双向晶闸管
TRIACS

T0435N（U、Z、F）

主要参数 MAIN CHARACTERISTICS

$I_{T(RMS)}$	4A
V_{DRM}	800V
I_{GT}	35mA

用途 APPLICATIONS

- 交流开关
- 相位控制

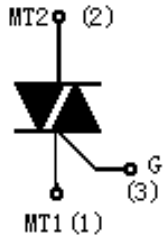
- AC switching
- Phase control

产品特性 FEATURES

- 玻璃钝化芯片，高可靠性和一致性
- 三象限可控硅，触发电流的一致性好
- 环保 RoHS 产品

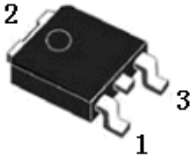
- Glass-passivated mesa chip for reliability and uniform
- Uniform gate trigger currents in three quadrants
- RoHS products

封装 Package

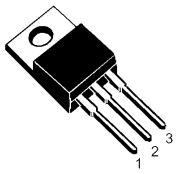


序号 Pin	引线名称 Description
1	主电极 1 MT1
2	主电极 2 MT2
3	门极 G

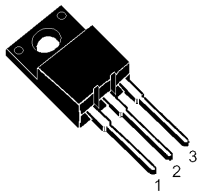
DPAK



TO-220



TO-220HF



订货信息 ORDER MESSAGES

订货型号 Order code	印记 Marking	封装 Package	包装 Packaging	器件重量 Device Weight
T0435NU-O-U-B-A	T0435NU	DPAK	编带 Tape	0.36g（typ）
T0435NZ-O-Z-N-B	T0435NZ	TO-220	条管 Tube	2.03g（typ）
T0435NF-O-HF-N-B	T0435NF	TO-220HF	条管 Tube	2.00g（typ）

概述 GENERAL DESCRIPTION

T0435N（U、Z、F）是玻璃钝化芯片结构的三象限双向晶闸管，产品在第四象限不可触发，具有较高的使用可靠性。可适用于容易出现较高dV/dt或dI/dt的交流全波控制线路中，特别推荐应用与电感性负载控制（如电机控制线路）。器件封装形式有DPAK、TO-220、TO-220HF。

T0435N（U、Z、F） are Glass passivated three quadrant triacs, designed for high performance full-wave ac control applications where high static and dynamic dV/dt and high dI/dt can occur. They are specially recommended for use on inductive loads such as motor control circuits. Available packages are DPAK、TO-220、TO-220HF.

绝对最大额定值 ABSOLUTE RATINGS (T_C=25℃)

项 目 Parameter	符 号 Symbol	试 验 条 件 Condition	数 值 Value	单位 Unit
重复峰值断态电压 Repetitive peak off-state voltage	V_{DRM}		±800	V
通态方均根电流 On-state RMS current	$I_{T(RMS)}$	full sine wave	4	A
非重复浪涌峰值通态电流 Non-repetitive surge peak on-state current	I_{TSM}	full sine wave ,t=20ms	25	A
		full sine wave ,t=16.7ms	27	A
	I^2t	t=10ms	3.1	A^2s
通态电流临界上升率 Repetitive rate of rise of on-state current after triggering	dI/dt	I_{TM}=6A, I_G=0.2A, dI_G/dt=0.2A/μs	100	A/μs
峰值门极电流 Peak gate current	I_{GM}		2	A
峰值门极电压 Peak gate voltage	V_{GM}		5	V
峰值门极功率 Peak gate power	P_{GM}		5	W
平均门极功率 Average gate power	$P_{G(AV)}$	over any 20ms period	0.5	W
存储温度 Storage temperature	T_{stg}		-40~150	℃
操作结温 Operation junction temperature	T_{VJ}		125	℃

电特性 ELECTRICAL CHARACTERISTIC (T_C=25℃)

