



JCS65N20ABT

主要参数 MAIN CHARACTERISTICS

I_D	65A
V_{DS}	200 V
$R_{dson}(@V_{gs}=10V)$	25m Ω
Q_g	120nc

用途

- 高频开关电源
- 电子镇流器
- UPS 电源

产品特性

- 低栅极电荷
- 低 C_{rss}
- 开关速度快
- 产品全部经过雪崩测试
- 高抗 dv/dt 能力
- RoHS 产品

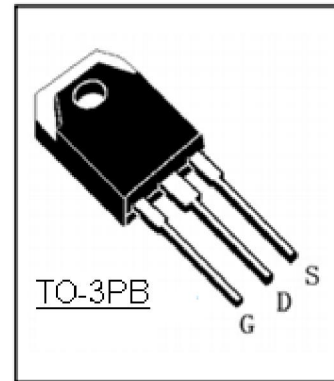
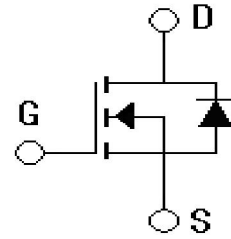
APPLICATIONS

- High frequency switch mode power supplies
- Electronic lamp ballasts
- based on half bridge
- UPS

FEATURES

- Low gate charge
- Low C_{rss}
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability
- RoHS product

封装 Package



订货信息 ORDER MESSAGE

订货型号 Order codes	印记 Marking	封装 Package	无卤素 Halogen Free	包装 Packaging	器件重量 Device Weight
JCS65N20ABT-O-AB-N-B	JCS65N20ABT	TO-3PB	否 NO	条管 Tube	5.73g (typ)





绝对最大额定值 ABSOLUTE RATINGS (Tc=25℃)

项 目 Parameter	符 号 Symbol	数 值 Value	单 位 Unit
		JCS65N20ABT	
最高漏极—源极直流电压 Drain-Source Voltage	V _{DSS}	200	V
连续漏极电流 Drain Current -continuous	I _D T=25℃ T=100℃	65	A
		37	A
最大脉冲漏极电流(注 1) Drain Current – pulse (note 1)	I _{DM}	260	A
最高栅源电压 Gate-Source Voltage	V _{GSS}	±30	V
单脉冲雪崩能量(注 2) Single Pulsed Avalanche Energy (note 2)	E _{AS}	1225	mJ
雪崩电流(注 1) Avalanche Current (note 1)	I _{AR}	65	A
重复雪崩能量 (注 1) Repetitive Avalanche Energy (note 1)	E _{AR}	27.7	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	5.4	V/ns
耗散功率 Power Dissipation	P _D T _C =25℃ -Derate above 25℃	277	W
		2.22	W/℃
最高结温及存储温度 Operating and Storage Temperature Range	T _J , 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}	$I_D=250\mu A, V_{GS}=0V$	200	-	-	V
击穿电压温度特性 Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	$I_D=250\mu A$, referenced to $25^\circ C$	-	0.16	-	
零栅压下漏极漏电流 Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=200V, V_{GS}=0V,$ $T_C=25^\circ C$	-	-	1	μA
		$V_{DS}=160V, T_C=125^\circ C$	-	-	10	μA
正向栅极体漏电流 Gate-body leakage current, forward	I_{GSSF}	$V_{DS}=0V, V_{GS}=30V$	-	-	100	nA
反向栅极体漏电流 Gate-body leakage current, reverse	I_{GSSR}	$V_{DS}=0V, V_{GS}=-30V$	-	-	-100	nA
通态特性 On-Characteristics						
阈值电压 Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D=250\mu A$	2.0	-	4.0	V
静态导通电阻 Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D=32.5A$	-	25	32	m Ω
正向跨导 Forward Transconductance	g_{fs}	$V_{DS} = 40V, I_D=32.5A$ (note 4)		50	-	S
动态特性 Dynamic Characteristics						
输入电容 Input capacitance	C_{iss}	$V_{DS}=25V,$ $V_{GS}=0V,$ $f=1.0MHz$	-	4100	4920	pF
输出电容 Output capacitance	C_{oss}		-	970	1164	pF
反向传输电容 Reverse transfer capacitance	C_{rss}		-	130	160	pF

