

## 80A/30V 耐压 N 沟道增强型场效应管

### 产品概述

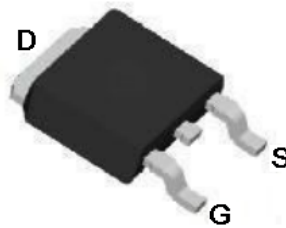
$V_{DSS}$	$I_D$	$R_{DS(ON)}(m\Omega)TYP$
30V	80A	5.5 @ $V_{GS}=10V, I_D=25A$

### 产品特点

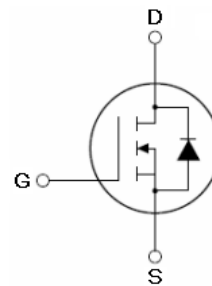
- 低导通电阻
- 高可靠性
- 驱动要求简单
- 采用 TO-252 封装

### 封装

- TO-252



To-252 Top View



Schematic Diagram

### 订购信息

产品型号	储存温度	封装形式	每卷数量
LN80N03	-55°C to +150°C	TO-252	2500

### 绝对最大额定值

TA=25°C (除非特别说明)

参数	符号	极限值	单位
最大漏源电压	$V_{DS}$	30	V
最大栅源电压	$V_{GS}$	$\pm 20$	V
结温 25°C 下, 最大漏极电流	$I_D$	80	A
结温 100°C 下, 最大漏极电流	$I_D$	50	A
最大漏极脉冲电流	$I_{DM}$	170	A
最大功耗 (Pc=25°C)	$P_D$	83	W
工作温度范围	$T_j$	-55—150	°C
单次脉冲雪崩击穿能量	EAS	306	mJ

**■ 电气特性**

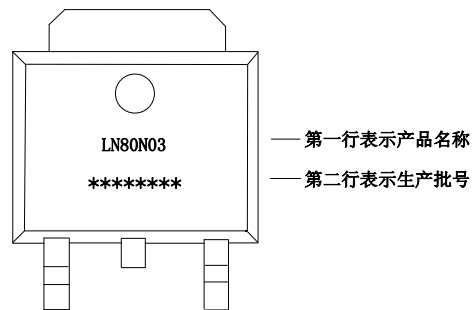
(TA=25°C unless otherwise noted)

参数	符号	条件	最小	典型	最大	单位
<b>关态特性</b>						
漏源击穿电压	BVDSS	VGS=0V, ID=250μA	30	-	-	V
零栅压漏电流	IDSS	VDS=30V, VGS=0V	-	-	1	μA
栅-衬漏电流	IGSS	VDS=0V, VGS=±20V			±100	nA
<b>开态特性</b>						
栅极阈值电压	VGS(th)	VDS=VGS, ID=250μA	1.0	1.6	3	V
漏源通态电阻	RDS(ON)	VGS=10V, ID=25A		5.5	6.5	mΩ
	RDS(ON)	VGS=4.55V, ID=20A		7.5	10	mΩ
正向跨导	gfs	VDS=5V, ID=24A	20			S
<b>动态参数</b>						
输入电容	Ciss	VDS=15V, VGS=0V f=1.0MHz		2330		pF
输出电容	Coss			460		
反向传输电容	Crss			230		
<b>开关特性</b>						
开通延迟时间	tD(ON)	VDD=10V, LD=30A VGS=10V, RGEN=2.7Ω		20		ns
上升时间	tr			15		
关断延迟时间	tD(OFF)			60		
下降时间	tf			10		
栅极总电荷	Qg	VDS=10V, ID=30A VGS=10V		51		nC
栅源电荷	Qgs			14		
栅漏电荷	Qgd			11		
<b>漏源二极管特征参数</b>						
二极管正向电压	VSD	VGS=0V, Is=24 A			1.2	V
二极管正向电流	Is				80	A
反向恢复时间	Trr	TJ=25°C, IF=80A di/dt=100A/us		32	50	nS
反向恢复电荷	Qrr			12	20	nC

