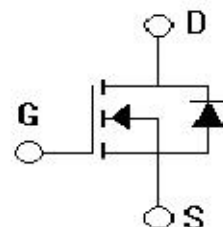


10N70

主要参数

Main Characteristics

I_D	10 A
V_{DS}	700 V
$R_{DS(on)}$ -typ	0.8Ω
Q_g -typ	40 nC



用途

适配器
充电器

Applications

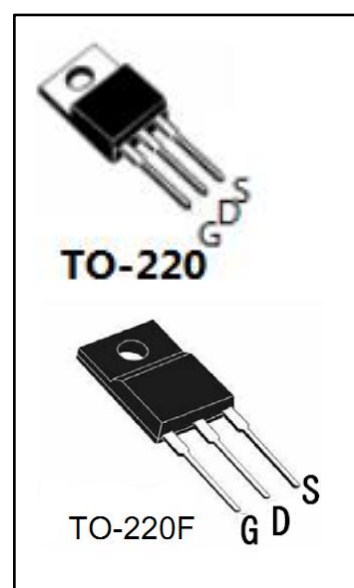
Adaptor Power
Charger

产品特性

低栅极电荷
产品全部经过雪崩测试
体内二极管回复时间短
RoHS 产品

Features

Low gate charge
100% avalanche tested
Fast Recovery Body Diode
RoHS product



产品中有害有毒物质或元素的名称及含量

部件名称 含量要求	有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
	≤0.1%	≤0.1%	≤0.01%	≤0.1%	≤0.1%	≤0.1%
引线框	○	○	○	○	○	○
塑封树脂	○	○	○	○	○	○
管 芯	○	○	○	○	○	○
内引线	○	○	○	○	○	○
焊 料	×	○	○	○	○	○
说 明	○：表示该元素的含量在 SJ/T11363-2006 标准的限量要求以下。 ×：表示该元素的含量超出 SJ/T11363-2006 标准的限量要求。 目前产品的焊料中含有铅 (Pb) 成分，但属于欧盟 RoHS 指令豁免范围。					

绝对最大额定值 **Absolute Ratings** (Tc=25℃)

项 目 Parameter	符 号 Symbol	数 值 Value	单位 Unit
最高漏极-源极直流电压 (注 1) Drain-Source Voltage (note 1)	V _{DSS}	700	V
连续漏极电流 Drain Current -continuous	I _D	10	A
最大脉冲漏极电流 Drain Current – pulse	I _{DM}	40	A
最高栅源电压 Gate-Source Voltage	V _{GSS}	±30	V
单脉冲雪崩能量 Single Pulsed Avalanche Energy	E _{AS}	500	mJ
二极管反向恢复最大电压变化速率 Peak Diode Recovery dv/dt	Dv/dt	5.5	V/ns
耗散功率 Power Dissipation	P _D (TO-220)	160	W
	P _D (TO-220F)	55	
最高结温 Operating Junction Temperature	T _J	+150	℃
存储温度 Storage Temperature Range	T _{STG}	-55~+150	℃
引线最高焊接温度 Maximum Lead Temperature for Soldering Purposes	T _L	300	℃