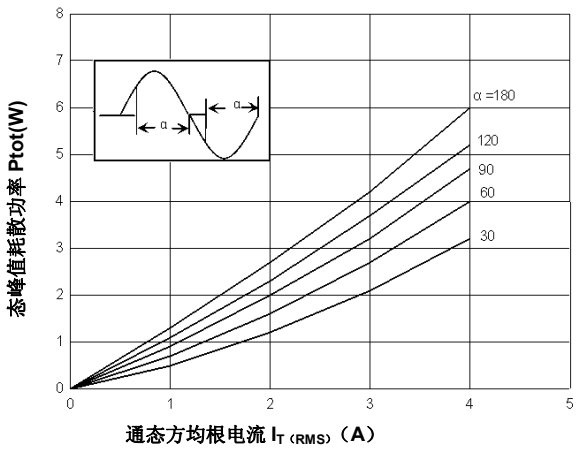
项　　目 Parameter	符　号 Symbol	测 试 条 件 Condition		最小 Min	典型 Typ	最大 Max	单位 Unit
峰值重复断态电流 Peak Repetitive Blocking Current	I_{DRM}	V_{DM}=800V, Tj=125℃, gate open		-	-	0.5	mA
峰值通态电压 Peak on-state voltage	V_{TM}	I_{TM}=5A		-	1.4	1.7	V
门极触发电流 Gate trigger current	I_{GT}	V_{DM}=12V, R_L=100Ω	MT1(-),MT2(+),G(+)	2	-	35	mA
			MT1(-),MT2(+),G(-)	2	-	35	mA
			MT1(+),MT2(-),G(-)	2	-	35	mA
门极触发电压 Gate trigger voltage	V_{GT}	V_{DM}=12V, R_L=100Ω	MT1(-),MT2(+),G(+)	-	0.7	1.5	V
			MT1(-),MT2(+),G(-)	-	0.7	1.5	V
			MT1(+),MT2(-),G(-)	-	0.7	1.5	V
维持电流 Holding current	I_H	V_{DM}=12V, I_{GT}=0.1A		-	-	30	mA
擎住电流 Latching current	I_L	V_{DM}=12V, I_{GT}=0.1A	MT1(-),MT2(+),G(+)	-	-	30	mA
			MT1(-),MT2(+),G(-)	-	-	45	mA
			MT1(+),MT2(-),G(-)	-	-	30	mA
断态临界电压上升率 Rise of off- state voltage	dV/dt	V_{DM}=67% $V_{DRM(MAX)}$, Tj=125℃, gate open		1000	-	-	V/μs
门极开通时间 Gate controlled turn-on time	tgt	I_{TM}=6A, V_{DM}=$V_{DRM(MAX)}$, I_G=0.1A, dI_G/dt=5A/μS		-	2	-	Ms

热特性 THERMAL CHARACTERISTIC

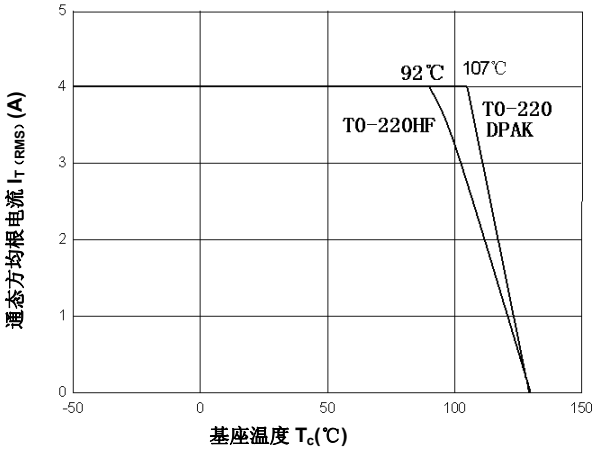
项　　目 Parameter	符　号 Symbol	条　　件 Condition	最小 Min	典型 Typ	最大 Max	单位 Unit
结到管壳的热阻 Thermal resistance junction to case	$R_{th(j-c)}$	full cycle(DPAK、TO-220)			3.0	℃/W
结到管壳的热阻 Thermal resistance junction to case	$R_{th(j-c)}$	full cycle(TO-220HF)			5.5	℃/W

特征曲线 ELECTRICAL CHARACTERISTICS (curves)

