



# 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

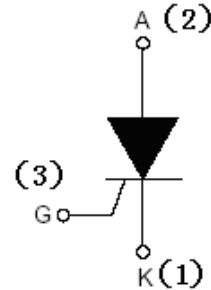
## APPLICATIONS

- Half AC switching
- Phase control

## FEATURES

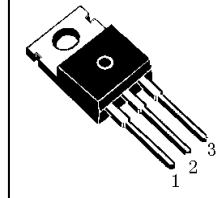
- Glass-passivated mesa chip for reliability and uniform
- Low on-state voltage and High  $I_{TSM}$
- RoHS products

## 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 codes				印记 Marking	封装 Package
有卤-袋装	无卤-袋装	有卤-条管	无卤-条管	3CT12B	TO-220C
Halogen-Bag	Halogen-Free-Bag	Halogen-Tube	Halogen-Free-Tube		
3CT12B-CA-C	3CT12B-CA-CR	3CT12B-CA-B	3CT12B-CA-BR		
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	$T_p = 8.3\text{ms}$	200	A	
		$T_p = 10\text{ms}$			190
$I^2t$	$I^2t$ 使用数值 $I^2t$ Value for using	$t = 10\text{ms}$	$T_c = 25^\circ\text{C}$	200	$\text{A}^2\text{s}$
$di/dt$	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	$\text{A}/\mu\text{s}$
$I_{GM}$	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	$^\circ\text{C}$
$T_j$	操作结温 Operation junction temperature range			-40 to +125	
$V_{RGM}$	Maximum peak reverse gate voltage			5	V

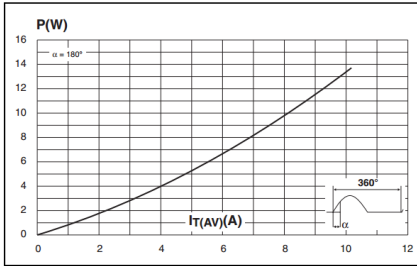


电特性 ELECTRICAL CHARACTERISTIC ( $T_C=25^\circ\text{C}$ )

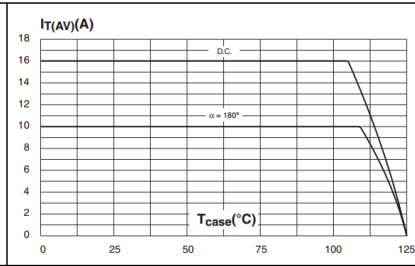
Symbol	Test Conductions		Value	Unit	
$I_{GT}$	$V_D=12V, R_L=33\ \Omega$		1	mA	
			25	mA	
$V_{GT}$			1.3	V	
$V_{GD}$	$V_D=V_{DRM}, R_L=3.3K\ \Omega$	$T_j=125^\circ\text{C}$	0.2	V	
$I_H$	维持电流 Holding current		40	mA	
$I_L$	擎住电流 Holding current		60	mA	
dV/dt	$V_{DM}=67\% V_{DRM}$ gate open	$T_j=125^\circ\text{C}$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



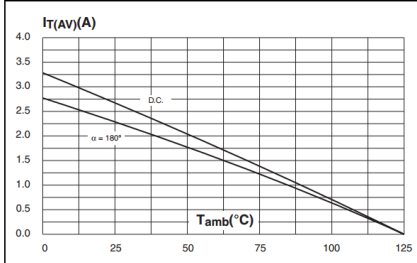
**Figure 1. Maximum average power dissipation versus average on-state current**



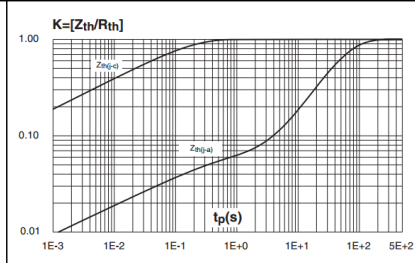
**Figure 2. Average and D.C. on-state current versus case temperature**



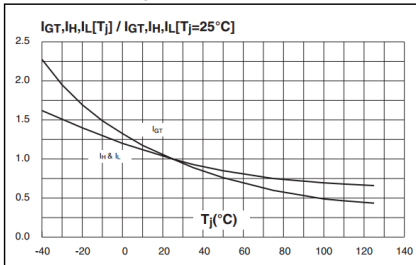
**Figure 3. Average and D.C. on-state current versus ambient temperature (copper surface under tab: S=1cm<sup>2</sup>) (D<sup>2</sup>PAK)**



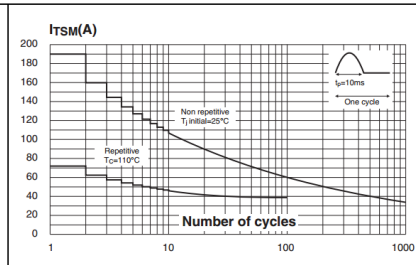
**Figure 4. Relative variation of thermal impedance versus pulse duration**



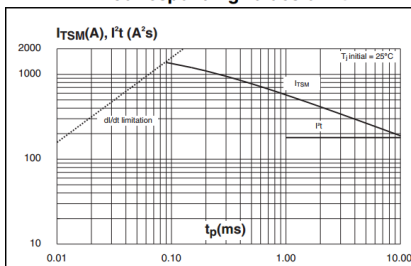
**Figure 5. Relative variation of gate trigger current, holding current and latching current versus junction temperature**