*漏极电流由最高结温限制

*Drain current limited by maximum junction temperature

电特性 Electrical Characteristics

项 目 Parameter	符 号 Symbol	测试条件 Tests conditions	最小 Min	典型 Typ	最大 Max	单位 Units
关态特性 Off –Characteristics						
漏—源击穿电压 Drain-Source Voltage	BV _{DSS}	I _D =250μA, V _{GS} =0V	800	-	-	V
零栅压下漏极漏电流 Zero Gate Voltage Drain Current	IDSS	V _{DS} =700V,V _{GS} =0V, TC=25℃	—	-	1	μA
		V _{DS} =560V,V _{GS} =0V, TC=125℃	—	-	125	μA
正向栅极体漏电流 Forward Gate-body leakage current	I _{GSSF}	V _{DS} =0V, V _{GS} =+30V	-	-	100	nA
反向栅极体漏电流 Reverse Gate-body leakage current	I _{GSSR}	V _{DS} =0V, V _{GS} =-30V	-	-	-100	nA
通态特性 On-Characteristics						
阈值电压 Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	2.0	-	4.0	V
静态导通电阻 Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V , I _D =5A	-	0.8	0.9	Ω
正向跨导 Forward Transconductance	g _{fs}	V _{DS} = 15V, I _D =5A	-	10	-	S
动态特性 Dynamic Characteristics						
输入电容 Input capacitance	C _{iss}	V _{DS} =25V,V _{GS} =0V f=1.0MHz	-	1540	-	pF
输出电容 Output capacitance	C _{oss}		-	150	-	pF
反向传输电容 Reverse transfer capacitance	C _{rss}		-	16	-	pF
开关特性 Switching Characteristics						
延迟时间 Turn-On delay time	t _{d(on)}	V _{DD} =350V I _D =10A R _G =4.7Ω V _{GS} =10V	-	14	-	ns
上升时间 Turn-On rise time	t _r		-	23	-	ns
延迟时间 Turn-Off delay time	t _{d(off)}		-	48	-	ns
下降时间 Turn-Off Fall time	t _f		-	32	-	ns
栅极电荷总量 Total Gate Charge	Q _g	V _{DS} =350V ,I _D =10A, V _{GS} =10V	-	40	-	nC
栅—源电荷 Gate-Source charge	Q _{gs}		-	7	-	nC

栅—漏电荷 Gate-Drain charge	Q _{gd}		-	17	-	nC
漏—源二极管特性及最大额定值 Drain-Source Diode Characteristics and Maximum Ratings						
正向最大连续电流（注 2） Maximum Continuous Drain（note 2）		ISD	-	-	10	A
正向最大脉冲电流（注 2） Maximum Pulsed Drain-Source Diode Forward Current（note 2）		ISM	-	-	40	A
正向压降 Drain-Source Diode Forward	VFSD	VGS=0V, IS=10A	-	-	1.5	V
反向恢复时间 Reverse recovery time	trr	VGS=0V, IS=10A dIF/dt=100A/μs	-	289	-	ns
反向恢复电荷 Reverse recovery charge	Qrr		-	1.9	-	μC

热特性 Thermal Characteristics

项 目 Parameter	符 号 Symbol	最大 Max		单 位 Unit
结到管壳的热阻 Thermal Resistance, Junction to Case	Rth(j-c)	TO-220/TO-220F	0.78/2.27	°C/W
结到环境的热阻 Thermal Resistance, Junction to Ambient	Rth(j-A)	TO-220/TO-220F	62/100	°C/W

注释:

1 TJ=+25to +150°C

2 Pulse width≤380μs; duty cycle≤2%.

特性曲线 Typical Characteristics

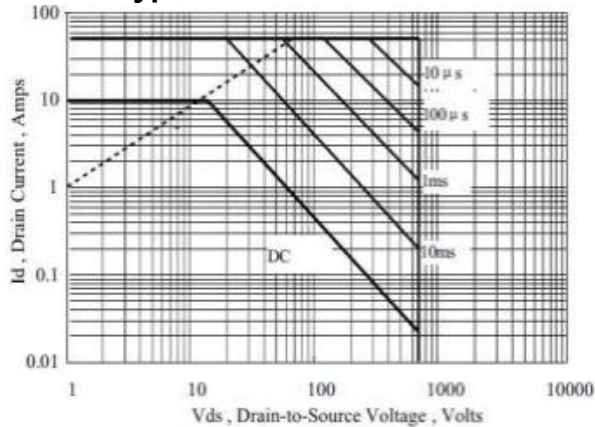


Figure 1 Maximum Forward Bias Safe Operating Area

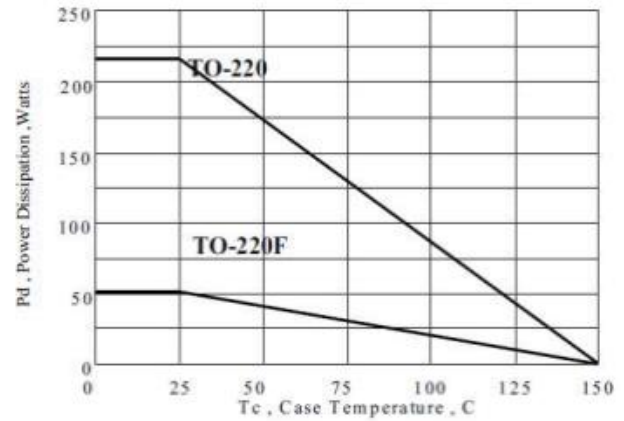


