CS825N3C

主要参数 MAIN CHARACTERISTICS

$I_{T(RMS)}$	8A
V_{DRM}	800V
I_{GT}	45mA

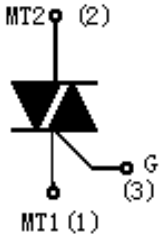
用途 APPLICATIONS

- 交流开关
- 相位控制
- AC switching
- Phase control

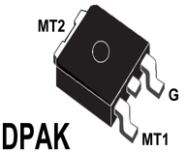
产品特性 FEATURES

- 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

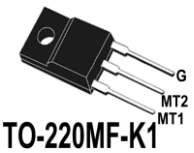


序号 Pin	引线名称 Description
1	主电极 1 MT1
2	主电极 2 MT2
3	门极 G

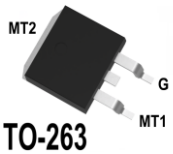


DPAK

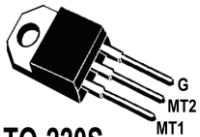
TO-220C



TO-220MF-K1



TO-263



TO-220S

订货信息 ORDER MESSAGES

订货型号 Order codes		订货型号 Order codes	订货型号 Order codes
无卤-编带	有卤-编带	CS825N3C	DPAK
Halogen-Free- Reel	Halogen-Reel		
CS825N3C-R-AR	CS825N3C-R-A		
有卤-条管	无卤-条管	CS825N3C	TO-220MF-K1
Halogen-Tube	Halogen-Free- Tube		
CS825N3C-F1-B	CS825N3C-F1-BR		
有卤-条管	无卤-条管	CS825N3C	TO-220C
Halogen-Tube	Halogen-Free- Tube		
CS825N3C-CA-B	CS825N3C-CA-BR		
有卤-条管	无卤-条管	CS825N3C	TO-220S
Halogen-Tube	Halogen-Free- Tube		
CS825N3C-CB-B	CS825N3C-CB-BR		
有卤-条管	无卤-条管	CS825N3C	TO-263
Halogen-Tube	Halogen-Free-Tube		
CS825N3C-S-B	CS825N3C-S-BR		

概述 GENERAL DESCRIPTION

CS825N3C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-220MF-K1、TO-220C、TO-220S和TO-263。

CS825N3C 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-220MF-K1、TO-220C、TO-220S and TO-263.

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	8	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	80	A
		full sine wave ,t=16.7ms	84	A
	I^2t	t=10ms	32	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}=12A, I_G=0.2A, dI_G/dt=0.2A/μs	100	A/μs
峰值门极电流 Peak gate current	I_{GM}		4	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℃)

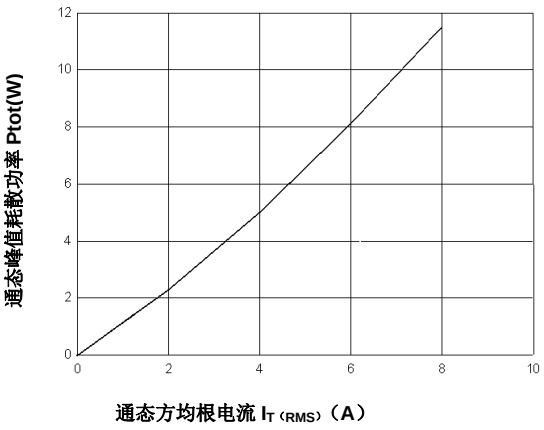
项 目 Parameter	符 号 Symbol	测 试 条 件 Condition		最小 Min	典型 Typ	最大 Max	单位 Unit
峰值重复断态电流 Peak Repetitive Blocking Current	I_{DRM}	V_{DM}=V_{DRM}, Tj=125℃, gate open		-	-	0.5	mA
峰值通态电压 Peak on-state voltage	V_{TM}	I_{TM}=11.3A		-	1.3	1.7	V
门极触发电流 Gate trigger current	I_{GT}	V_{DM}=12V, R_L=100Ω	MT1(-),MT2(+),G(+)	8	-	45	mA
			MT1(-),MT2(+),G(-)	8	-	45	mA
			MT1(+),MT2(-),G(-)	15	-	45	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		-	-	60	mA
擎住电流 Latching current	I_L	V_{DM}=12V,I_{GT}=0.1A		-	-	80	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}=12A, V_{DM}=$V_{DRM(MAX)}$, I_G=0.1A, dI_G/dt=5A/μS		-	2	-	μs

