汕头华汕电子器件有限公司

N-Channel Enhancement Mode Field Effect Transistor

HFU70N03V

对应国外型号
ME70N03

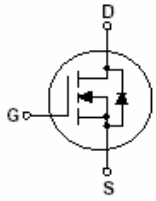
■ 主要用途

高速开关应用。DC/DC 转换器、电源管理等。

■ 外形图及引脚排列

TO-251

1－栅 极 G
2－漏 极 D
3－源 极 S



■ 极限值（T_a=25℃）

T_{stg}——贮存温度…… -55~150℃

T_j——结温…… 150℃

V_{DSS}——漏极—源极电压……30V

V_{GS}——栅极—源极电压…… ±20V

I_D——漏极电流（T_c=25℃）……50A

I_{DM}——漏极电流（脉冲）（注 1）……100A

P_D——耗散功率（T_c=25℃）……40W

■ 电参数（T_a=25℃）

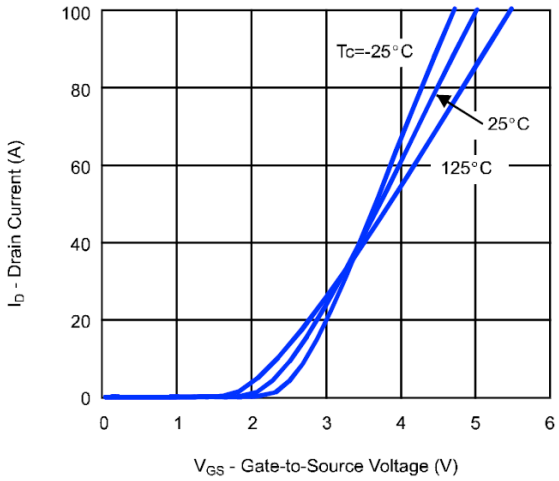
参数符号	符 号 说 明	最小值	典型值	最大值	单 位	测 试 条 件
BV_{DSS}	漏—源极击穿电压	30			V	I_D=250μA ,V_{GS}=0V
I_{DSS}	零栅压漏极电流			1	μA	V_{DS} =30V， V_{GS}=0
I_{GSS}	栅极泄漏电流			±100	nA	V_{GS}=±20V , V_{DS} =0V
$V_{GS(th)}$	栅—源极开启电压	1.0		3.0	V	V_{DS} = V_{GS} , I_D =250μA
$R_{DS(on)}$	漏—源极导通电阻		5.5	6.6	mΩ	V_{GS}=10V, I_D =30A
$R_{DS(on)}$	漏—源极导通电阻		8.5	11	mΩ	V_{GS}=4.5V, I_D =15A
Ciss	输入电容		1640		pF	V_{DS}=15V, V_{GS}=0,f=1MHz
Coss	输出电容		260		pF	
Crss	反向传输电容		84		pF	
$t_{d(on)}$	导通延迟时间		19		nS	V_{DS} =15V,V_{GS}=10V R_L =15Ω R_G= 3Ω （注 2）
tr	上升时间		15		nS	
$t_{d(off)}$	断开延迟时间		54		nS	
t_f	下降时间		6.5		nS	
Qg	栅极总电荷		8.7		nC	V_{DS} =15V V_{GS}=4.5V I_D=25A （注 2）
Qgs	栅极—源极电荷		4.4		nC	
Qgd	栅极—漏极电荷		3.6		nC	
Rg	栅极阻抗		0.9		Ω	f=1MHz
V_{SD}	源极—漏极二极管导通电压		0.85	1.2	V	I_S =20A , V_{GS}=0
Rth（j-c）	热阻			20	℃/W	结到外壳