**■ 温度特性**

热阻 结温-环境温度	Rth JA	1.8	°C/W
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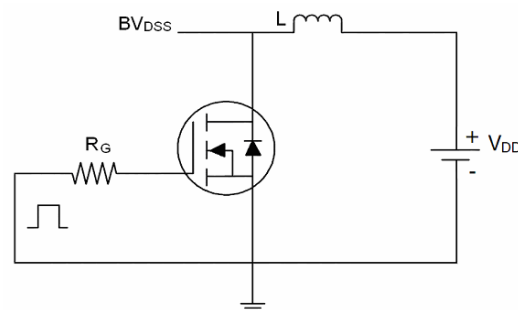
## ■ 打印标识



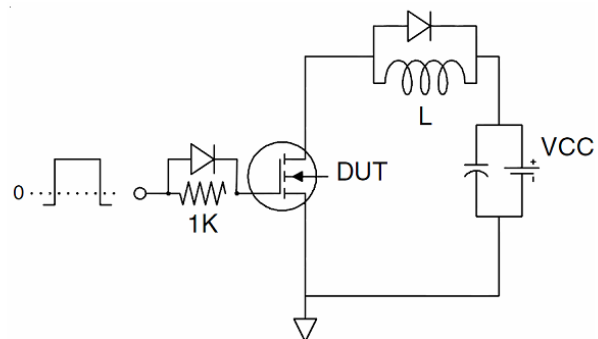
## ■ 测试电路与特性曲线

### ● 测试电路图

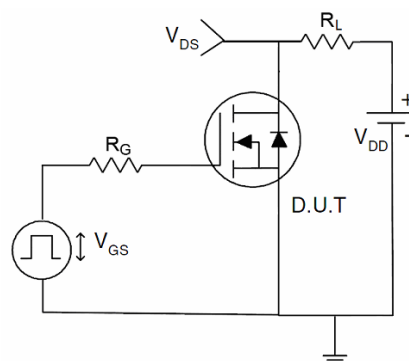
#### 1) EAS Test Circuit



#### 2) Gate Charge Test Circuit



#### 3) Switch Time Circuit



■ 特性曲线

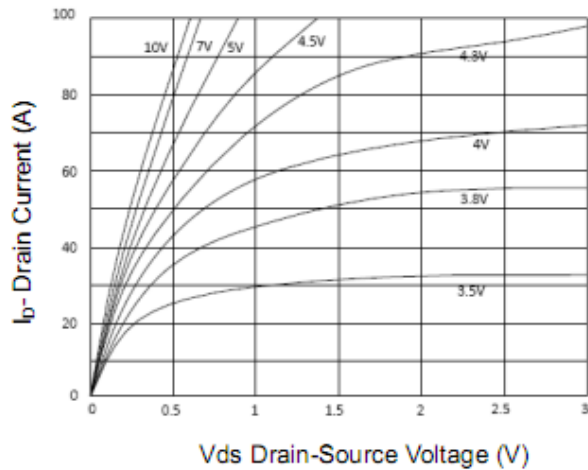


Figure 1 Output Characteristics

