

60A/40V 耐压 N 沟道增强型场效应管

产品概述

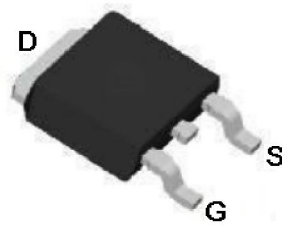
V_{DSS}	I_D	$R_{DS(ON)}(m\ \Omega)TYP$
40V	60A	7.3 @ $V_{GS}=10V, I_D=20A$

产品特点

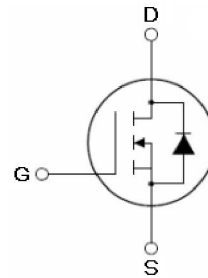
- | 低导通电阻
- | 高可靠性
- | 驱动要求简单
- | 采用 TO-252 封装

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
LN60N04	-55°C to +150°C	TO-252	2500

绝对最大额定值

TA=25 (除非特别说明)

参数	符号	极限值	单位
最大漏源电压	V_{DS}	40	V
最大栅源电压	V_{GS}	± 20	V
结温 25 下, 最大漏极电流	I_D	60	A
结温 100 下, 最大漏极电流	I_D	42	A
最大漏极脉冲电流	I_{DM}	200	A
最大功耗 (Pc=25)	P_D	65	W
工作温度范围	T_J	-55—150	
单次脉冲雪崩击穿能量	EAS	400	mJ

电气特性

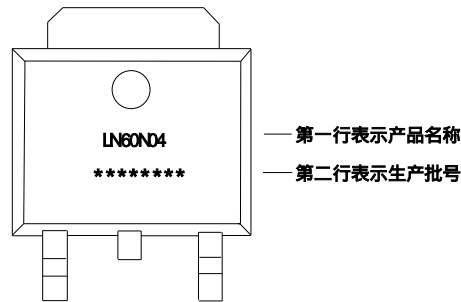
(TA=25 unless otherwise noted)

参数	符号	条件	最小	典型	最大	单位
关态特性						
漏源击穿电压	BVDSS	VGS=0V, ID=250μA	40	45		V
零栅压漏电流	IDSS	VDS=40V, VGS=0V			1	μA
栅 - 衬漏电流	IGSS	VDS=0V, VGS=±20V			±100	nA
开态特性						
栅极阈值电压	VGS(th)	VDS=VGS, ID=250μA	1.2	1.6	2.5	V
漏源通态电阻	RDS(ON)	VGS=4.5V, ID=3A		11.5		m
漏源通态电阻	RDS(ON)	VGS=10V, ID=3A		8		m
漏源通态电阻	RDS(ON)	VGS=10V, ID=20A		7.3	13	m
正向跨导	gfs	VGS=10V, ID=20A	15			S
动态参数						
输入电容	Ciss	VDS=20V, VGS=0V f=1.0MHz		1800		pF
输出电容	Coss			280		
反向传输电容	Crss			190		
开关特性						
开通延迟时间	tD(ON)	VDD=20V, ID=2A, RL=1 VGS=10V, RG=3		6.4		ns
上升时间	tr			17.2		
关断延迟时间	tD(OFF)			29.6		
下降时间	tf			16.8		
栅极总电荷	Qg	VDS=20V, ID=20A VGS=10V		29		nC
栅源电荷	Qgs			4.5		
栅漏电荷	Qgd			6.4		
漏源二极管特征参数						
二极管正向电压	VSD	VGS=0V, Is=10 A			1.2	V
二极管正向电流	Is				60	A
反向恢复时间	Trr	TJ=25 ,IF=20A di/dt=100A/us		29		nS
反向恢复电荷	Qrr			26		nC

