

- 特点: ■低栅极电荷 ■低Crss ■开关速度快 ■符合ROHS规范
- FEATURES: ■LOW GATE CHARGE ■LOW Crss ■FAST SWITCHING ■ROHS COMPLIANT
- 应用 ■高频开关电源 ■电子镇流器等开关电路
- APPLICATION: ■High efficiency switch mode power supplies ■Electronic ballast ECT.

●绝对最大额定值 (TC=25℃)

●Absolute Maximum Ratings (Tc=25℃)

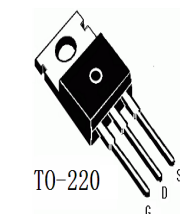
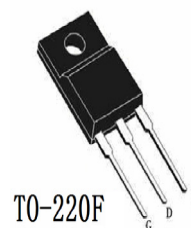
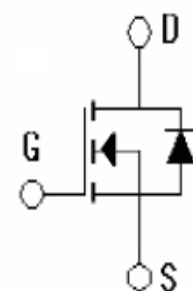
参数名称 PARAMETER	符号 SYMBOL	额定值 VALUE	单位 UNIT
漏极-源极电压 Drain-Source Voltage	VDSS	600	V
连续漏极电流 Drain Current-continuous	ID	9.5	A
最大脉冲漏极电流 Drain Current-pulse	IDM	40	A
最高栅源电压 Gate-Source Voltage	VGSS	±30	V
耗散功率 Power Dissipation	PD	50	W
最高结温 Junction Temperature	Tj	150	℃
贮存温度 Storage Temperature	TsTg	-55-150	℃

电特性 (TC=25℃)

Electronic Characteristics(Tc=25℃)

参数名称 CHARACTERISTICS	符号 SYMBOL	测试条件 TEST CONDITION	最小值 MIN	典型值 Typ	最大值 MAX	单位 UNIT
漏极-源极击穿电压 Drain-Source Voltage	BVDSS	ID=250uA;VGS=0V	600			V
零栅压下漏极漏电流 Zero Gate Voltage Drain Current	IDSS	VDS=600V,VGS=0V (TC=25℃)			1.0	uA
正向栅极体漏电流 Gate-body leakage current.forward	IGSSF	VDS=0V,VGS=20V			100	nA
反向栅极体漏电流 Gate-body leakage current.reverse	IGSSR	VDS=0V,VGS=-20V			-100	nA
阈值电压 Gate Threshold Voltage	VGS(th)	VDS=VGS,ID=250uA	3.0		4.5	V
静态导通电阻 Static Drain-Source On-Resistance	RDS(ON)	VGS=10V,ID=4.75A		0.66	0.75	Ω
正向跨导 Forward Transconductance	Gfs	VDS=40V,ID=4.75A		8.2		S
输入电容 Input capacitance	Ciss	VDS=25V VGS=0V f=1.0MHZ		1610	2065	pF
输出电容 Output capacitance	Coss			156	210	pF
反向传输电容 Reverse transfer capacitance	Crss			20	26	pF

封装 Package



电特性

Electronic Characteristics

单脉冲雪崩能量（注2） Single Pulsed Avalanche Energy	EAS	713.0	MJ
雪崩电流（注1） Avalanche Current（注 1）	IAR	9.5	A
重复雪崩能量（注1） Repetitive Avalanche Current (note1)	EAR	17.8	MJ
二极管反向恢复最大电压变化速率（注3） Peak Diode Recovery dv/dt(note 3)	dv/dt	4.5	v/ns

开关特征 Swiching Characteristics

延迟时间 Turn-On delay time	td(on)	VDD=300V, ID=10A, RG=25 Ω (注4,5)	-	68	91	ns
上升时间 Turn-On rise time	tf		-	109	150	ns
延迟时间 Turn-Off delay time	td(off)		-	214	300	ns
下降时间 Turn-Off rise time	tf		-	85	165	ns
栅极电荷总量 Total Gate Charge	Qg	VDS=480V, ID=10A, VGS=10V (注4,5)	-	34	45	nc
栅-源电荷 Gate-Source charge	Qgs		-	6.9	-	nc
栅-漏电荷 Gate-Drain charge	Qgd		-	12	-	nc

漏-源二极管特征及最大额定值 Drain-Source Diode Characteristics and Maximum Ratings

正向最大连续电流 Maximum continuous Drain-Source Diode Forward Current	IS		-	-	9.5	A
正向最大脉冲电流 Maximum Pulsed Drain-Source Diode Forward Current	ISM		-	-	38	A
正向压降 Drain-Source Diode Forward Voltage	VSDF	VGS=0V, IS=10.0A	-	1.05	1.4	V
反向恢复时间 Reverse recovery time	Trr	VGS=0V, IS=10.0A diF/dt=100A/us (note 4)	-	425	-	ns
反向恢复电荷 Reverse recovery charge	Qrr		-	4.31	-	μ C

