



汕头华汕电子器件有限公司

N-Channel Enhancement Mode Field Effect Transistor

**HFP70N06**

对应国外型号

ME70N06

## ■ 主要用途

高速开关应用。DC/DC 转换器及 DC 马达控制等。

## ■ 极限值 ( $T_a=25^{\circ}\text{C}$ )

$T_{\text{stg}}$ ——贮存温度.....  $-55\sim 150^{\circ}\text{C}$

$T_j$ ——结温.....  $150^{\circ}\text{C}$

$V_{\text{DSS}}$ ——漏极—源极电压.....  $60\text{V}$

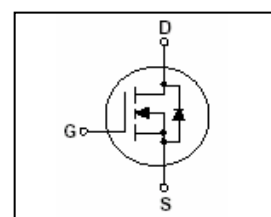
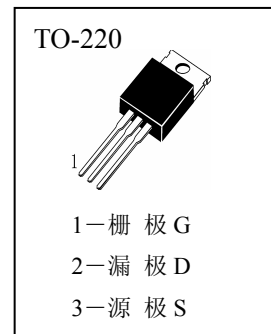
$V_{\text{GS}}$ ——栅极—源极电压.....  $\pm 20\text{V}$

$I_{\text{D}}$ ——漏极电流 ( $T_c=25^{\circ}\text{C}$ ) .....  $70\text{A}$

$I_{\text{DM}}$ ——漏极电流(脉冲) (注 1).....  $200\text{A}$

$P_{\text{D}}$ ——耗散功率 ( $T_c=25^{\circ}\text{C}$ ) .....  $75\text{W}$

## ■ 外形图及引脚排列



## ■ 电参数 ( $T_a=25^{\circ}\text{C}$ )

| 参数符号                 | 符 号 说 明      | 最小值 | 典型值  | 最大值       | 单 位                  | 测 试 条 件                                                                                                             |
|----------------------|--------------|-----|------|-----------|----------------------|---------------------------------------------------------------------------------------------------------------------|
| $BV_{\text{DSS}}$    | 漏—源极击穿电压     | 60  |      |           | V                    | $I_{\text{D}}=250\mu\text{A}, V_{\text{GS}}=0\text{V}$                                                              |
| $I_{\text{DSS}}$     | 零栅压漏极电流      |     |      | 1         | $\mu\text{A}$        | $V_{\text{DS}}=60\text{V}, V_{\text{GS}}=0$                                                                         |
| $I_{\text{GSS}}$     | 栅极泄漏电流       |     |      | $\pm 100$ | nA                   | $V_{\text{GS}}=\pm 20\text{V}, V_{\text{DS}}=0\text{V}$                                                             |
| $V_{\text{GS(th)}}$  | 栅—源极开启电压     | 2.0 |      | 4.0       | V                    | $V_{\text{DS}}=V_{\text{GS}}, I_{\text{D}}=250\mu\text{A}$                                                          |
| $R_{\text{DS(on)}}$  | 漏—源极导通电阻     |     |      | 13        | m $\Omega$           | $V_{\text{GS}}=10\text{V}, I_{\text{D}}=40\text{A}$ (注 2)                                                           |
| $C_{\text{iss}}$     | 输入电容         |     | 4560 |           | pF                   | $V_{\text{DS}}=25\text{V}, V_{\text{GS}}=0, f=1\text{MHz}$                                                          |
| $C_{\text{oss}}$     | 输出电容         |     | 430  |           | pF                   |                                                                                                                     |
| $C_{\text{rss}}$     | 反向传输电容       |     | 135  |           | pF                   |                                                                                                                     |
| $t_{\text{d(on)}}$   | 导通延迟时间       |     | 37   |           | nS                   | $V_{\text{DS}}=30\text{V}, V_{\text{GS}}=10\text{V}$<br>$R_{\text{L}}=15\Omega$<br>$R_{\text{G}}=10\Omega$<br>(注 2) |
| $t_{\text{r}}$       | 上升时间         |     | 20   |           | nS                   |                                                                                                                     |
| $t_{\text{d(off)}}$  | 断开延迟时间       |     | 140  |           | nS                   |                                                                                                                     |
| $t_{\text{f}}$       | 下降时间         |     | 30   |           | nS                   | $V_{\text{DS}}=48\text{V}$<br>$V_{\text{GS}}=10\text{V}$<br>$I_{\text{D}}=60\text{A}$ (注 2)                         |
| $Q_{\text{g}}$       | 栅极总电荷        |     | 85   |           | nC                   |                                                                                                                     |
| $Q_{\text{gs}}$      | 栅极—源极电荷      |     | 28   |           | nC                   |                                                                                                                     |
| $Q_{\text{gd}}$      | 栅极—漏极电荷      |     | 25   |           | nC                   | $f=1\text{MHz}$                                                                                                     |
| $R_{\text{g}}$       | 栅极阻抗         |     | 2.4  |           | $\Omega$             |                                                                                                                     |
| $V_{\text{SD}}$      | 源极—漏极二极管导通电压 |     |      | 1.3       | V                    |                                                                                                                     |
| $R_{\text{th(j-c)}}$ | 热阻           |     |      | 5         | $^{\circ}\text{C/W}$ | 结到外壳                                                                                                                |