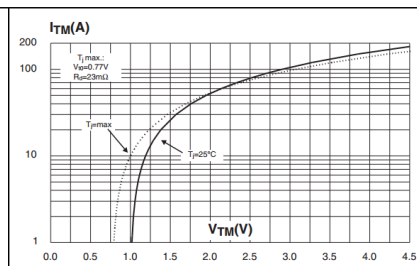
**Figure 6. Surge peak on-state current versus number of cycles**



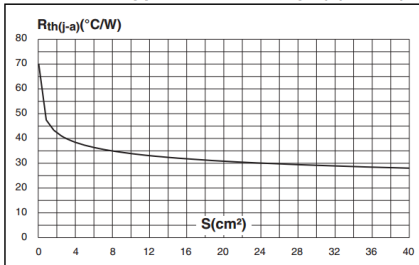
**Figure 7. Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10 ms, and corresponding values of I<sup>2</sup>t**



**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  $\mu\text{m}$ ) (D<sup>2</sup>PAK)

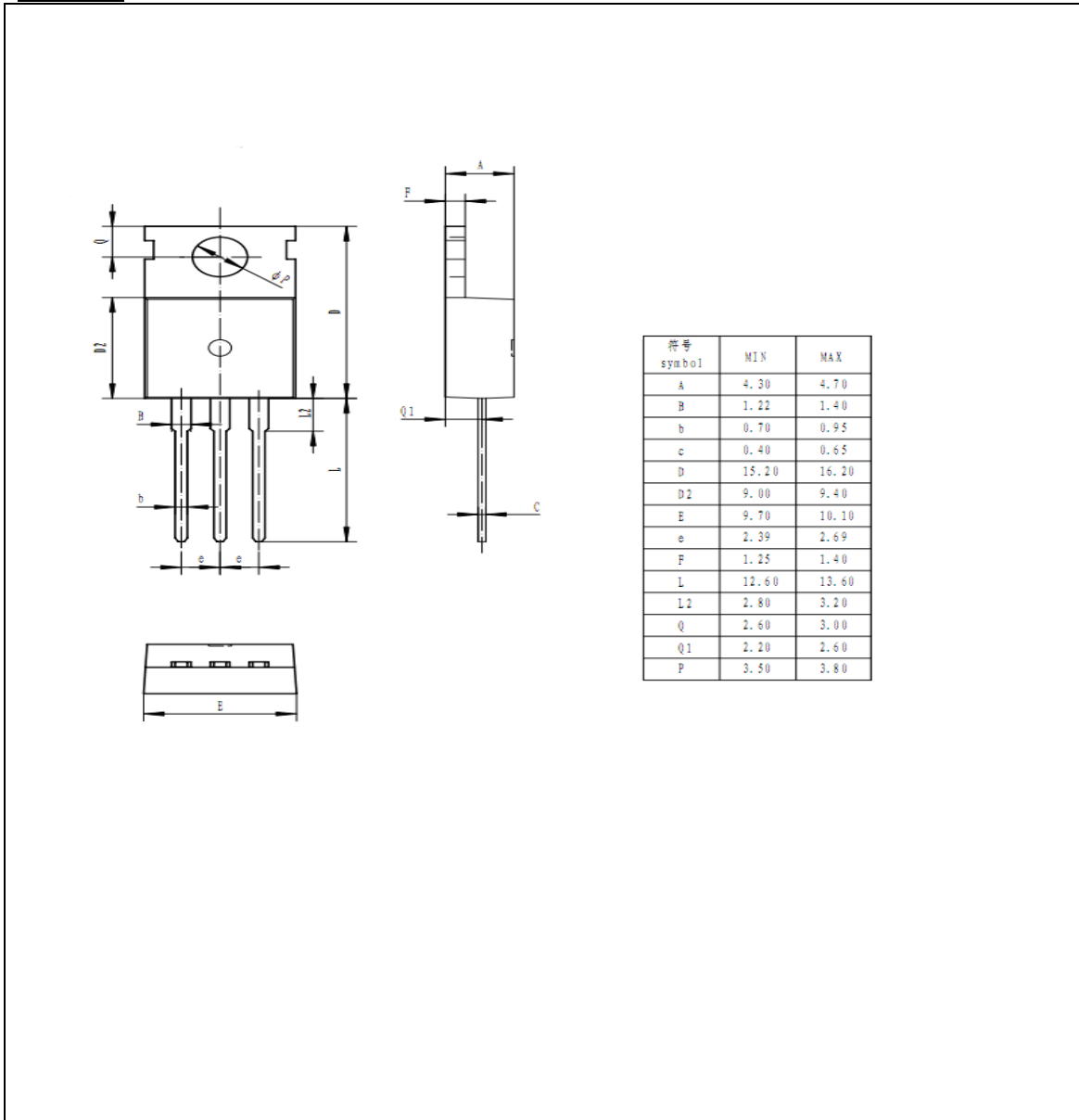




## 外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

单位 Unit : mm



单位 Unit : mm