热特征 Thermal Characteristic

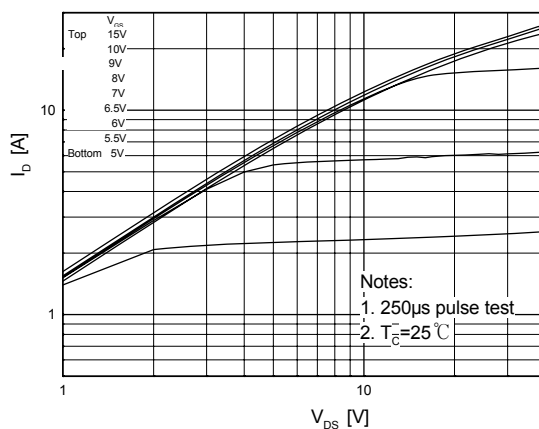
项目 Parameter	符号 Symbol	最大 (Max)		单位 (Unit)
		T0-220(铁封)	T0-220F塑封	
结到管壳的热阻 Thermal Resistance,Junction to case	Rth(j-c)	0.7	2.5	℃ /W
结到环境的热阻 Thermal Resistance,Junction to Ambient	Rth(j-a)	62.5	62.5	℃ /W

注释：

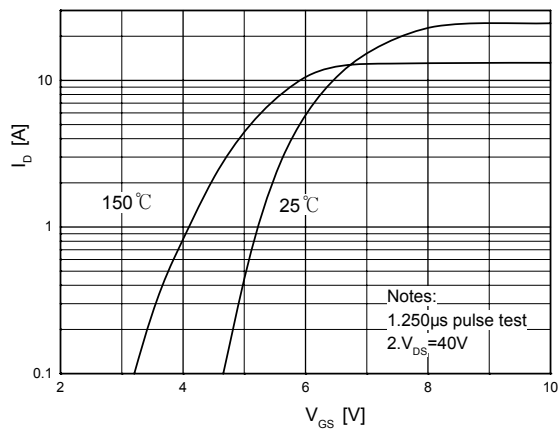
- 1、脉冲宽度由最高结温限制
- 2、L=14.5mH, IAS=10.0, VDD=50V, RG=25 Ω， 起始结温TJ=25℃
- 3、ISO《10.0A, di/dt《300A/us, VDD《BVDSS,起始结温Tj=25℃
- 4、脉冲测试：脉冲宽度《300us, 占空比《2%
- 5、基本与工作温度无关

特征曲线 ELECTRICAL CHARACTERISTICS (curves)

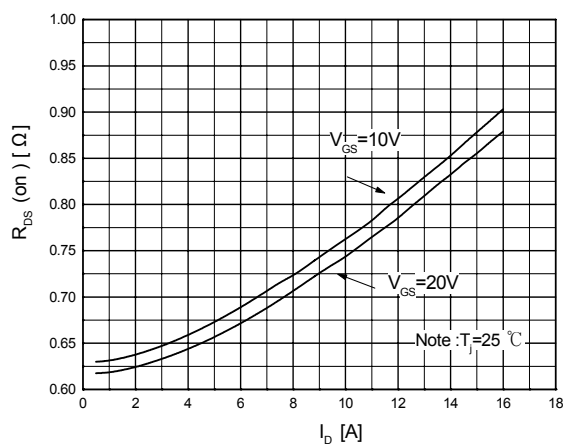
On-Region Characteristics



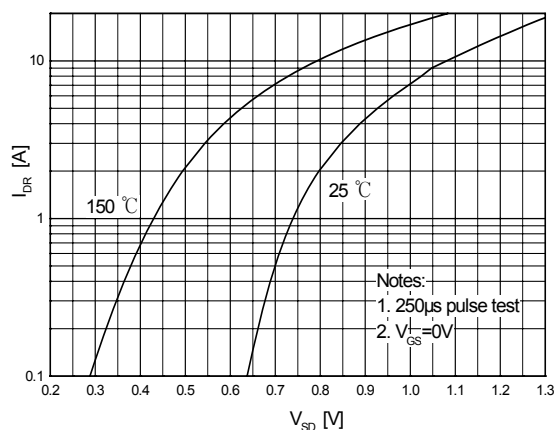
Transfer Characteristics



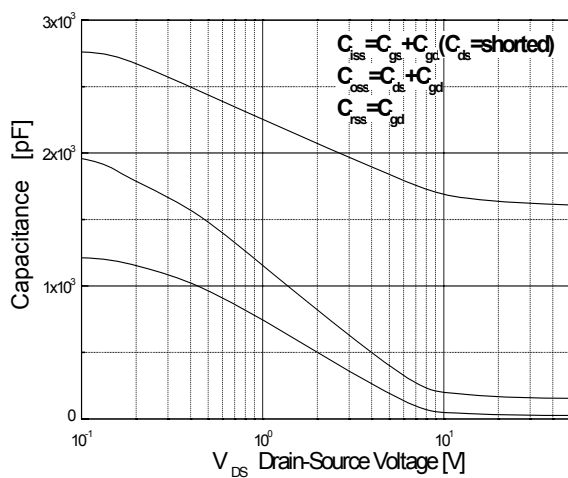
On-Resistance Variation vs. Drain Current and Gate Voltage