\*注 1: 漏极电流受最大结温限制。

\*注 2: 脉冲测试, 宽度 $\leq 300\mu\text{S}$ , 占空比 $\leq 2\%$



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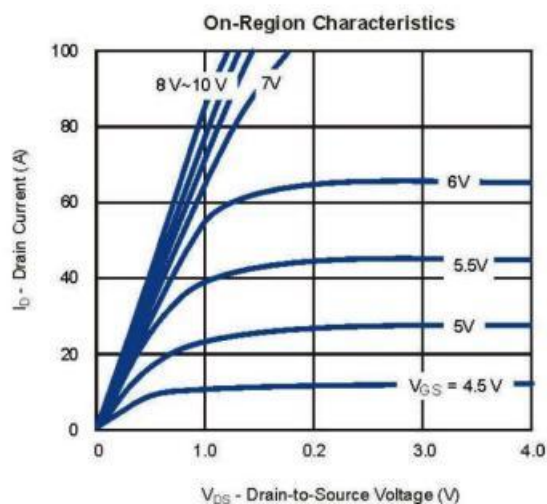
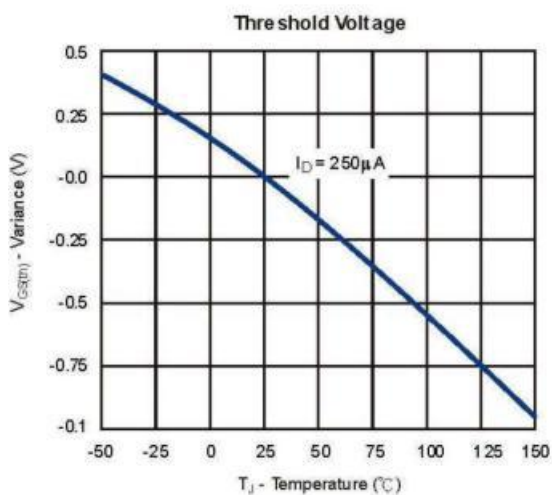