温度特性

热阻 结温 - 环境温度	Rth JA	2.3	W
--------------	--------	-----	---

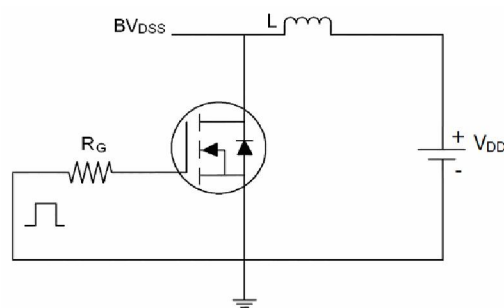
打印标识



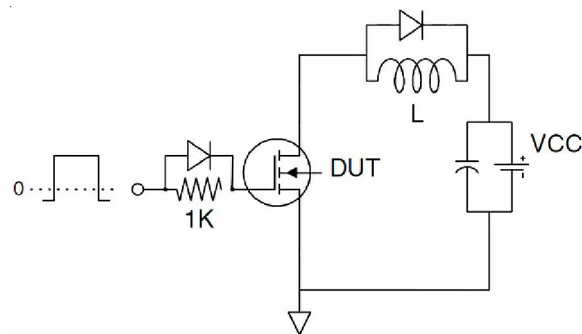
测试电路与特性曲线

I 测试电路图

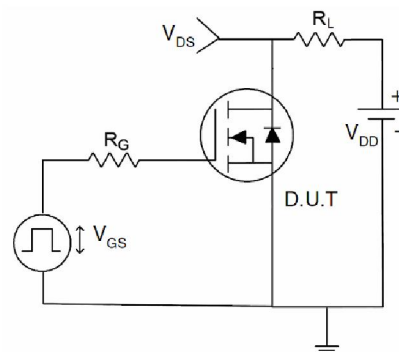
1) EAS Test Circuit



2) Gate Charge Test Circuit



3) Switch Time Circuit



I 特性曲线

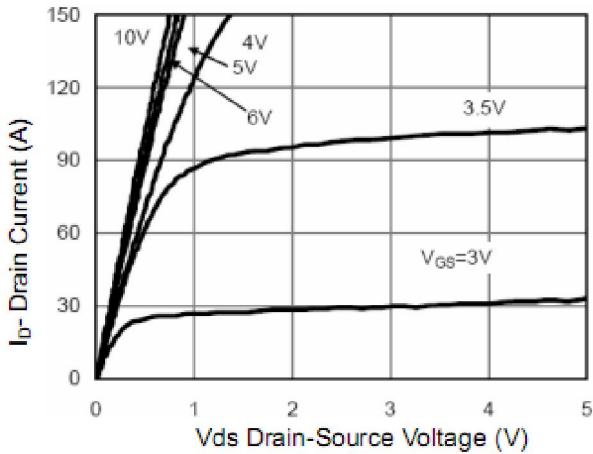


Figure 1 Output Characteristics