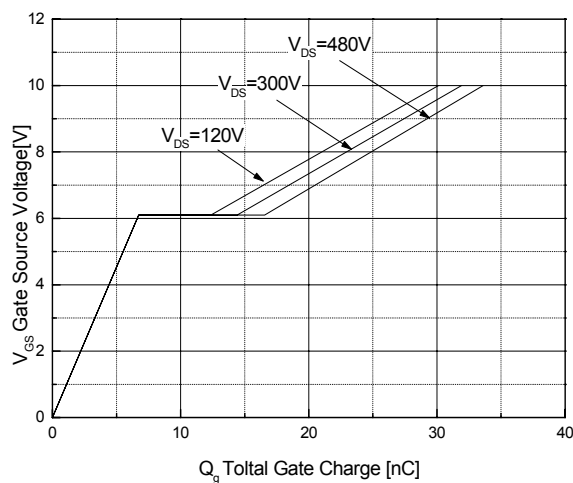
Body Diode Forward Voltage Variation vs. Source Current and Temperature



Capacitance Characteristics

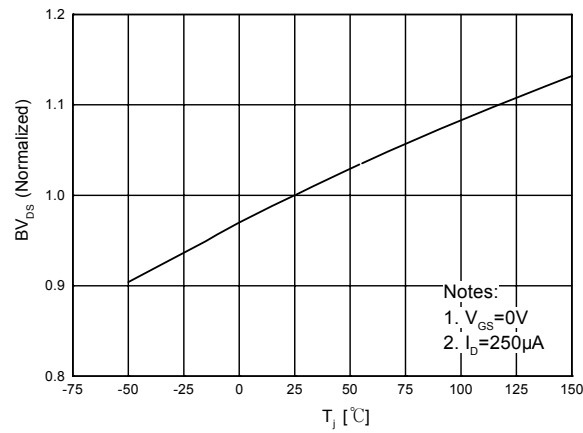


Gate Charge Characteristics

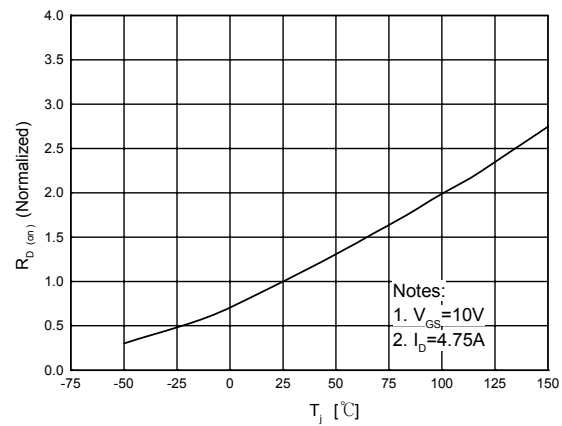


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

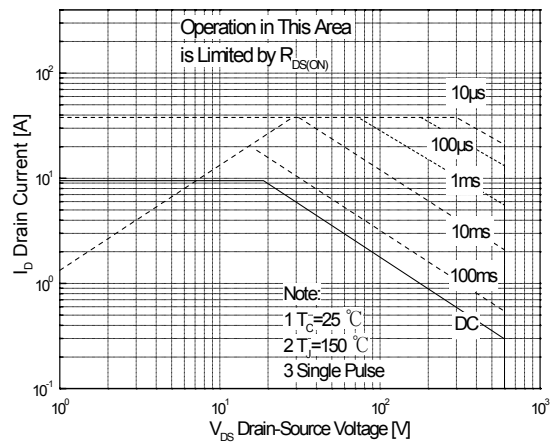
Breakdown Voltage Variation
vs. Temperature



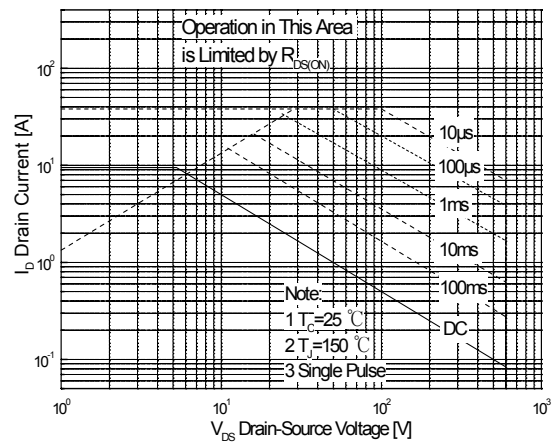
On-Resistance Variation
vs. Temperature



Maximum Safe Operating Area
For TO-220



Maximum Safe Operating Area
For TO-220F



Maximum Drain Current
vs. Case Temperature

