



3CT12B

主要参数 MAIN CHARACTERISTICS

$I_{T(RMS)}$	16A
V_{DRM}/V_{RRM}	800V
I_{GT}	1-25mA

用途

- 半交流开关
- 相位控制

产品特性

- 玻璃钝化芯片，高可靠性和一致性
- 低通态电流和高浪涌电流能力
- 环保 RoHS 产品

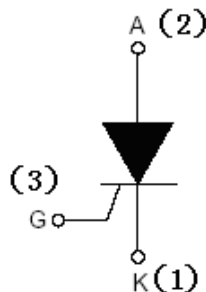
APPLICATIONS

- Half AC switching
- Phase control

FEATURES

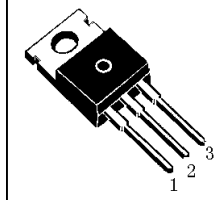
- Glass-passivated mesa chip for reliability and uniform
- Low on-state voltage and High I_{TSM}
- RoHS products

封装 Package



序号 Pin	引线名称 Description
1	阴极 K
2	阳极 A
3	门极 G

TO-220C



订货信息 ORDER MESSAGES

订货型号 Order code	印 记 Marking	封 装 Package	包 装 Packaging
3CT12B-O-C-N-C	3CT12B	TO-220C	袋装 Tube
3CT12B-O-C-N-B	3CT12B	TO-220C	条管 Tube
3CT12B-O-C-B-B	3CT12B	TO-263	条管 Tube
Device summary			
Parameter	3CT12B	unit	
VDRM/VRRM	800	V	





绝对最大额定值 ABSOLUTE RATINGS (limit values)

符 号 Symbol	项 目 Parameter		数 值 Value	单 位 Unit
$I_{T(RMS)}$	通态方均根电流 RMS on-state current(180° Conduction angle)		$T_c = 110^\circ\text{C}$ 16	A
$I_{T(AV)}$	通态平均电流 Average on-state current(180° Conduction angle)		$T_c = 110^\circ\text{C}$ 10	A
I_{TSM}	非重复浪涌峰值通态电流 Non- repetitive surge peak on-state current	$T_p = 8.3\text{ms}$	$T_c = 25^\circ\text{C}$ 200	A
		$T_p = 10\text{ms}$		
I^2t	I^2t 使用数值 I^2t Value for using	$t = 10\text{ms}$	$T_c = 25^\circ\text{C}$ 200	A^2s
di/dt	Critical rate of rise of on-state current $I_G = 2 \times I_{GT}, tr \leq 100\text{ns}$	$F = 60\text{Hz}$	$T_c = 125^\circ\text{C}$ 50	A/us
I_{GM}	峰值门极电流 Peak gate current	$T_p = 20\mu\text{s}$	$T_c = 125^\circ\text{C}$ 5	A
$P_{G(AV)}$	平均门极功率 Average gate power		$T_c = 125^\circ\text{C}$ 1	W
T_{stg}	存储温度 Storage junction temperature range		-40 to +150	°C
T_j	操作结温 Operation junction temperature range			
V_{RGM}	Maximum peak reverse gate voltage		5	V



电特性 ELECTRICAL CHARACTERISTIC ($T_c=25^\circ\text{C}$)

Symbol	Test Conductions		Value	Unit	
I_{GT}	$V_D=12V, R_L=33\ \Omega$		MIN	1	mA
			MAX	25	mA
V_{GT}			MAX	1.3	V
V_{GD}	$V_D=V_{DRM}, R_L=3.3K\ \Omega$	$T_j=125^\circ\text{C}$	MIN	0.2	V
I_H	维持电流 Holding current		MAX	40	mA
I_L	擎住电流 Holding current		MAX	60	mA
dV/dt	$V_{DM}=67\% V_{DRM}$ gate open	$T_j=125^\circ\text{C}$	MAX	1000	V/ μs
			MIN	500	V/ μs
V_{TM}	$I_{TM}=32A$ $T_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	MAX	1.6	V
V_{TO}	Threshold voltage	$T_j=125^\circ\text{C}$	MAX	0.77	V
R_d	Dynamic resistance	$T_j=125^\circ\text{C}$	MAX	23	$m\ \Omega$
I_{DRM} I_{RRM}	$V_{DRM}=V_{RRM}$	$T_j=25^\circ\text{C}$	MAX	5	μA
		$T_j=125^\circ\text{C}$	MAX	2	mA
Symbol	Parameter		value	Unit	
$R_{th(j-c)}$	junction to case (DC)		1.1	$^\circ\text{C/W}$	
$R_{th(j-a)}$	junction to ambient (DC)		60	$^\circ\text{C/W}$	