Figure 2 Maximum Power Dissipation vs Case Temperature

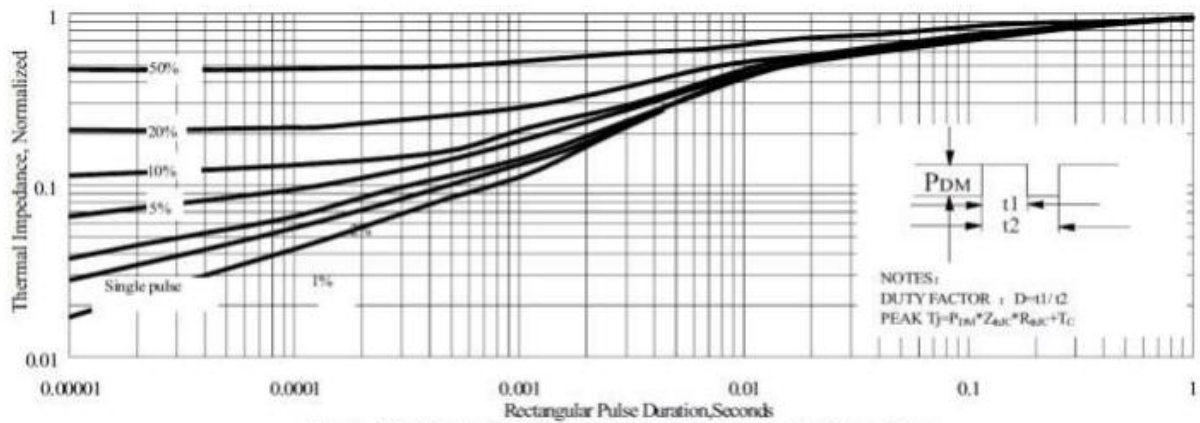
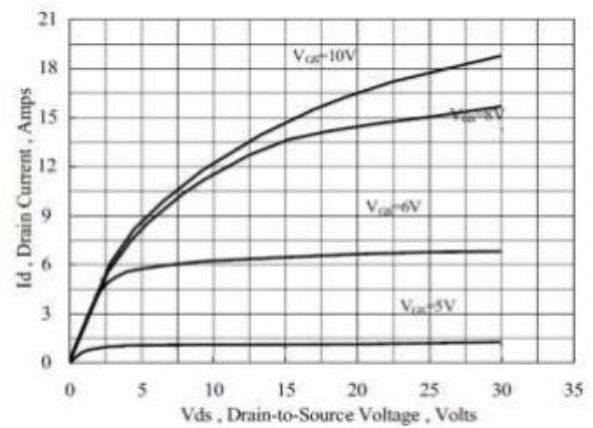
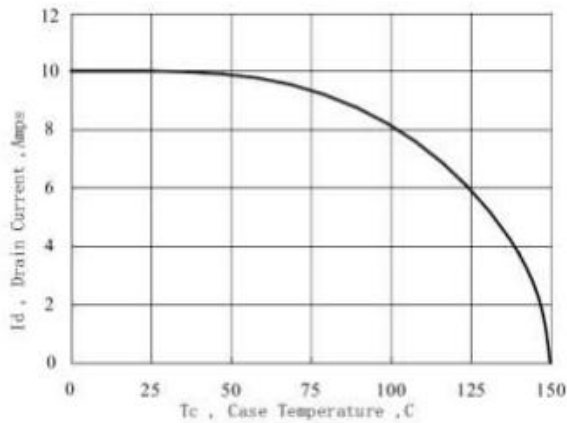