热特性 THERMAL CHARACTERISTIC

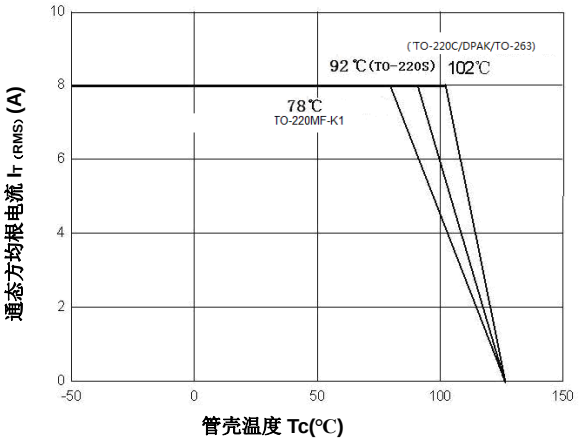
项 目 Parameter	符 号 Symbol	条 件 Condition	最小 Min	典型 Typ	最大 Max	单位 Unit
结到管壳的热阻 Thermal resistance junction to case	$R_{th(j-c)}$	Full cycle (DPAK/TO-220C/TO-263)			2.0	℃/W
		Full cycle (TO-220S)			2.8	℃/W
		Full cycle (TO-220MF-K1)			4.1	℃/W

征曲线 ELECTRICAL CHARACTERISTICS (curves)