Figure 1. Maximum average power dissipation versus average on-state current

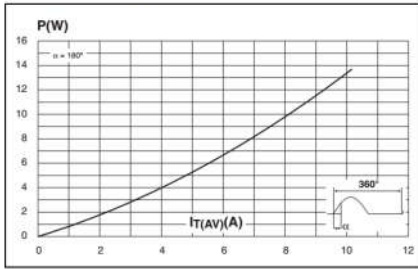


Figure 2. Average and D.C. on-state current versus case temperature

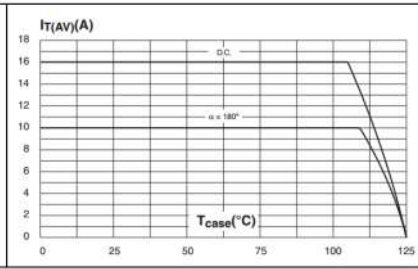


Figure 3. Average and D.C. on-state current versus ambient temperature (copper surface under tab: S=1cm²) (D²PAK)

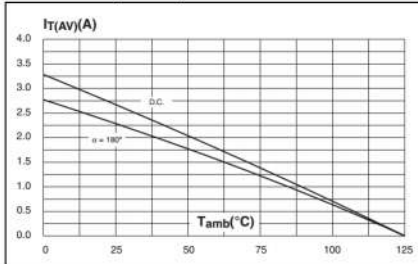


Figure 4. Relative variation of thermal impedance versus pulse duration

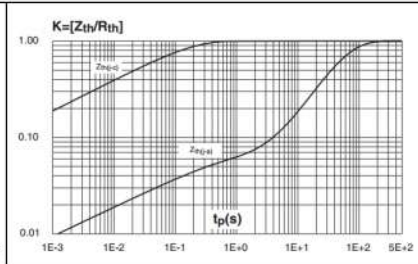


Figure 5. Relative variation of gate trigger current, holding current and latching current versus junction temperature

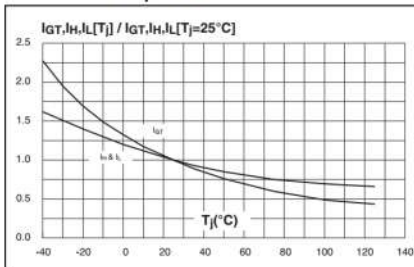


Figure 6. Surge peak on-state current versus number of cycles

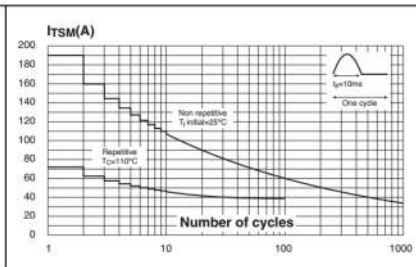


Figure 7. Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10 ms, and corresponding values of I²t

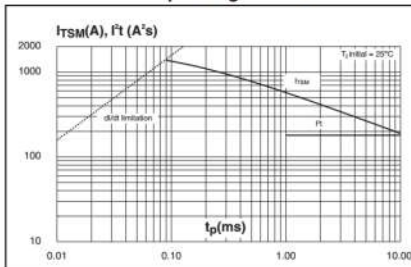


Figure 8. On-state characteristics (maximum values)

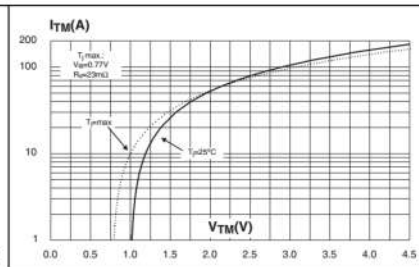
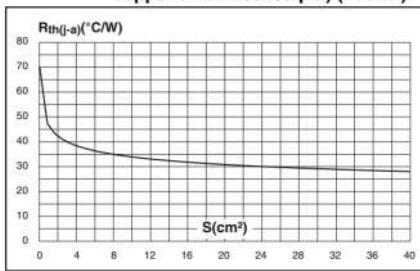


Figure 9. Thermal resistance junction to ambient versus copper surface under tab
(epoxy printed circuit board FR4, copper thickness: 35 μm) (D²PAK)