*注 1：漏极电流受最大结温限制。

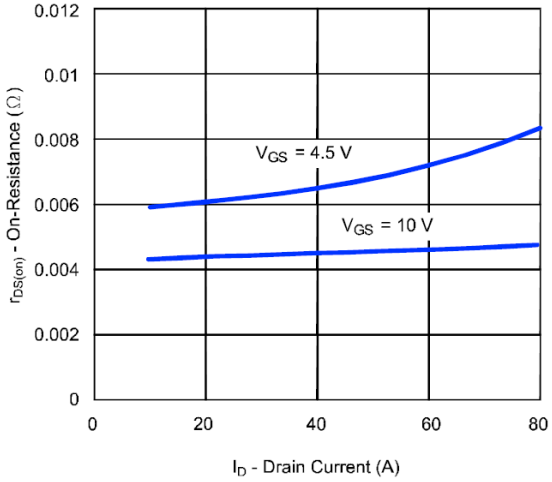
*注 2：脉冲测试，宽度≤300μS, 占空比≤2%

■ 特性曲线

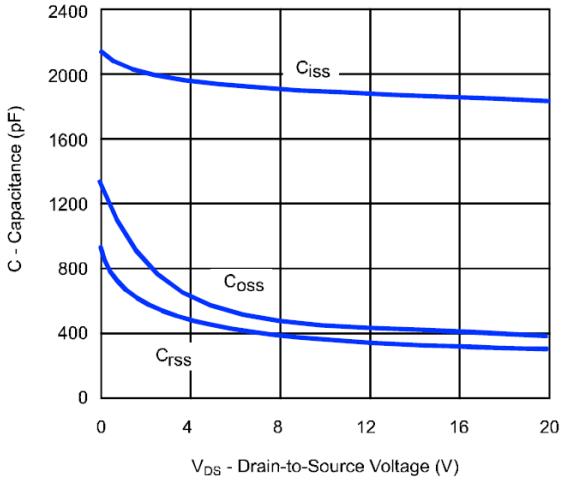
Transfer Characteristics



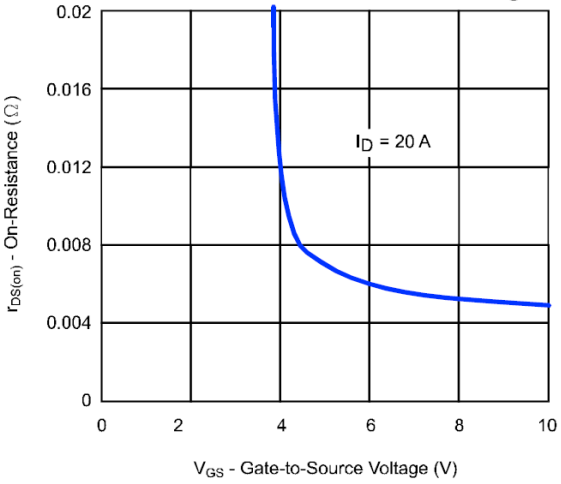
On-Resistance vs. Drain Current



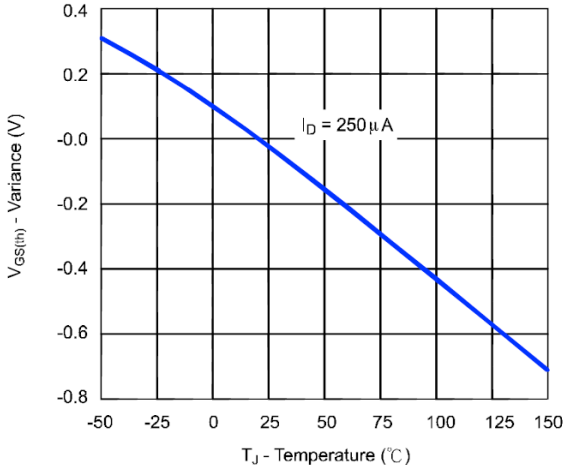
Capacitance



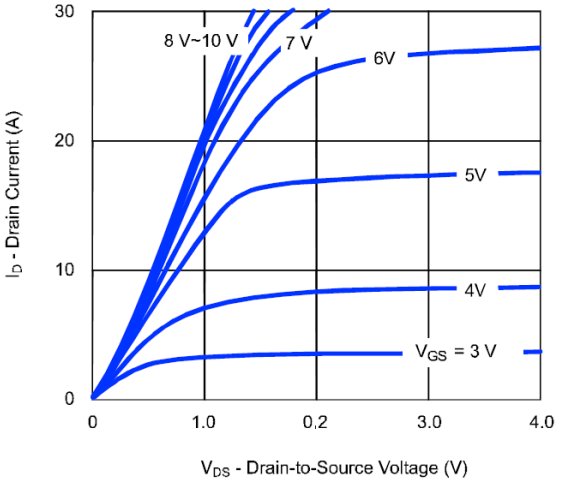
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