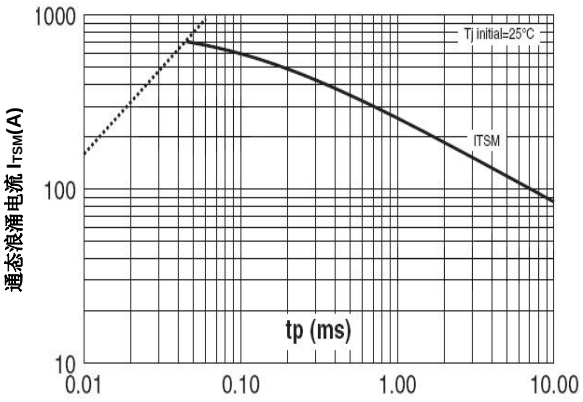
P_{tot}- $I_{T(RMS)}$



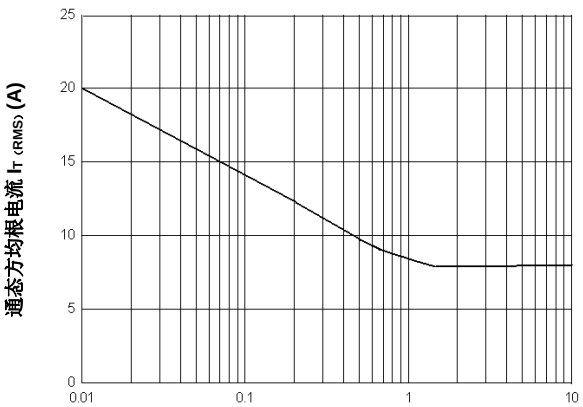
$I_{T(RMS)}$ – T_C



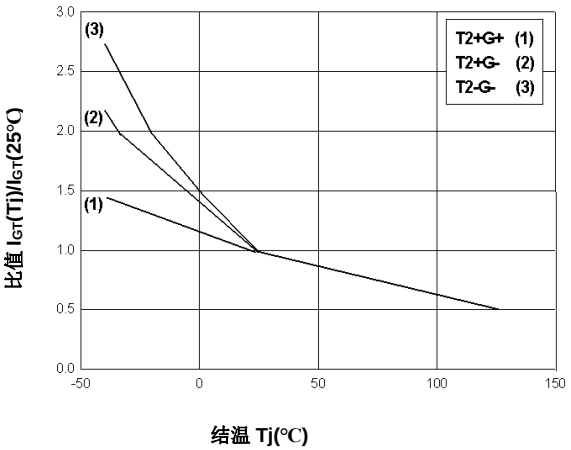
I_{TSM} – tp



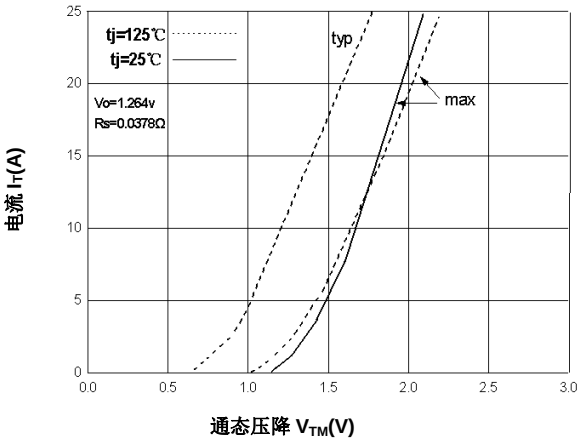
$I_{T(RMS)}$- ts



$I_{GT}(Tj)/I_{GT}(25℃)$ – Tj

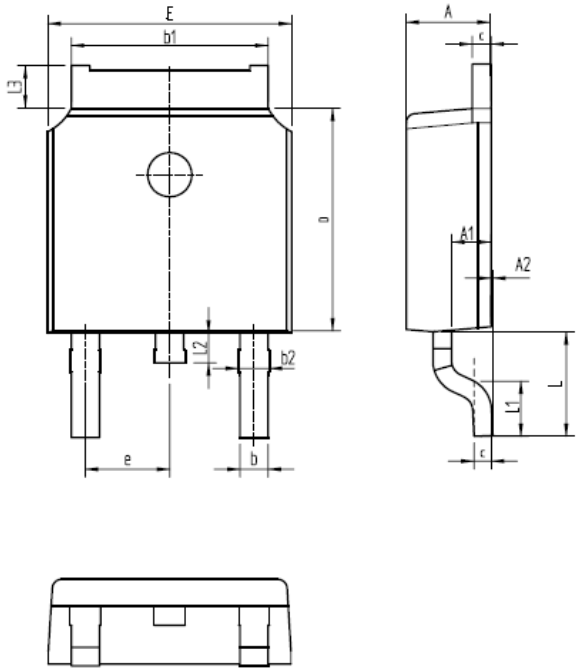


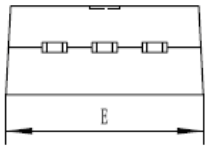
V_{TM} – I_T



外形尺寸 **PACKAGE MECHANICAL DATA**

DPAK **单位 Unit ： mm**



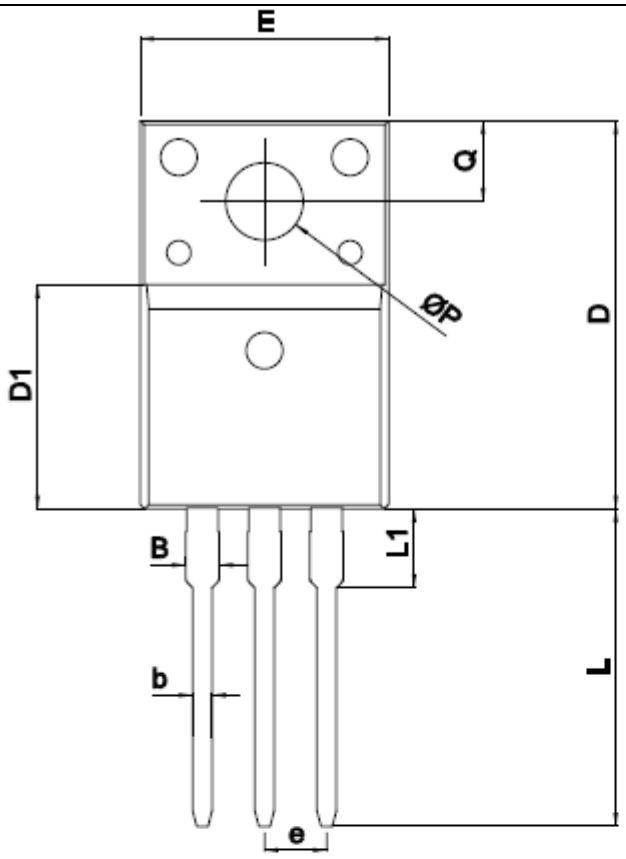


SYMBOL	mm	
	MIN	MAX
A	2.16	2.41
A1	0.97	1.17
A2	0.00	0.15
b	0.63	0.93
b1	5.13	5.53
b2	0.66	0.96
c	0.40	0.60
D	5.80	6.40
E	6.30	6.90
e	2.286BSC	
L	2.50	3.30
L1	1.20	1.80
L2	0.60	1.00
L3	0.85	1.30