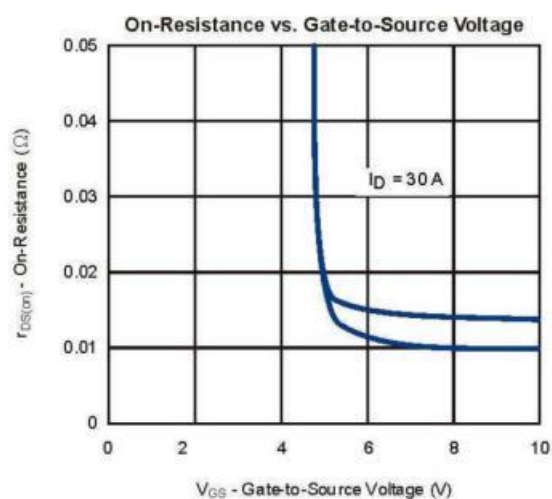
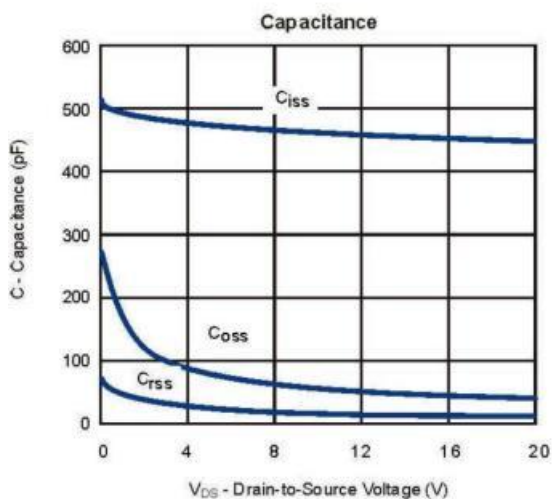
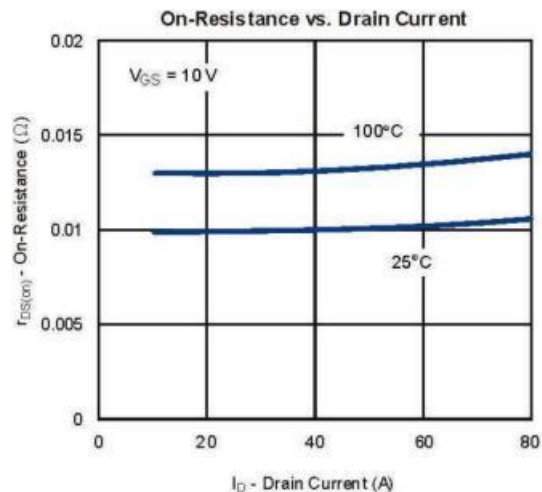
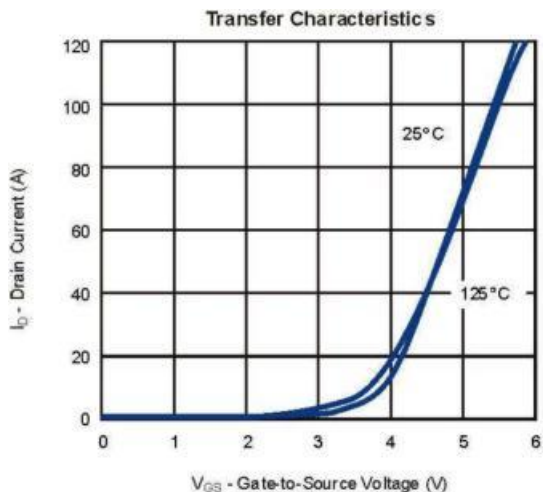
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## 特性曲线