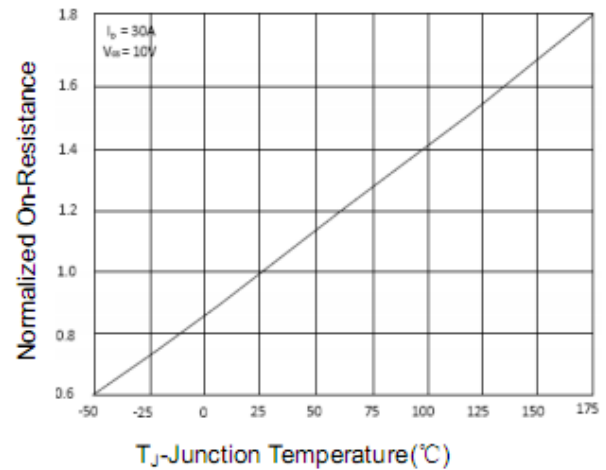


Figure 4 Rds(on)-Junction Temperature

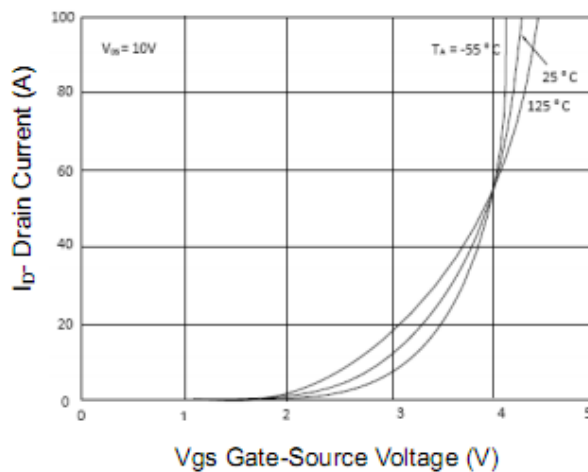


Figure 2 Transfer Characteristics

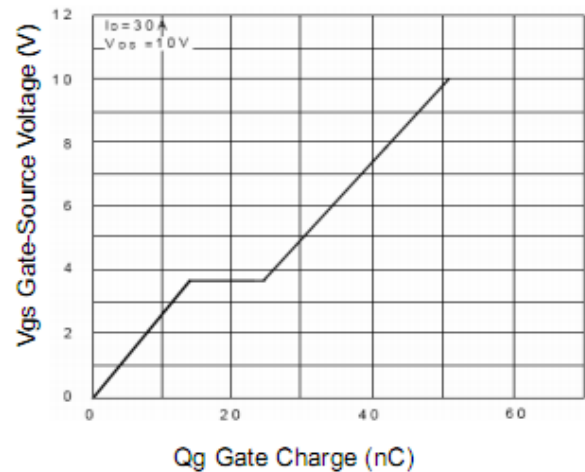


Figure 5 Gate Charge

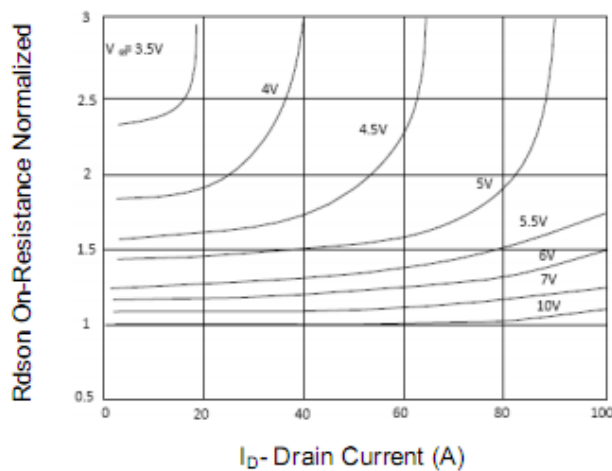


Figure 3 Rds(on)-Drain Current

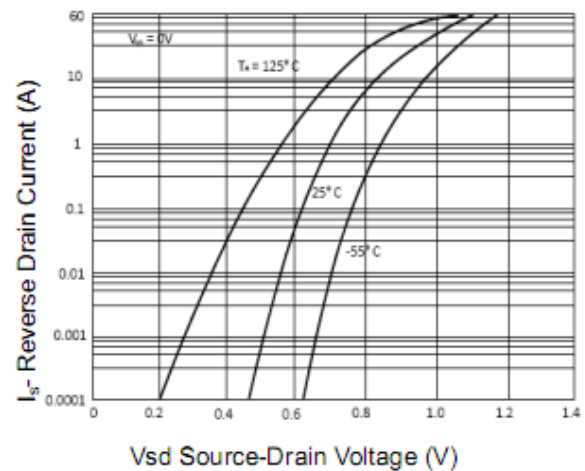
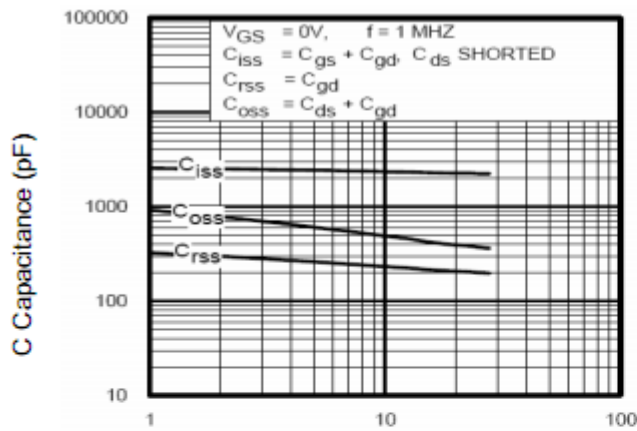
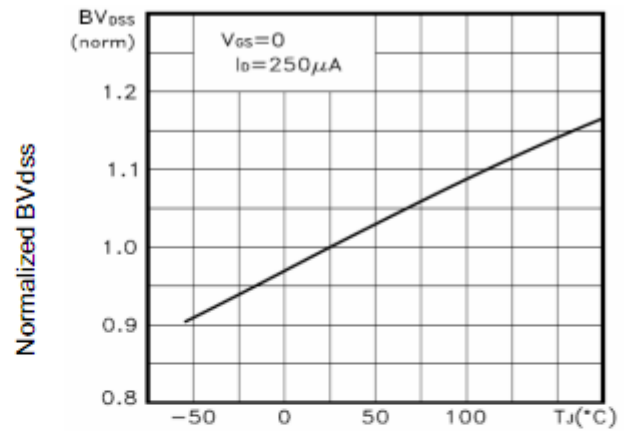