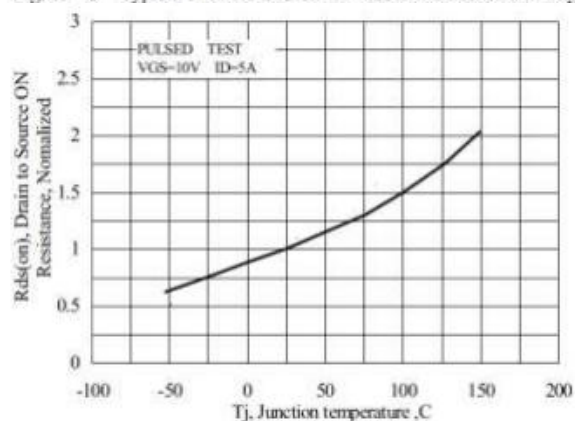
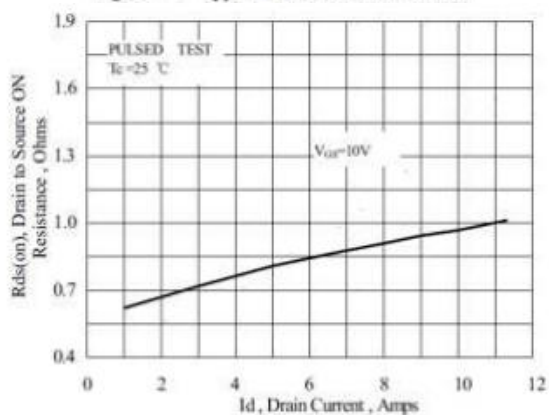
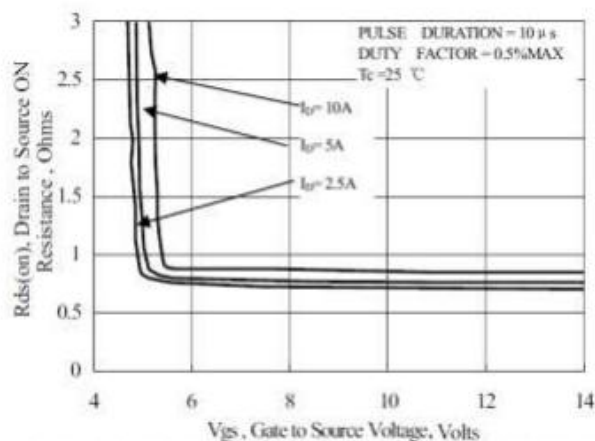
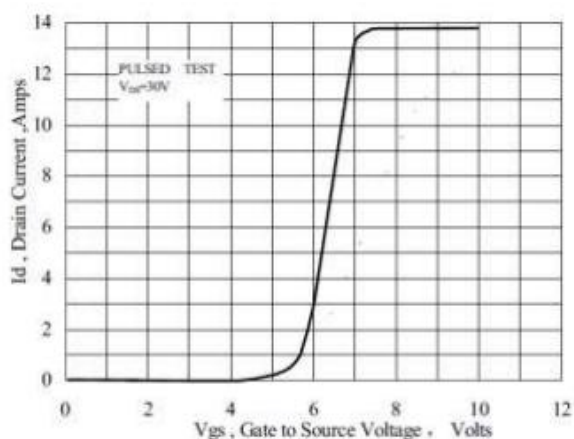
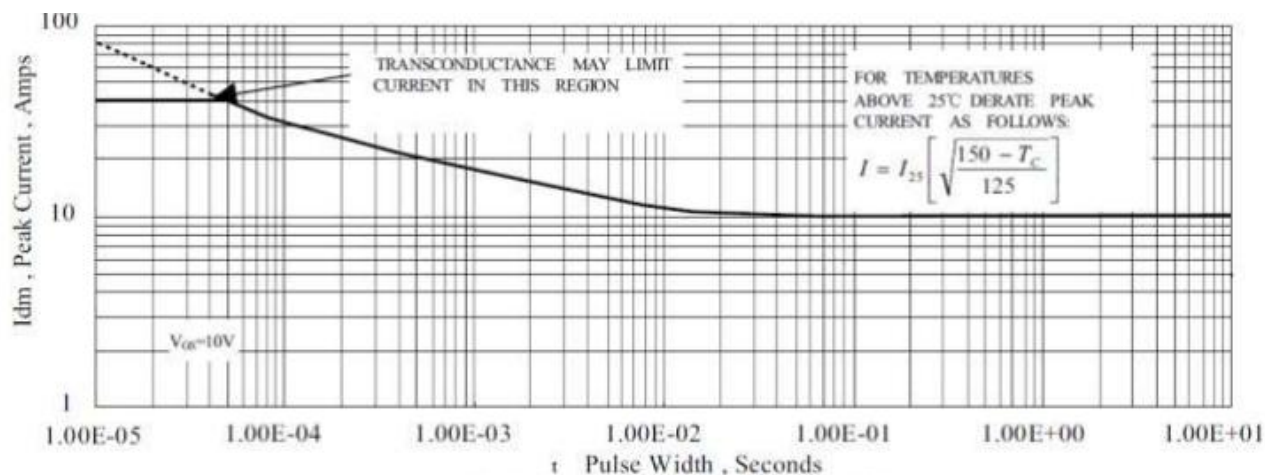