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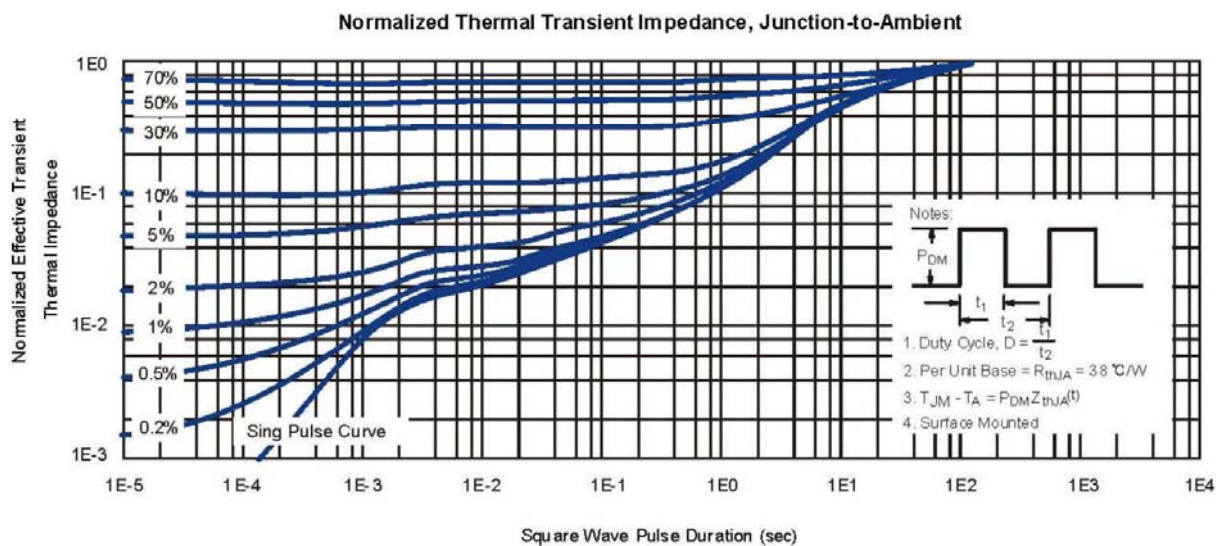
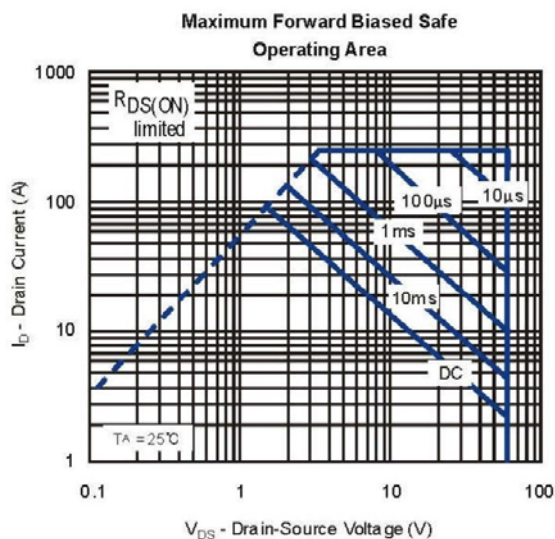
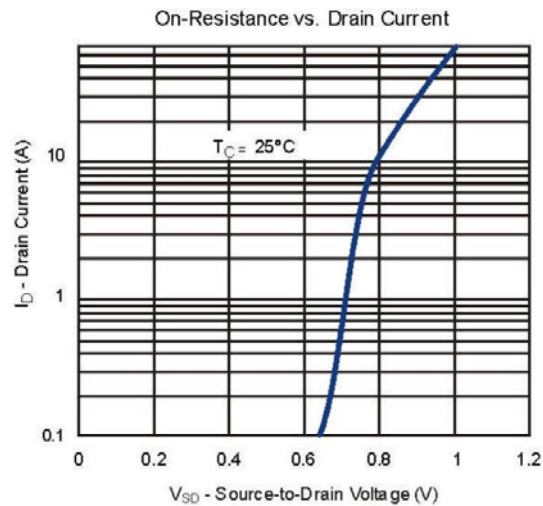
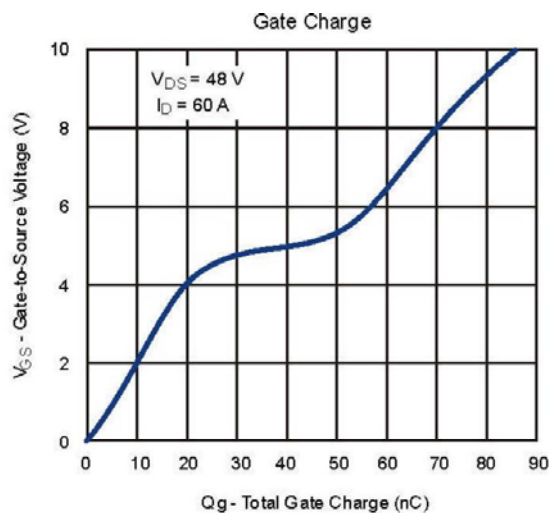
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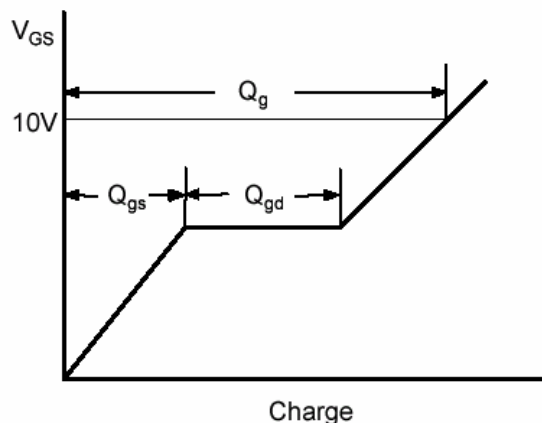
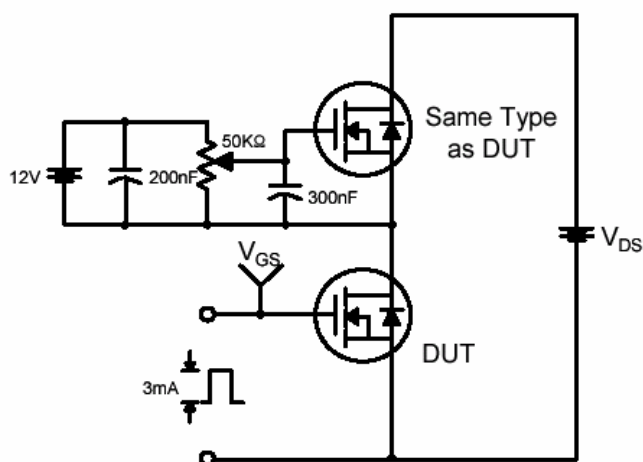