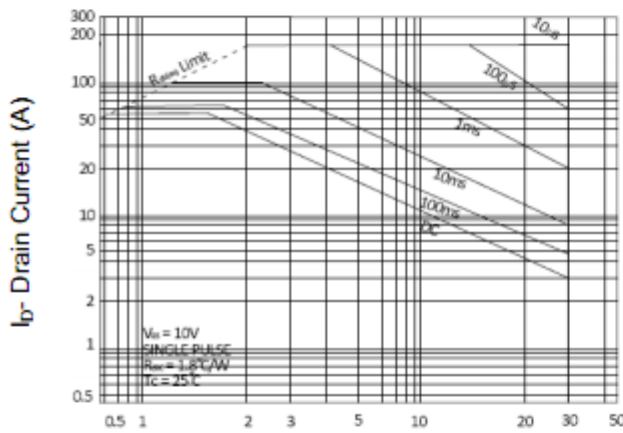
Figure 6 Source-Drain Diode Forward



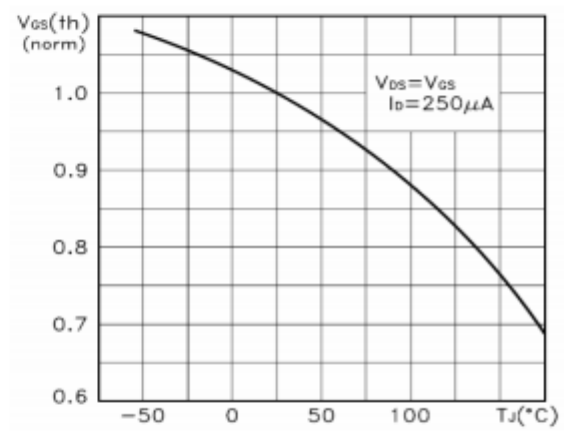
Vds Drain-Source Voltage (V)  
**Figure 7 Capacitance vs Vds**