On-Region Characteristics



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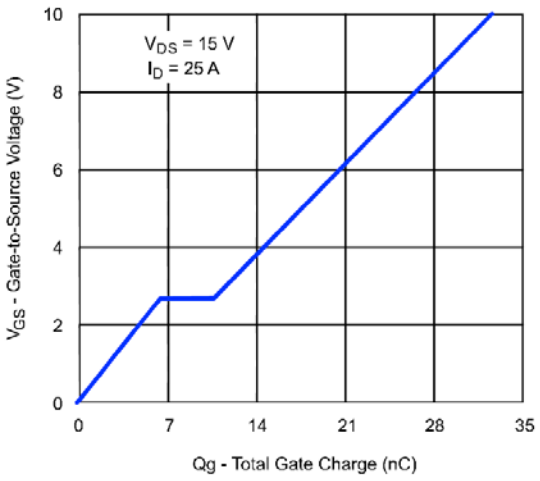
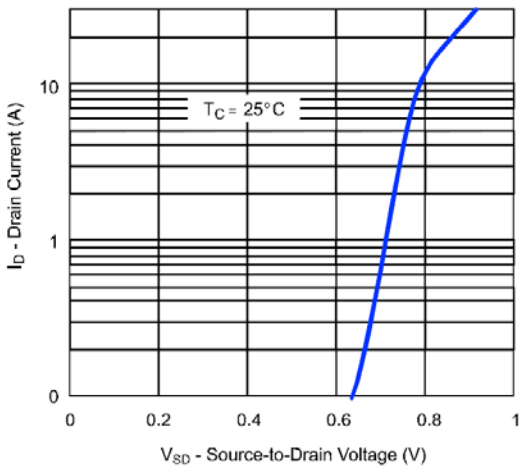
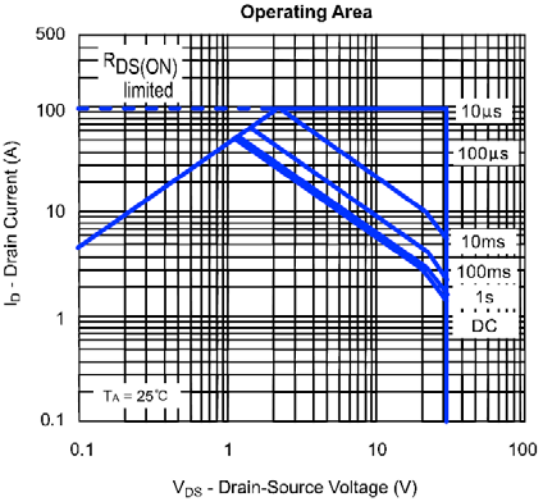
Gate Charge