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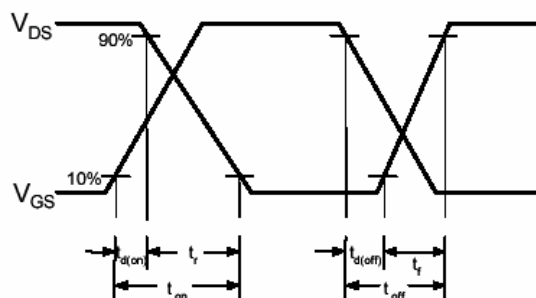
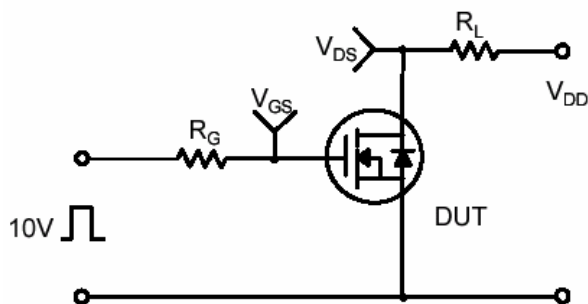
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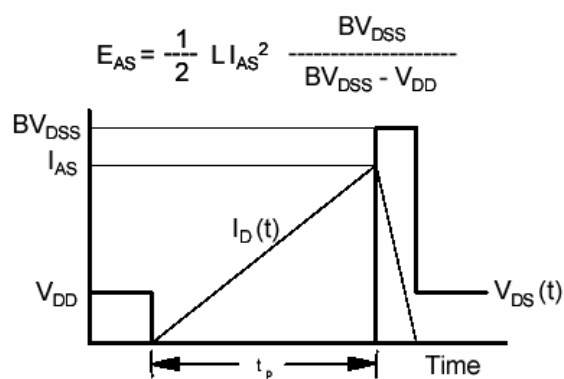
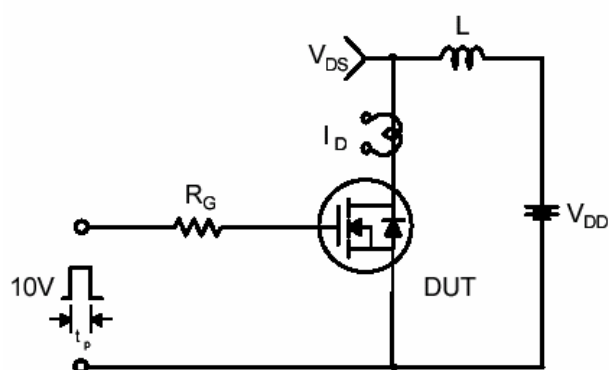
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching Test Circuit & Waveforms





## ■ 特性曲线

Peak Diode Recovery dv/dt Test Circuit & Waveforms