外形尺寸 PACKAGE MECHANICAL DATA

TO-220MF-K1

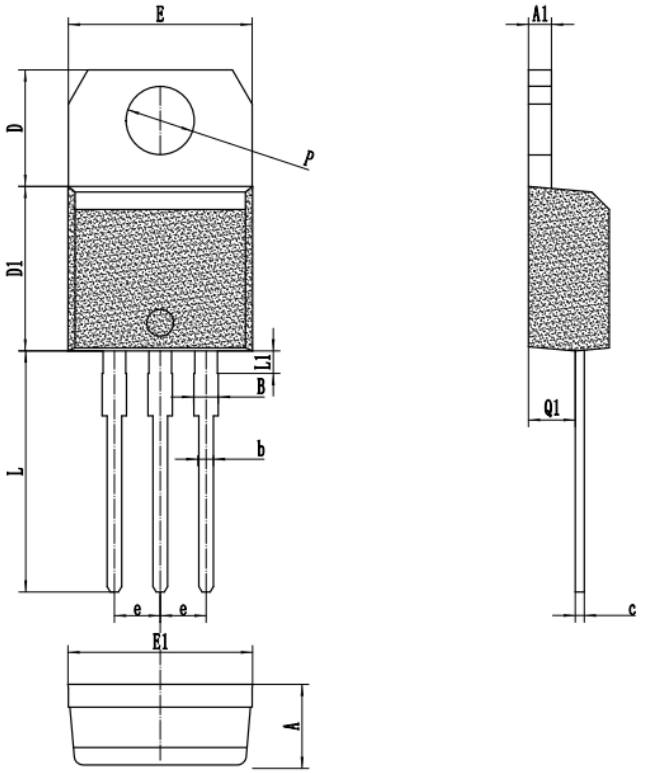
单位 Unit ： mm



SYMBOL	mm	
	MIN	MAX
A	4.5	4.9
B	1.22	1.47
b	0.7	0.9
c	0.45	0.60
D	15.6	16.1
D1	9.0	9.3
e	2.54TYPE	
E	9.9	10.4
F	2.3	2.8
L	12.6	13.3
L1	3.1	3.4
Q	3.2	3.4
Q1	2.6	2.9
ΦP	3.0	3.5

