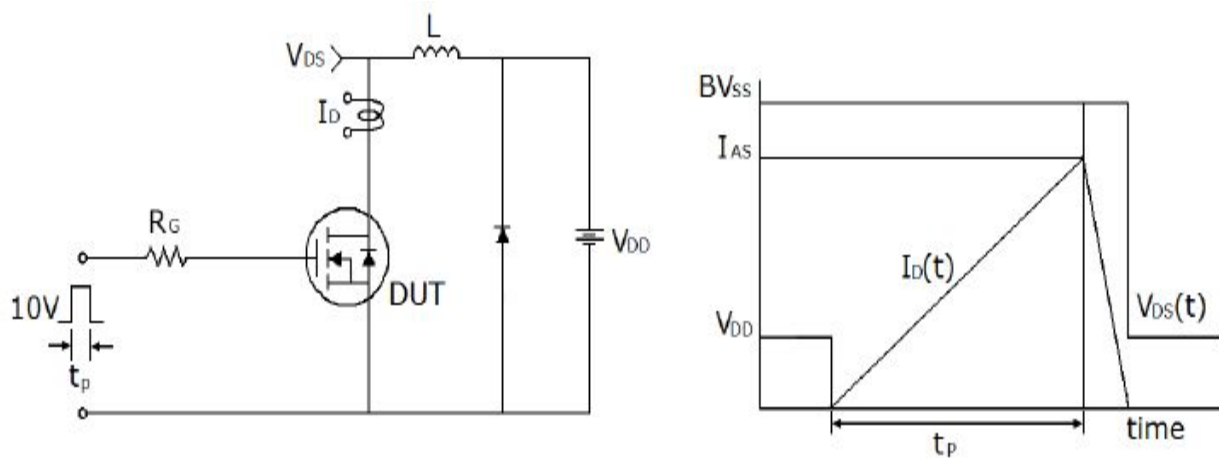
4、测试电路与波形图 (Test Circuit and Waveform)



1) Gate charge test circuit & Waveform

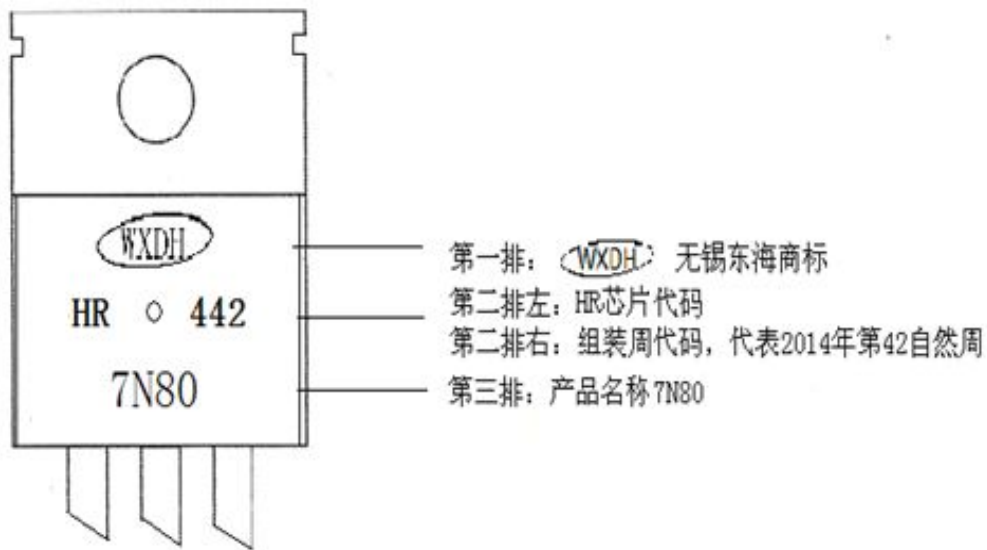


2) Switch Time Test Circuit:

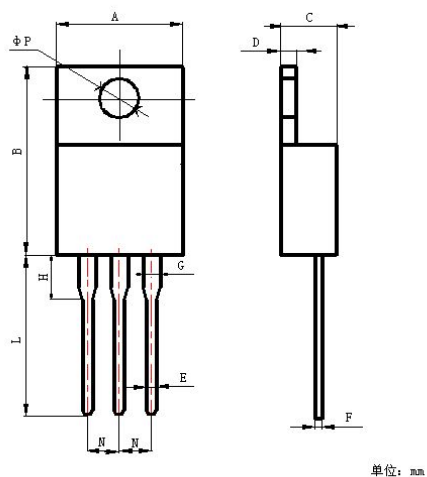


3) Unclamped Inductive Switching Test Circuit & Waveforms

5、产品印记



6、外形尺寸



项 目	规范(mm)	
	MIN	MAX
A	9.8	10.2
B	15.5	16.1
C	4.40	4.60
D	1.20	1.40
E	0.70	0.90
F	0.40	0.60
G	1.17	1.37
H	2.60	3.20
L	12.8	13.2
N	2.34	2.74
ϕP	3.50	3.80