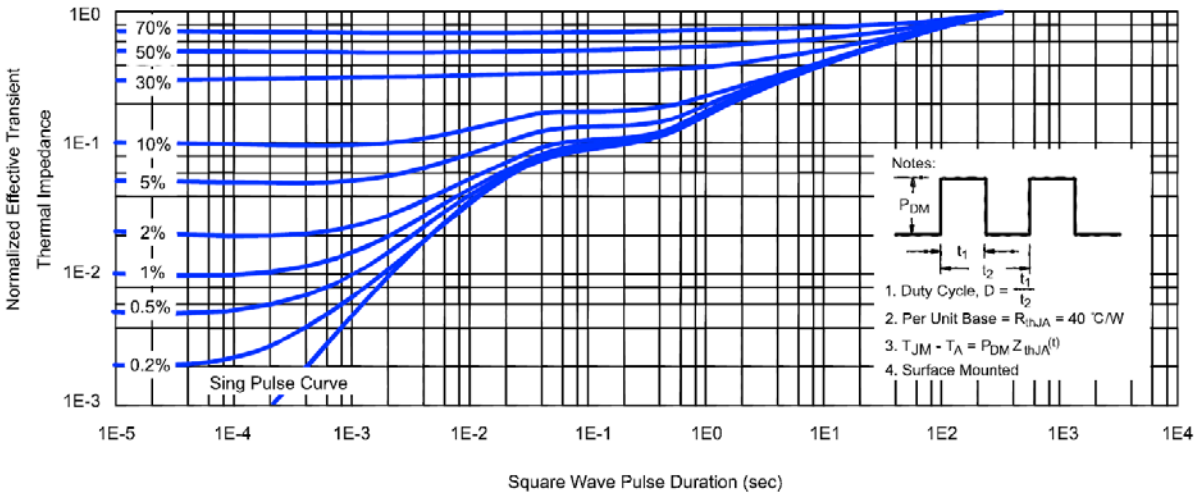
On-Resistance vs. Drain Current



Maximum Forward Biased Safe Operating Area

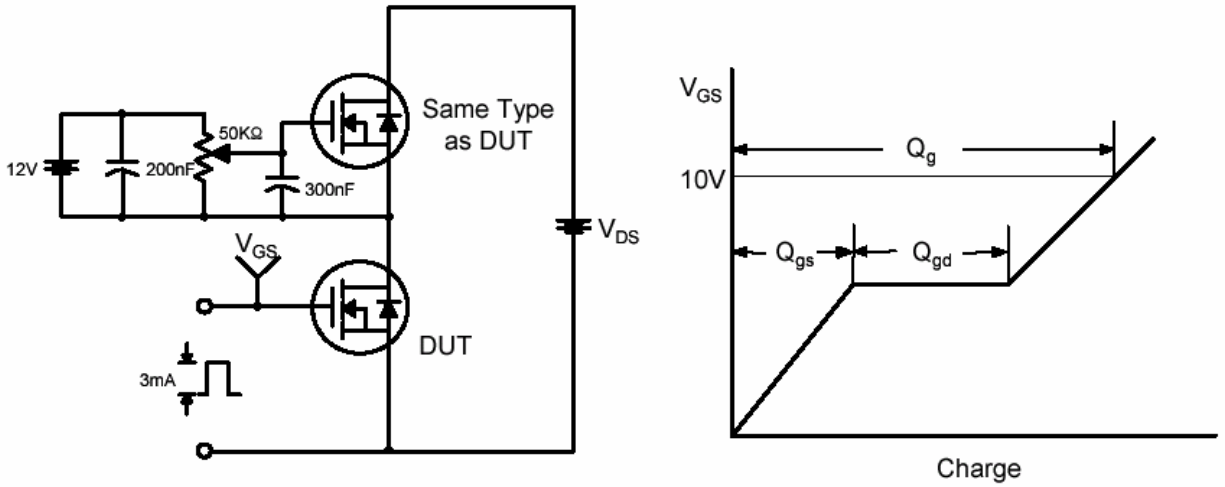


Normalized Thermal Transient Impedance, Junction-to-Ambient

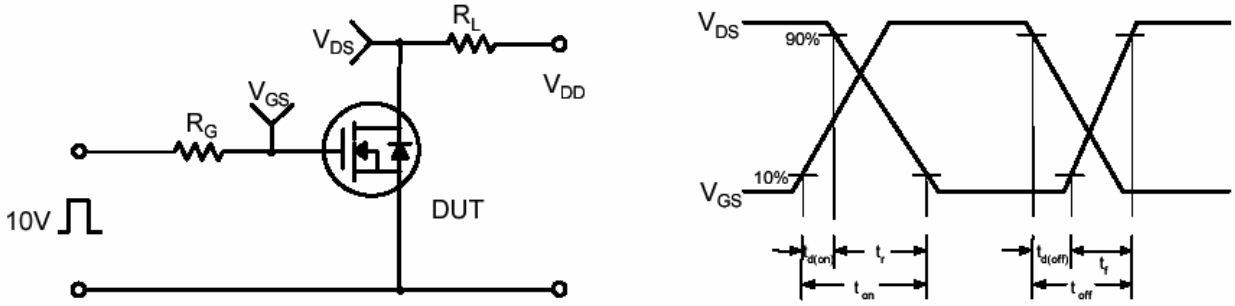


■ 特性曲线

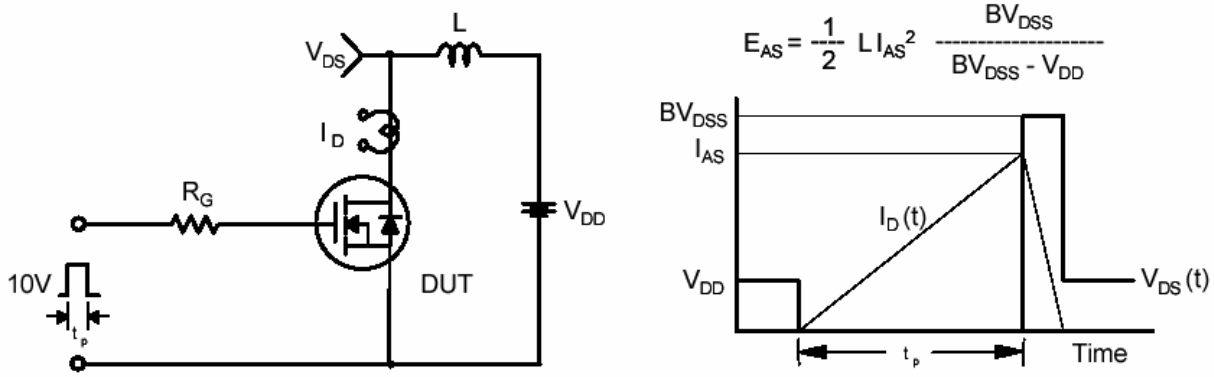
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching Test Circuit & Waveforms