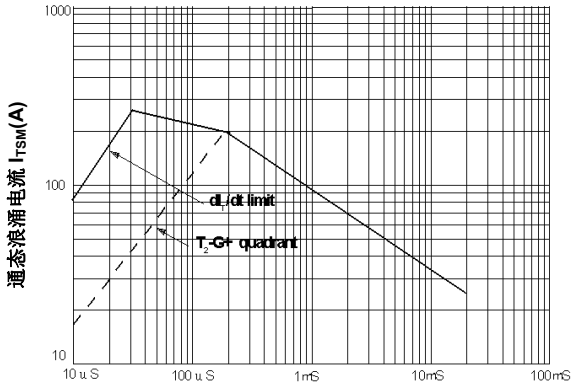
P_{tot}- $I_{T(RMS)}$



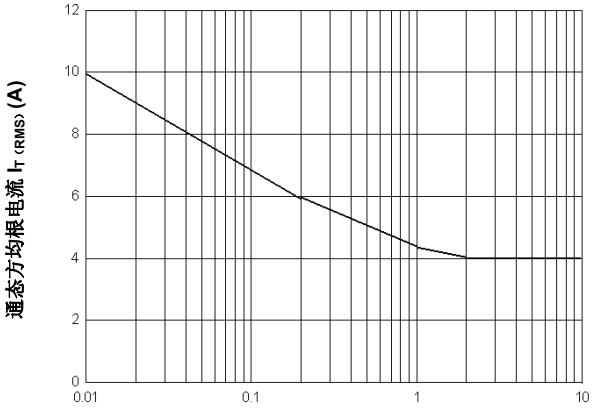
$I_{T(RMS)}$ – T_c



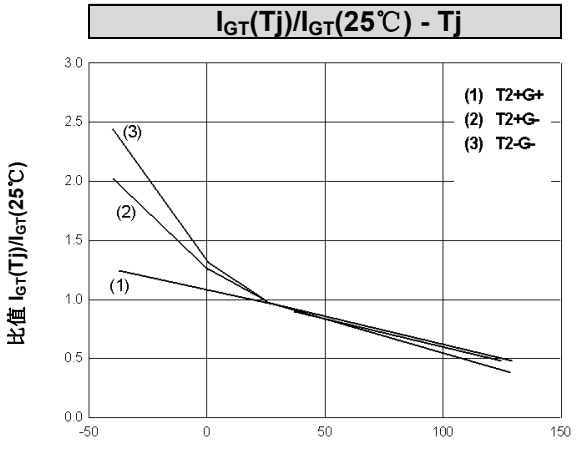
I_{TSM} - tp



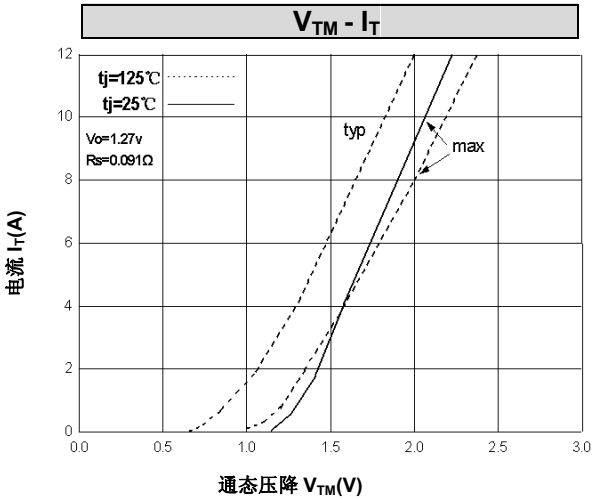
$I_{T(RMS)}$- ts



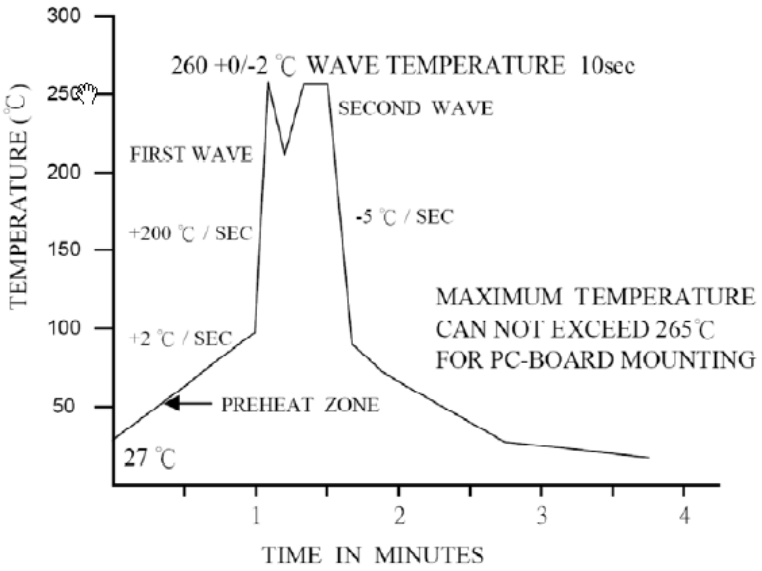
$I_{GT}(Tj)/I_{GT}(25℃)$ - Tj



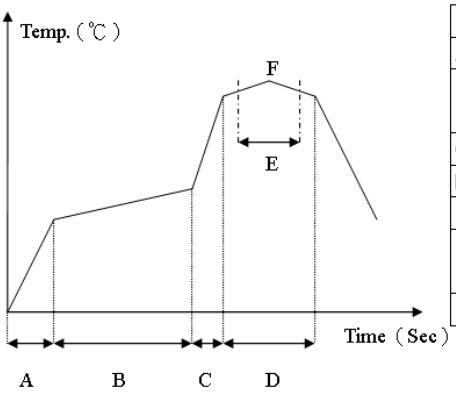
V_{TM} - I_T



回流焊（或波峰焊）曲线 REFLOW & WAVE SOLDER THERMAL PROFILE



Reflow Heat-resisting Temperature Condition



Profile Condition			Unit
A	Ramp Up	1~3	℃/Sec
B	Heat Time	60~180	Sec
	Heat Temp.	150~200	℃
C	Ramp Up	1~3	℃/Sec
D	Temp. Over 217℃	60~150	Sec
E	Temp. Over 245℃	20~40	Sec
F	Peak Temperature	260	℃
	Peak Hold Time	10	Sec
No of Time		2	Times

Dip Soldering

Flow soldering with bath.Flow soldering condition : 265 +5/-5℃ 10±0.5 Sec.