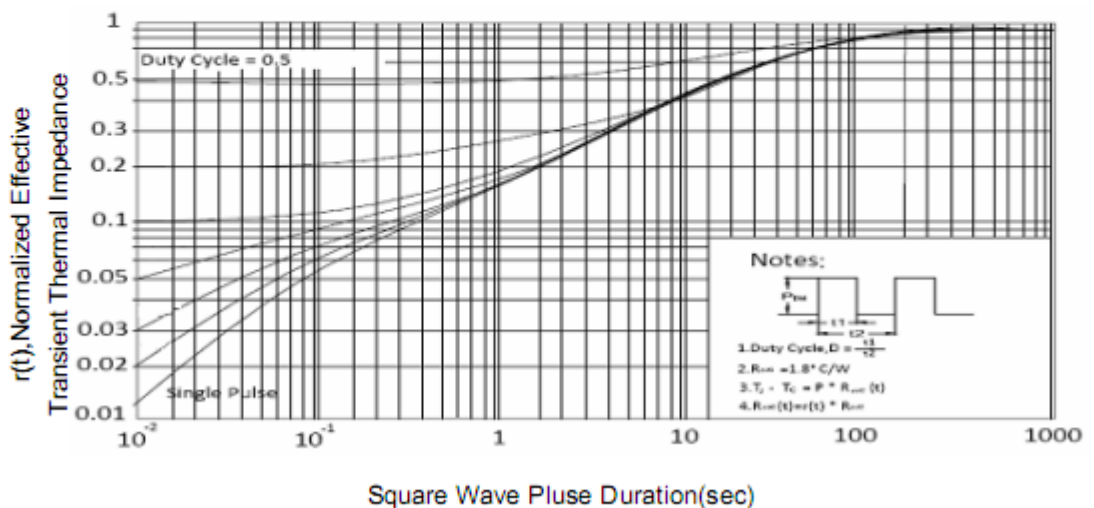
T<sub>J</sub>-Junction Temperature(°C)  
**Figure 9 BV<sub>DSS</sub> vs Junction Temperature**



Vds Drain-Source Voltage (V)  
**Figure 8 Safe Operation Area**



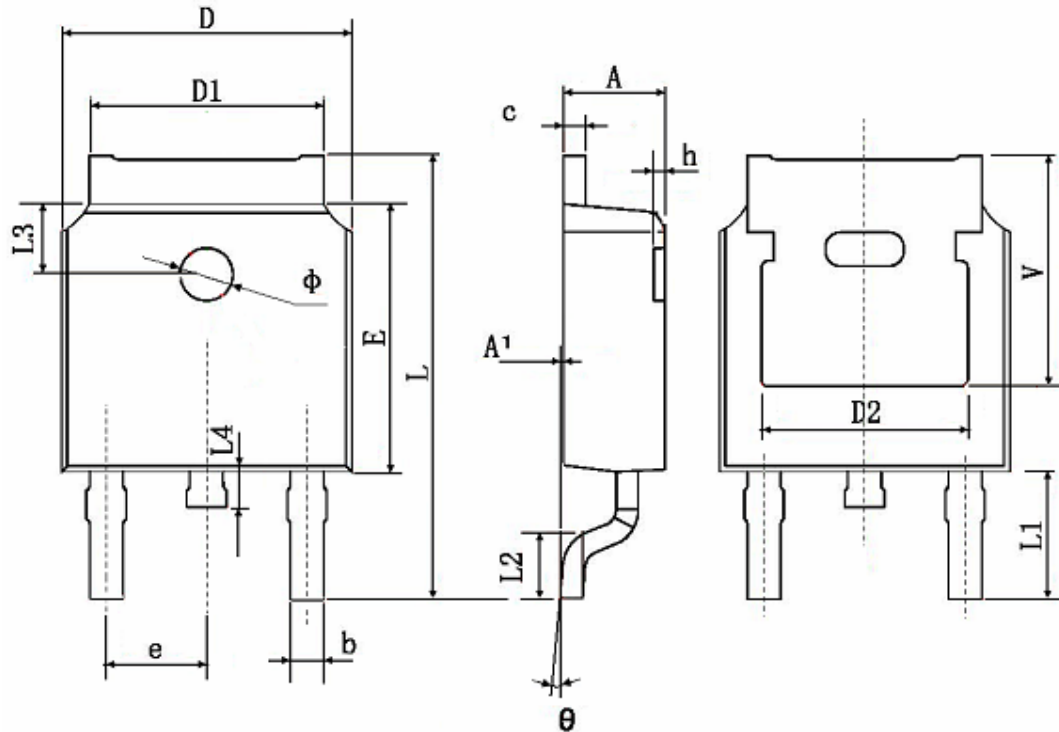
T<sub>J</sub>-Junction Temperature(°C)  
**Figure 10 V<sub>GS(th)</sub> vs Junction Temperature**



Square Wave Pluse Duration(sec)  
**Figure 11 Normalized Maximum Transient Thermal Impedance**

**■ 封装形式**

- TO-252



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 TYP.		0.211 TYP.	