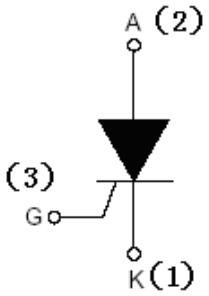
3CT12B

主要参数 MAIN CHARACTERISTICS

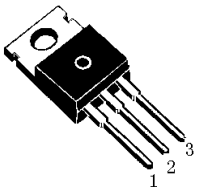
$I_{T(RMS)}$	16A
V_{DRM}/V_{RRM}	800V
I_{GT}	1-25mA

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



用途 APPLICATIONS

- 半交流开关 / Half AC switching
- 相位控制 / Phase control

产品特性 FEATURES

- 玻璃钝化芯片，高可靠性和一致性 / Glass-passivated mesa chip for reliability and uniform
- 低通态电流和高浪涌电流能力 / Low on-state voltage and High I_{TSM}
- 环保 RoHS 产品 / RoHS products

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 ^{0} Conduction angle)		Tc =110℃	16	A
$I_{T(AV)}$	通态平均电流 Average on-state current(180 ^{0} Conduction angle)		Tc =110℃	10	A
I_{TSM}	非重复浪涌峰值通态电流 Non-repetitive surge peak on-state current	Tp=8.3ms	Tc =25℃	200	A
		Tp=10ms		190	
I^2t	I^2t 使用数值 I^2t Value for using	t=10ms	Tc =25℃	200	A^2s
dI/dt	Critical rate of rise of on-state current $I_G=2\times I_{GT,}$ tr≤100ns	F=60Hz	Tc =125℃	50	A/us
I_{GM}	峰值门极电流 Peak gate current	Tp=20us	Tc =125℃	5	A
$P_{G(AV)}$	平均门极功率 Average gate power		Tc =125℃	1	W
T_{stg} T_j	存储温度 Storage junction temperature range 操作结温 Operation junction temperature range			-40 to +150 -40to +125	℃
V_{RGM}	Maximum peak reverse gate voltage			5	V

电特性 ELECTRICAL CHARACTERISTIC (T_C=25℃)

Symbol	Test Conductions		Value	Unit
I_{GT}	V_D=12V,RL=33Ω		1	mA
			25	mA
V_{GT}			1.3	V
V_{GD}	V_D=V_{DRM}, RL=3.3KΩ	T_j=125℃	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	Tj=125℃	MAX：1000	V/μs
V_{TM}	I_{TM}=32A Tp=380us	Tj=25℃	1.6	V
V_{tO}	Threshold voltage	Tj=125℃	0.77	V
R_d	Dynamic resistance	Tj=125℃	23	mΩ
I_{DRM} I_{RRM}	V_{DRM} =V_{RRM}	Tj=25℃	5	uA
		Tj=125℃	2	mA
Symboll	**Parameter**		**value**	**Unit**
$R_{th(j-c)}$	junction to case (DC)		1.1	℃/W
$R_{th(j-a)}$	junction to ambient (DC)		60	℃/W

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

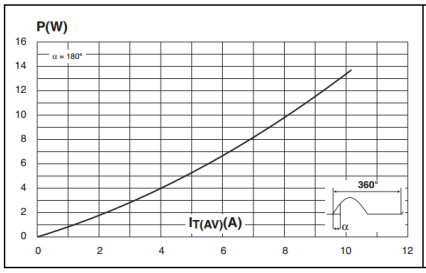


Figure 2. **Average and D.C. on-state current versus case temperature**

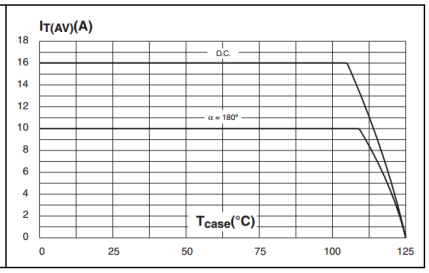


Figure 3. **Average and D.C. on-state current versus ambient temperature (copper surface under tab: S=1cm^2) (D^{2}PAK)**