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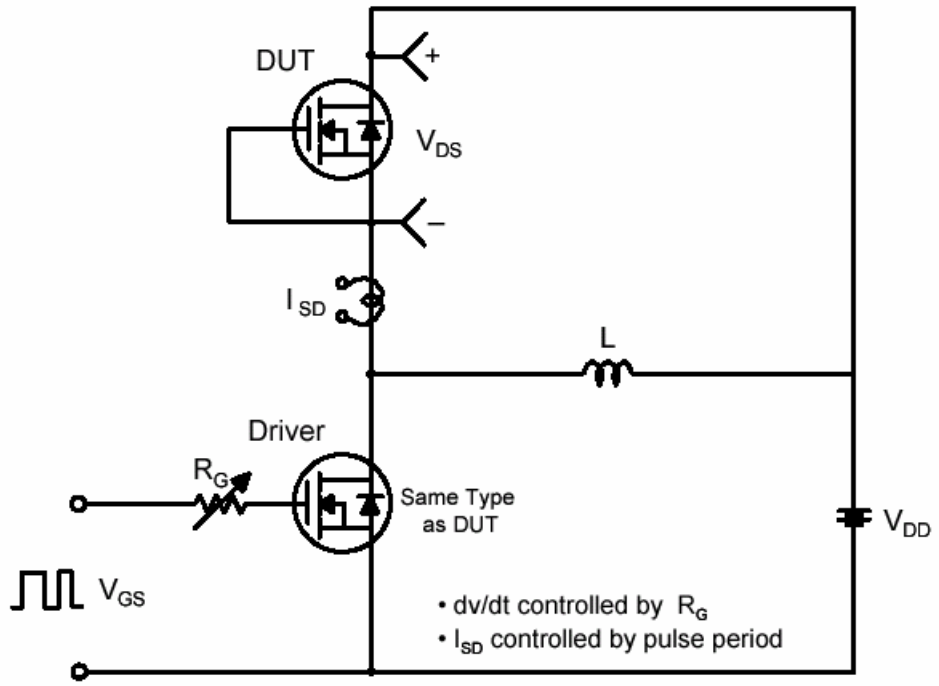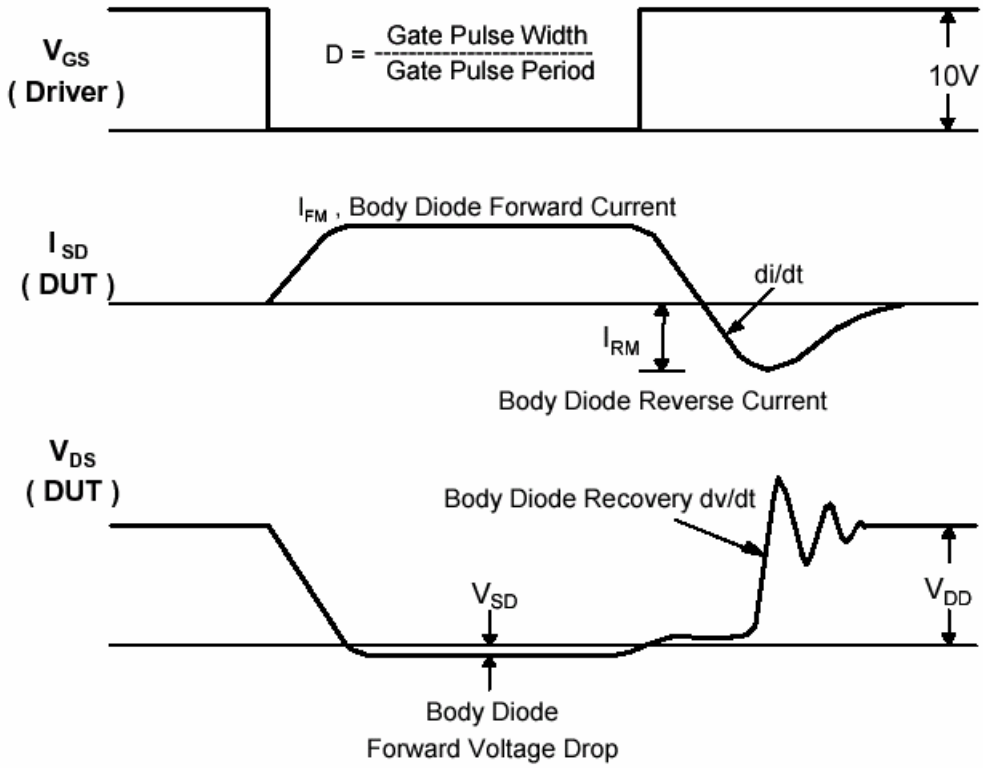
Peak Diode Recovery dv/dt Test Circuit & Waveforms