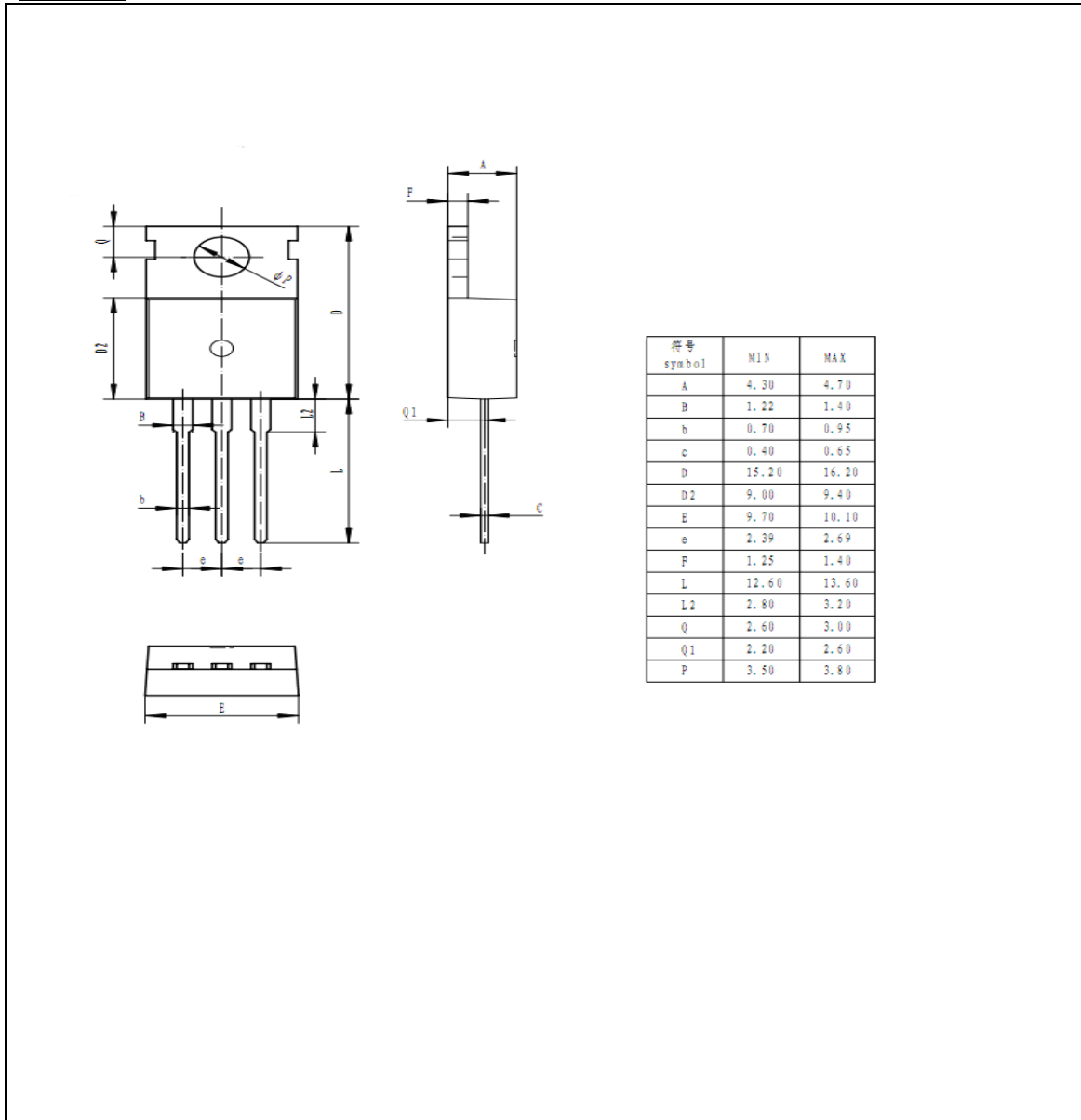




外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

单位 Unit : mm



单位 Unit : mm

附录 (Appendix) : 修订记录 (Revision History)

日期 Date	旧版本 Last Rev.	新版本 New Rev.	修订内容 Description of Changes
2016.9.14	201609A	201609B	dv/dt 原来标的是均值 500 V/μs, 修改为 MAX 为 1000 V/μs。
2016.9.24	201609B	201609C	dv/dt 修改为 MIN 为 500 V/μs; MAX 为 1000 V/μs。