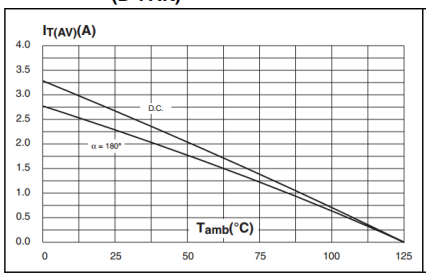


Figure 4. **Relative variation of thermal impedance versus pulse duration**

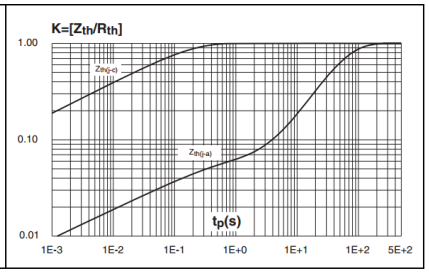


Figure 5. **Relative variation of gate trigger current, holding current and latching current versus junction temperature**

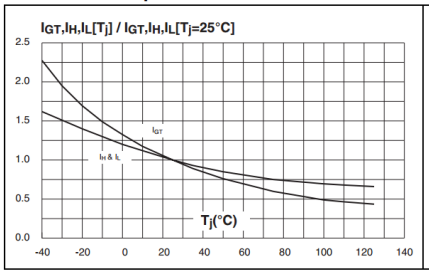


Figure 6. **Surge peak on-state current versus number of cycles**

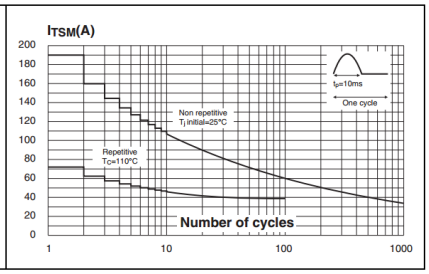


Figure 7. **Non-repetitive surge peak on-state current for a sinusoidal pulse with width t_p < 10 ms, and corresponding values of I^2t**

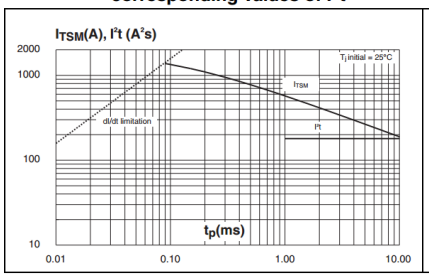


Figure 8. **On-state characteristics (maximum values)**

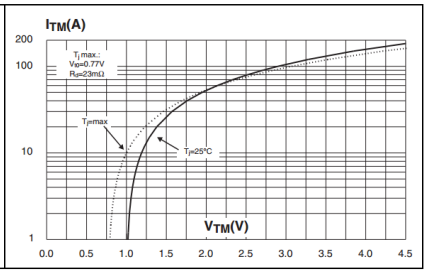
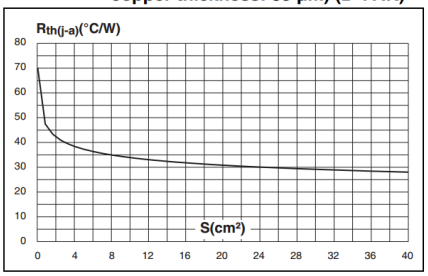


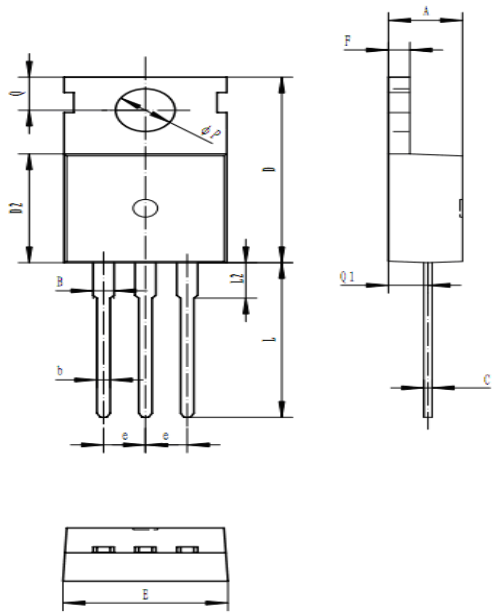
Figure 9. **Thermal resistance junction to ambient versus copper surface under tab (epoxy printed circuit board FR4, copper thickness: 35 µm) (D^2PAK)**



外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

单位 Unit ： mm



符号 symbol	MIN	MAX
A	4.30	4.70
B	1.22	1.40
b	0.70	0.95
c	0.40	0.65
D	15.20	16.20
D2	9.00	9.40
E	9.70	10.10
e	2.39	2.69
F	1.25	1.40
L	12.60	13.60
L2	2.80	3.20
Q	2.60	3.00
Q1	2.20	2.60
P	3.50	3.80

单位 Unit ： mm

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