Figure 5 Maximum Effective Thermal Impedance, Junction to Case

特性曲线 Typical Characteristics



特性曲线 Typical Characteristics

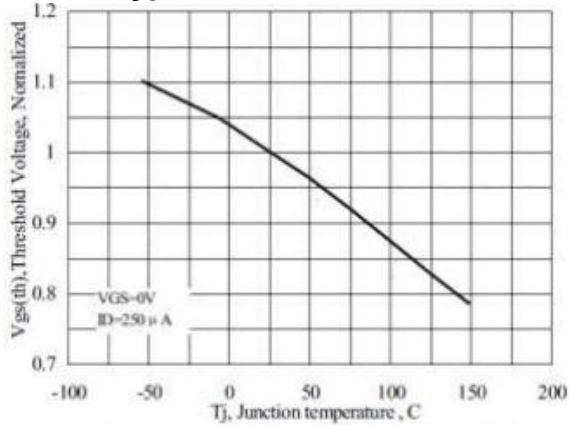


Figure 11 Typical Threshold Voltage vs Junction Temperature

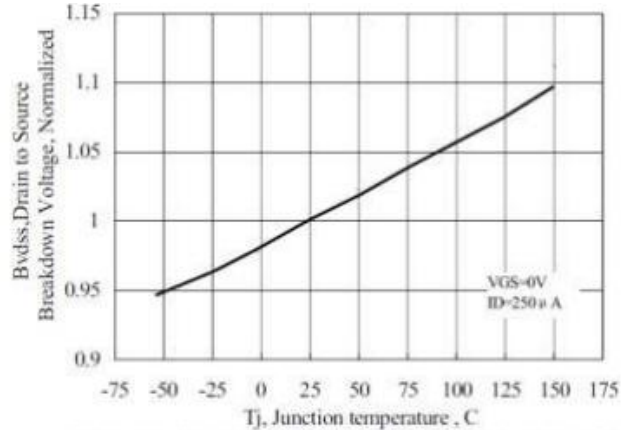


Figure 12 Typical Breakdown Voltage vs Junction Temperature

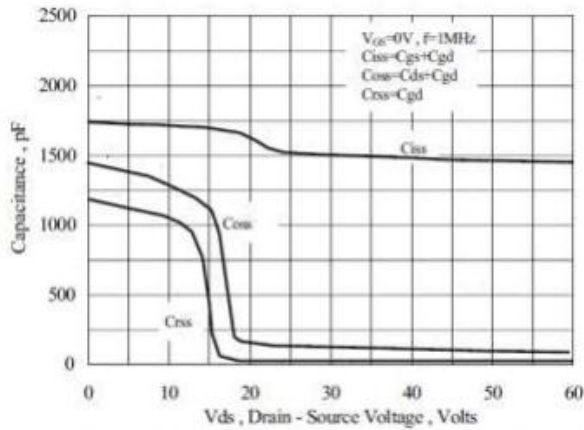


Figure 13 Typical Capacitance vs Drain to Source Voltage

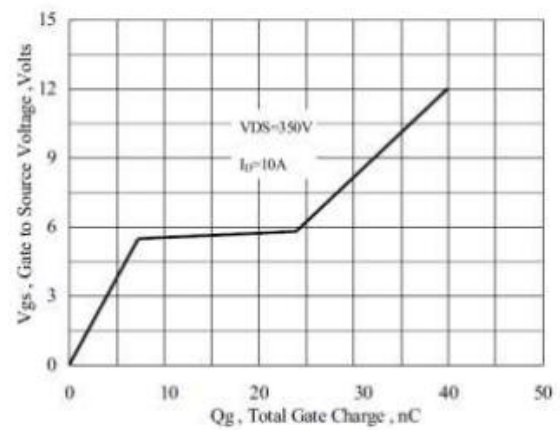


Figure 14 Typical Gate Charge vs Gate to Source Voltage

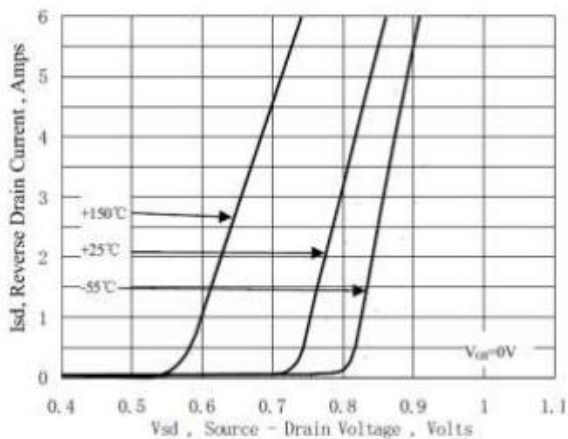


Figure 15 Typical Body Diode Transfer Characteristics

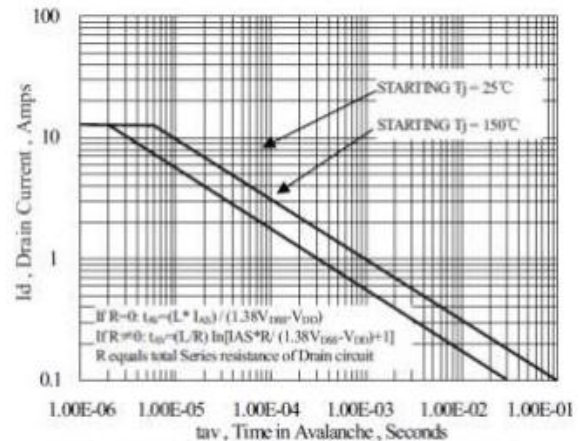


Figure 16 Unclamped Inductive Switching Capability