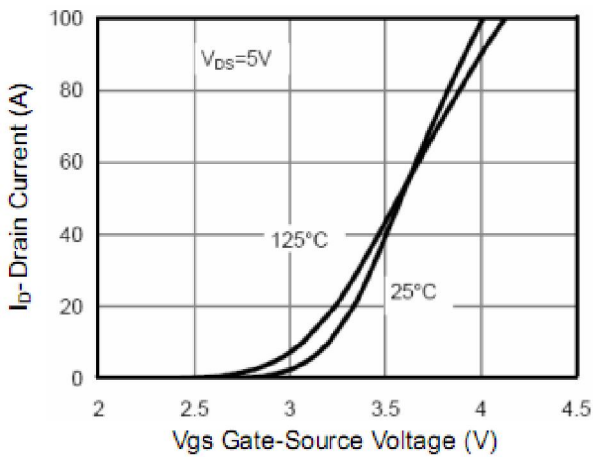


Figure 2 Transfer Characteristics

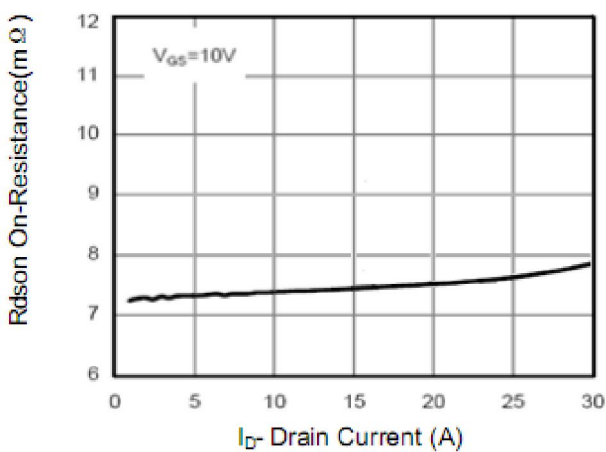


Figure 3 Rds(on)- Drain Current

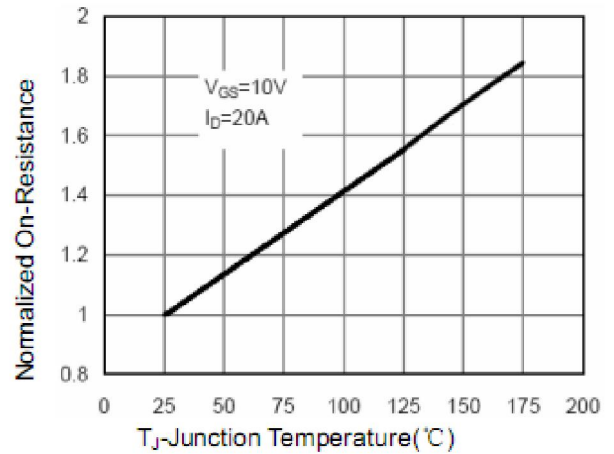


Figure 4 Rds(on)-Junction Temperature

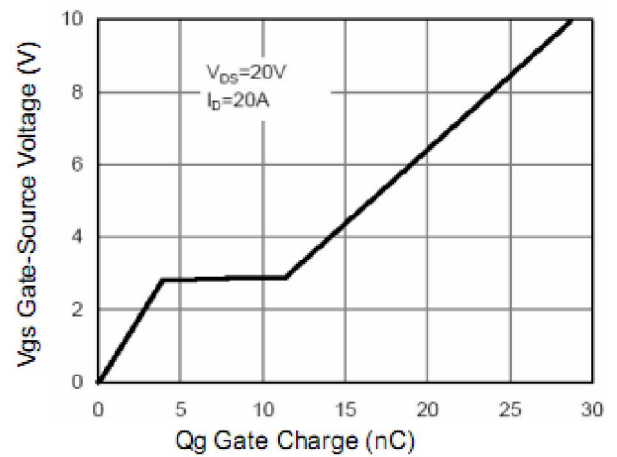


Figure 5 Gate Charge

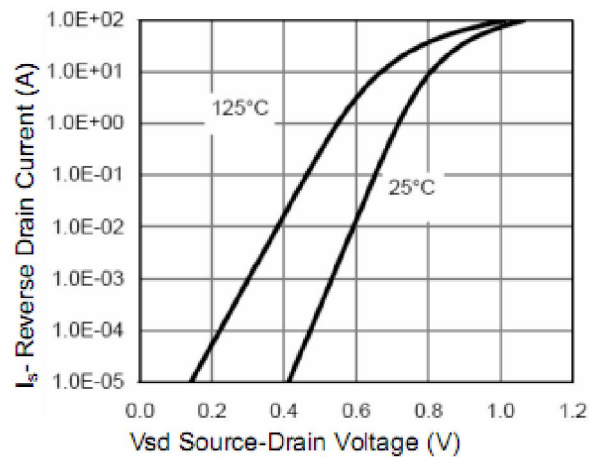


Figure 6 Source- Drain Diode Forward