Times: 3 times

Hand Soldering

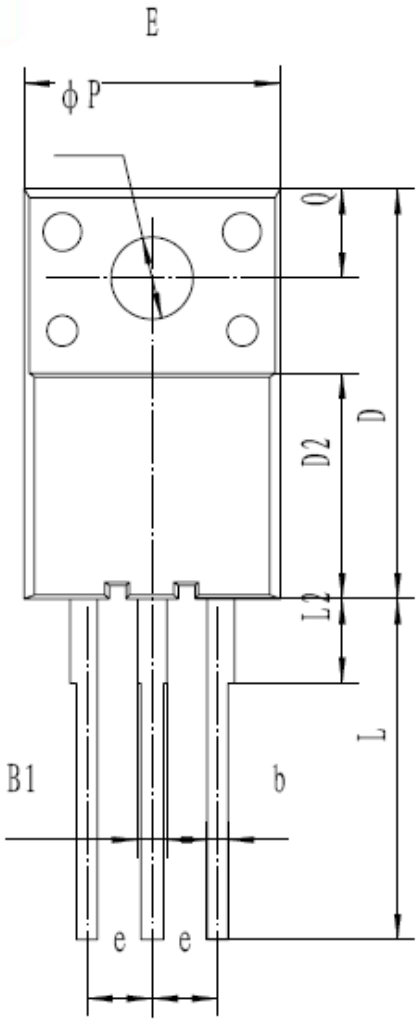
With soldering iron：380℃ 3±0.5 Sec

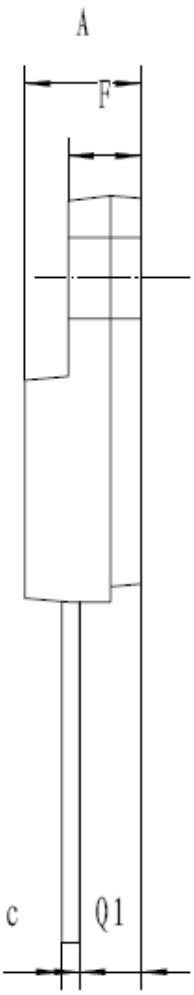
Times: 2 times

外形尺寸 PACKAGE MECHANICAL DATA

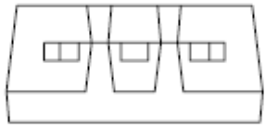
TO-220HF

单位 Unit ：mm





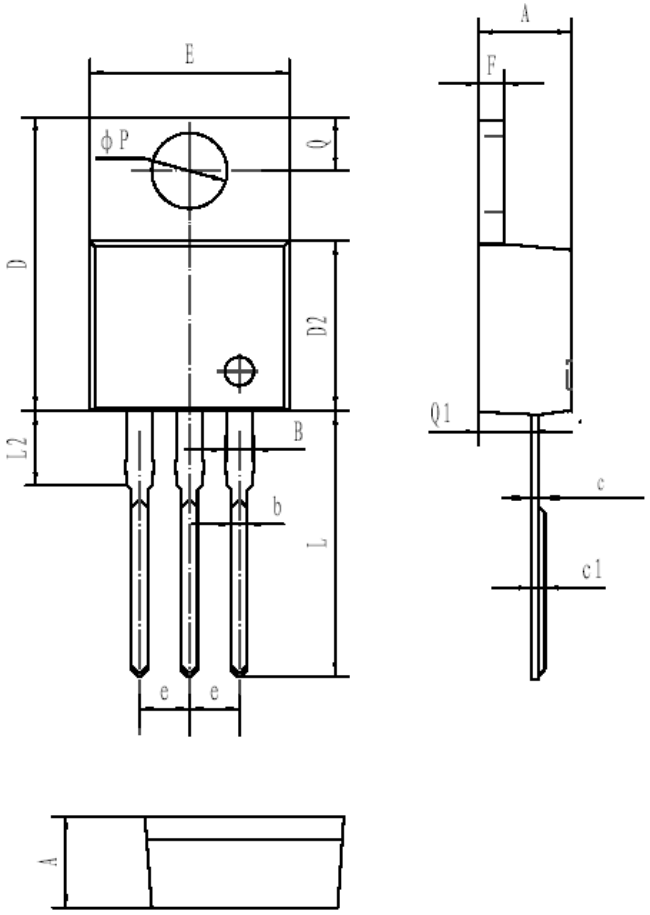
符号 symbol	MIN	MAX
A	4.0	5.0
B1	0.87	1.27
b	0.72	0.92
c	0.5	0.7
D	15.0	16.5
D2	7.8	9.4
E	9.62	10.62
e	2.54 TYP	
F	2.3	3.3
L	13.0	14.0
L2	3.1	3.5
ϕP	3.0	3.4
Q	3.15	3.55
Q1	2.2	2.5



外形尺寸 **PACKAGE MECHANICAL DATA**

TO-220

单位 **Unit ： mm**