电特性 ELECTRICAL CHARACTERISTICS

开关特性 Switching Characteristics						
延迟时间 Turn-On delay time	$t_d(on)$	$V_{DD}=100V, I_D=65A, R_G=25\Omega$ (note 4, 5)	-	56	112	ns
上升时间 Turn-On rise time	t_r		-	408	500	ns
延迟时间 Turn-Off delay time	$t_d(off)$		-	270	550	ns
下降时间 Turn-Off Fall time	t_f		-	240	490	ns
栅极电荷总量 Total Gate Charge	Q_g	$V_{DS} = 160V,$	-	120	140	nC





栅—源电荷 Gate-Source charge	Q_{gs}	$I_D=65A$	-	24.6	-	nC
栅—漏电荷 Gate-Drain charge	Q_{gd}	$V_{GS}=10V$ (note 4, 5)	-	63.6	-	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 Maximum Continuous Drain -Source Diode Forward Current		I_S	-	-	65	A
正向最大脉冲电流 Maximum Pulsed Drain-Source Diode Forward Current		I_{SM}	-	-	240	A
正向压降 Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=50A$	-	-	1.5	V
反向恢复时间 Reverse recovery time	t_{rr}	$V_{GS}=0V, I_S=65A$	-	175	-	ns
反向恢复电荷 Reverse recovery charge	Q_{rr}	$di/dt=100A/\mu s$ (note 4)	-	1.23	-	μC

热特性 THERMAL CHARACTERISTIC

项 目 Parameter	符 号 Symbol	最大 Max		单 位 Unit
		JCS65N20ABT		
结到管壳的热阻 Thermal Resistance, Junction to Case	$R_{th(j-c)}$	0.12		$^{\circ}C/W$
结到环境的热阻 Thermal Resistance, Junction to Ambient	$R_{th(j-A)}$	34.5		$^{\circ}C/W$

注释:

- 1: 脉冲宽度由最高结温限制
- 2: $L=0.5mH, I_{AS}=65A, V_{DD}=25V, R_G=25\Omega$, 起始结温 $T_J=25^{\circ}C$
- 3: $I_{SD} \leq 65A, di/dt \leq 300A/\mu s, V_{DD} \leq BV_{DSS}$, 起始结温 $T_J=25^{\circ}C$
- 4: 脉冲测试: 脉冲宽度 $\leq 300\mu s$, 占空比 $\leq 2\%$
- 5: 基本与工作温度无关

Notes:

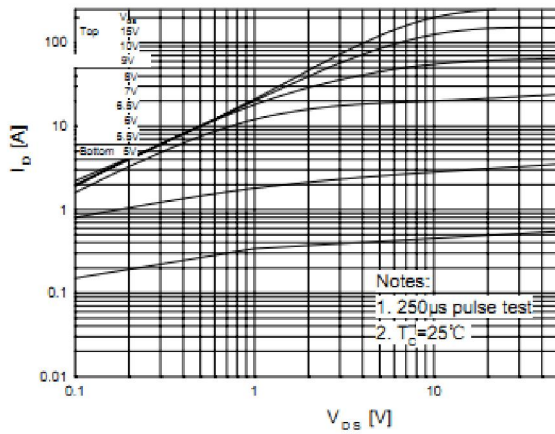
- 1: Pulse width limited by maximum junction temperature
- 2: $L=0.8mH, I_{AS}=65A, V_{DD}=25V, R_G=25\Omega$, Starting $T_J=25^{\circ}C$
- 3: $I_{SD} \leq 65A, di/dt \leq 300A/\mu s, V_{DD} \leq BV_{DSS}$, Starting $T_J=25^{\circ}C$
- 4: Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycles $\leq 2\%$
- 5: Essentially independent of operating temperature



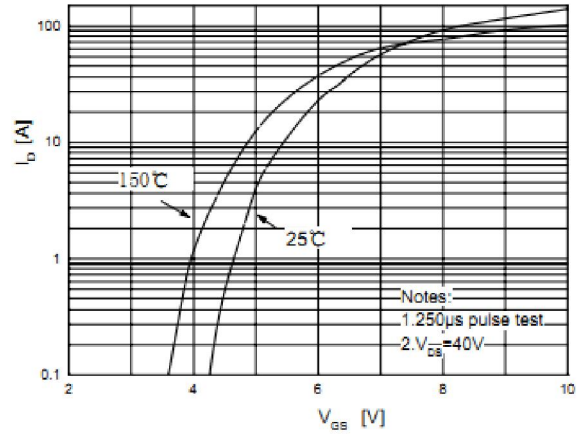


特征曲线 ELECTRICAL CHARACTERISTICS (curves)