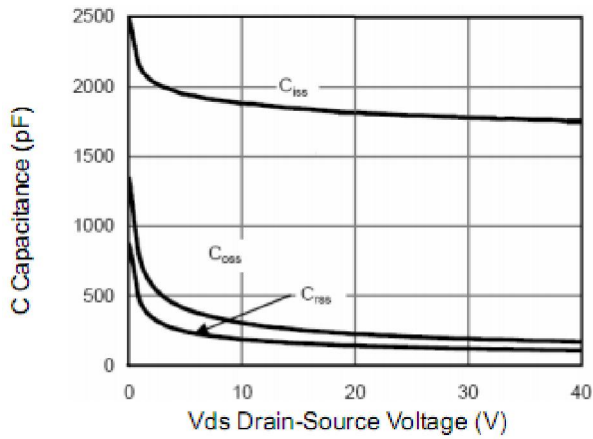


Figure 7 Capacitance vs Vds

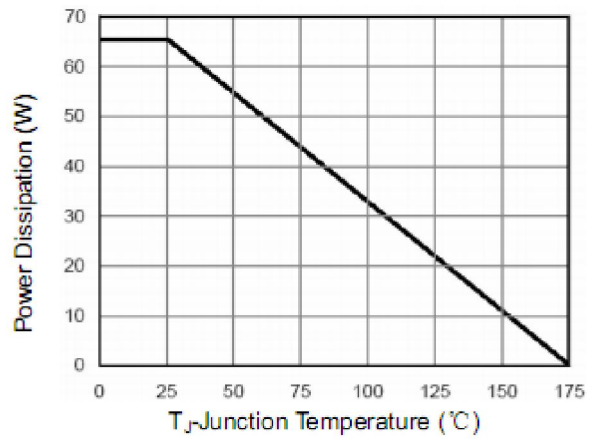


Figure 9 Power De-rating

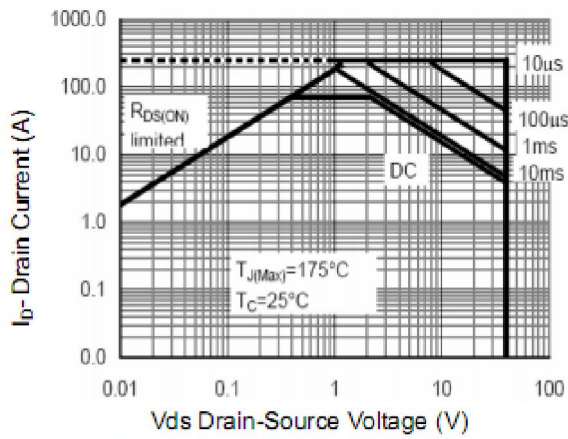


Figure 8 Safe Operation Area

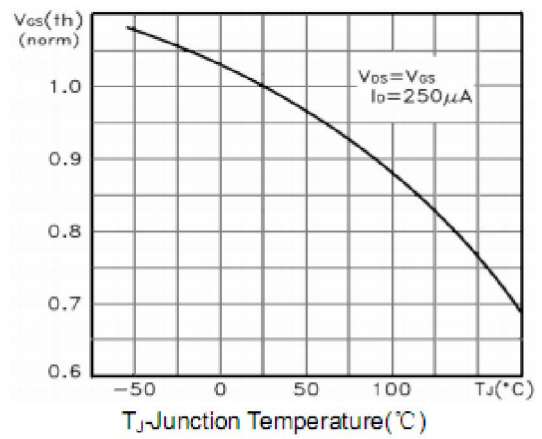


Figure 10 $V_{GS(th)}$ vs Junction Temperature

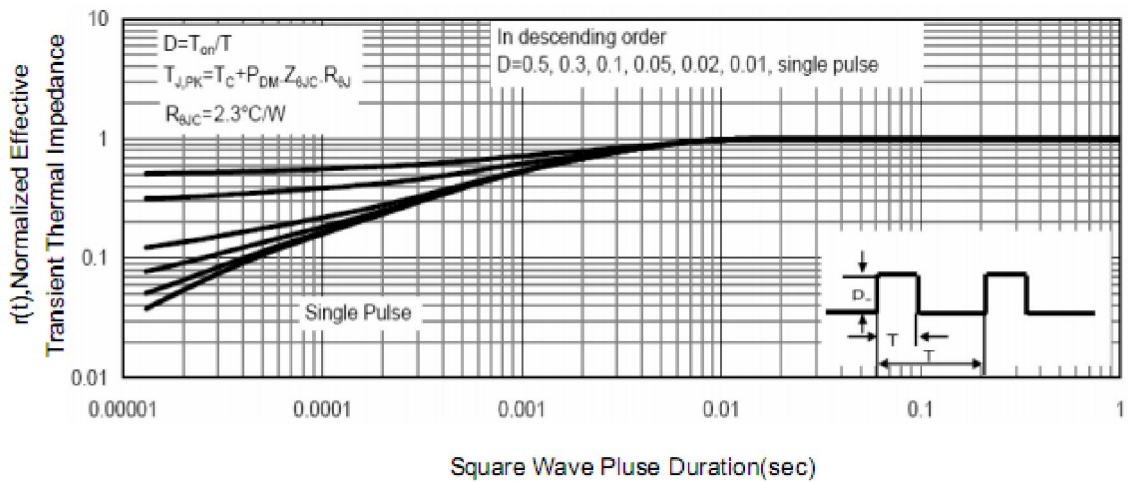


Figure 11 Normalized Maximum Transient Thermal Impedance