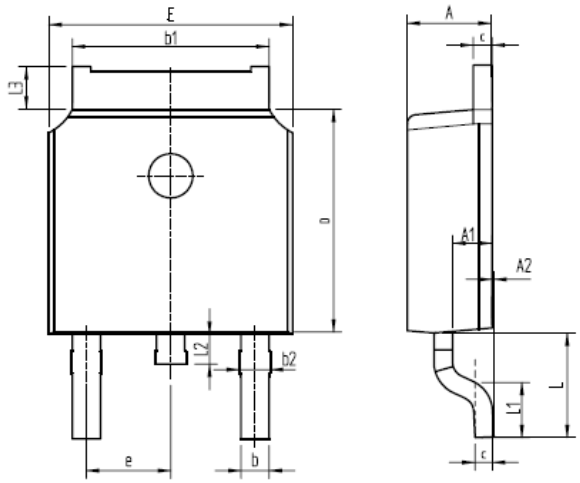


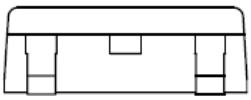
符号 symbol	MIN	MAX
A	4.40	4.80
B	1.10	1.40
b	0.70	0.95
c	0.28	0.48
c1	0.32	0.52
D	14.45	16.00
D2	8.20	9.20
E	9.60	10.40
e	2.39	2.69
F	1.20	1.35
L	13.05	14.05
L2	3.70	3.90
Q	2.40	3.00
Q1	2.20	2.90
P	3.50	4.00

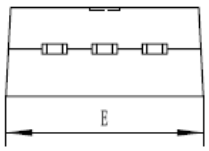
外形尺寸 PACKAGE MECHANICAL DATA

DPAK

单位 Unit ： mm







SYMBOL	mm	
	MIN	MAX
A	2.16	2.41
A1	0.97	1.17
A2	0.00	0.15
b	0.63	0.93
b1	5.13	5.53
b2	0.66	0.96
c	0.40	0.60
D	5.80	6.40
E	6.30	6.90
e	2.286BSC	
L	2.50	3.30
L1	1.20	1.80
L2	0.60	1.00
L3	0.85	1.30