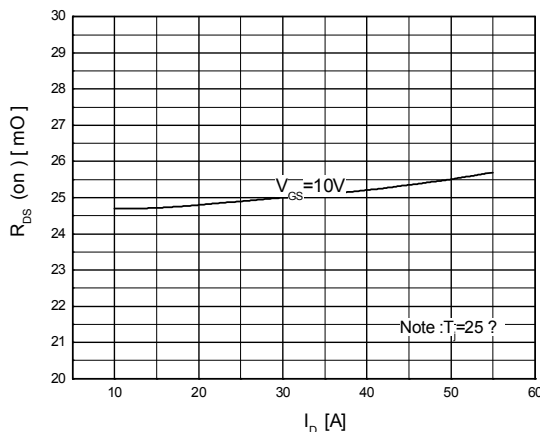
On-Region Characteristics



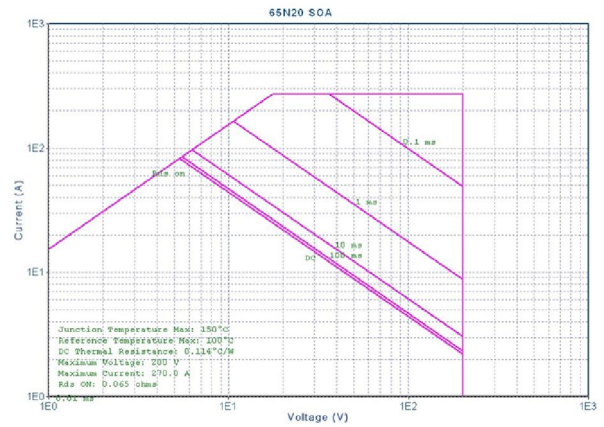
Transfer Characteristics



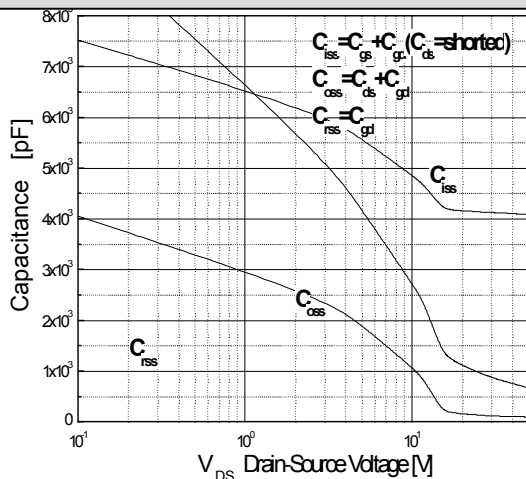
On-Resistance Variation vs. Drain Current and Gate Voltage



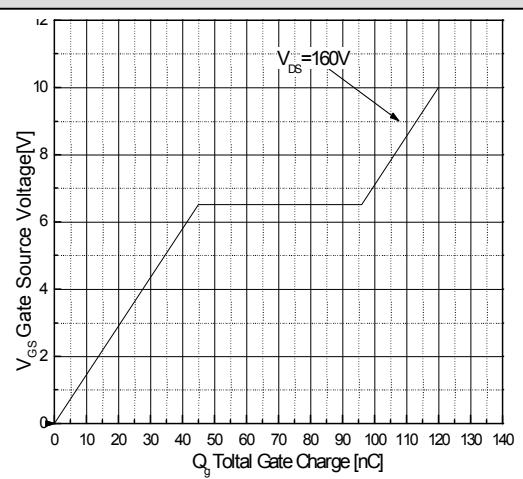
Maximum Safe Operating Area



Capacitance Characteristics

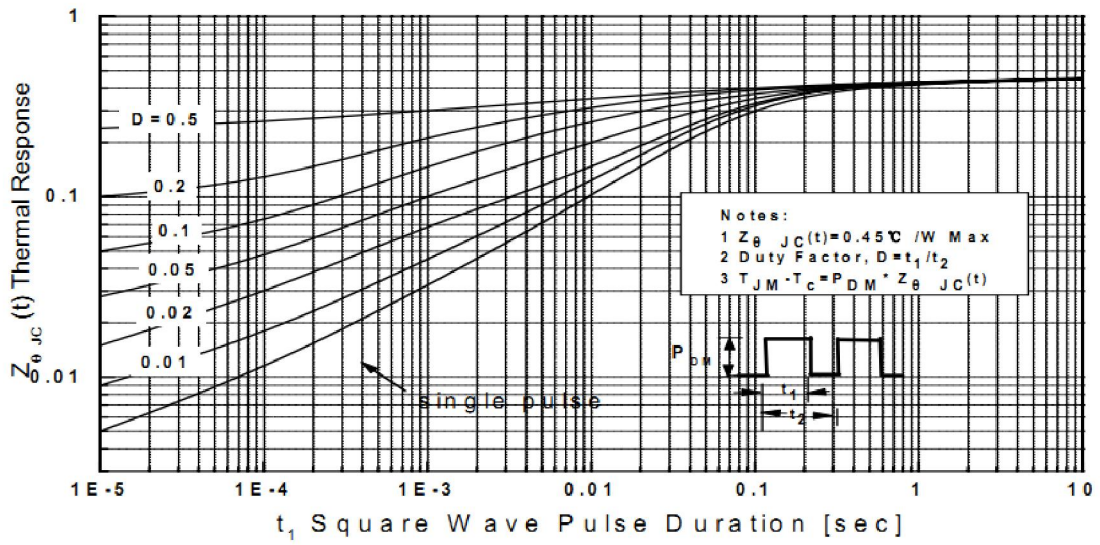


Gate Charge Characteristics





Transient Thermal Response Curve

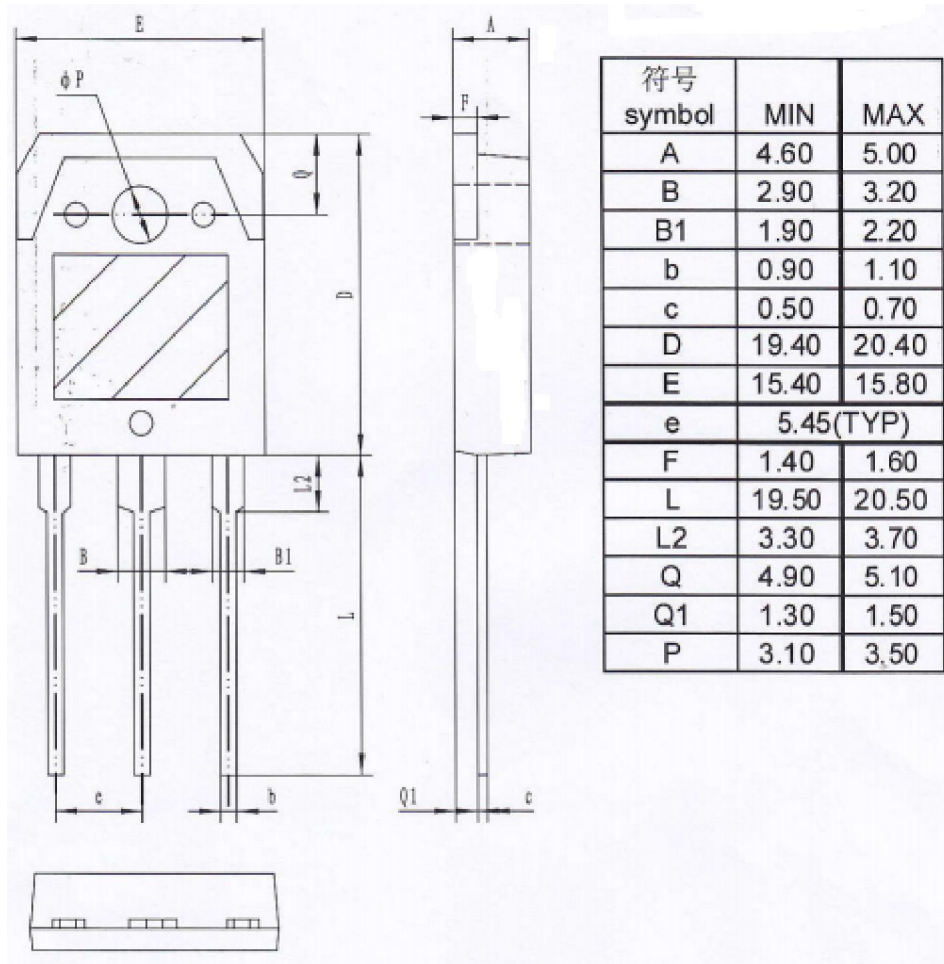




外形尺寸 PACKAGE MECHANICAL DATA

TO-3PB

单位 Unit: mm





注意事项

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- 3.在电路设计时请不要超过器件的绝对最大额定值，否则会影响整机的可靠性。
- 4.本说明书如有版本变更不另外告知

NOTE

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3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
4. Jilin Sino-microelectronics co., Ltd reserves the right to make changes in this specification sheet and is subject to change without prior notice.

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