外形尺寸 PACKAGE MECHANICAL DATA

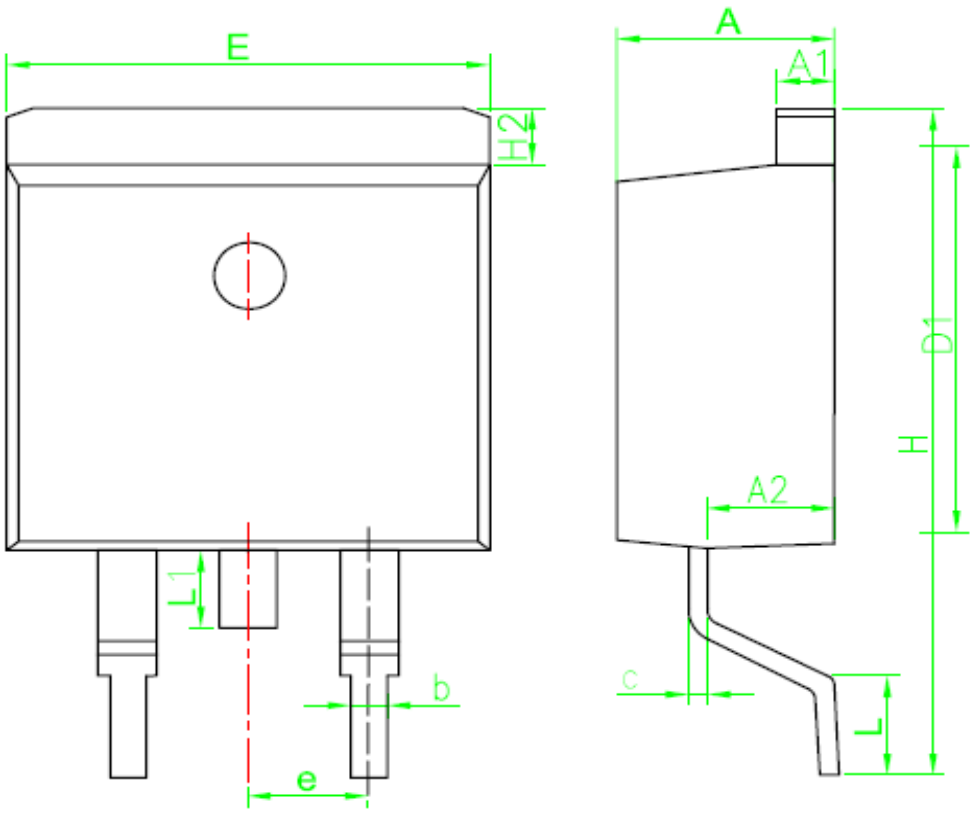
TO-220S **单位 Unit ： mm**



SYMBOL	mm	
	MIN	MAX
*A	4.37	4.57
*A1	1.20	1.34
B	1.20	1.50
*b	0.70	0.90
*c	0.40	0.60
*D	6.35	6.55
*D1	9.00	9.20
*E	10.08	10.28
*E1	10.12	10.32
*e	2.44	2.64
*L	13.15	13.55
L1	1.10	1.40
*Q1	2.45	2.73
*P	3.70	3.90

外形尺寸 PACKAGE MECHANICAL DATA

TO-263 **单位 Unit ： mm**

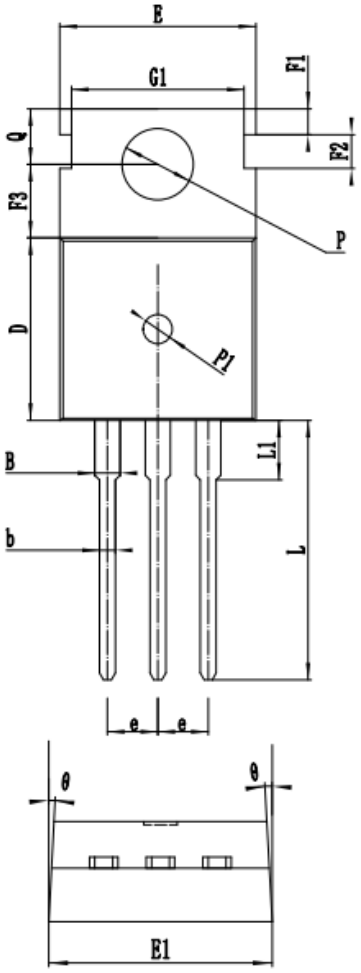


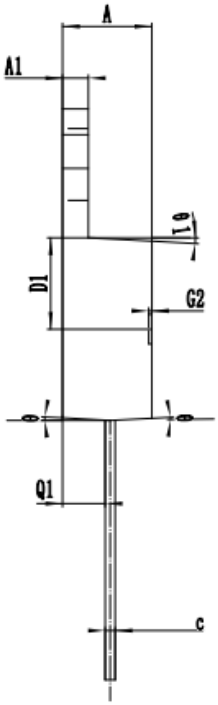
SYMBOL	MM	
	MIN	MAX
A	4.30	4.80
A1	1.12	1.42
A2	2.54	2.84
b	0.67	1.00
c	0.29	0.52
D1	8.40	9.00
E	9.80	10.46
e	2.54BSC	
H	14.00	16.00
H2	1.12	1.45
L	1.50	3.10
L1	1.45	1.70

外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

单位 Unit ：mm





符号 symbol	MIN	NOM	MAX
*A	4.400	4.500	4.600
*A1	1.290	1.300	1.380
*B	1.220	1.270	1.370
*b	0.760	0.800	0.900
*c	0.450	0.500	0.600
*D	9.100	9.200	9.300
*D1	4.500	4.600	4.700
*E	9.780	9.880	10.050
*E1	9.920	10.020	10.120
e	2.480	2.540	2.600
F1	1.220	1.300	1.380
F2	1.600	1.700	1.800
*F3	3.600	3.700	3.800
G1	8.600	8.700	8.800
G2	0.100	0.150	0.200
*L	12.980	13.080	13.230
L1	2.900	3.000	3.100
*ΦP	3.540	3.650	3.670
ΦP1	1.400	1.500	1.600
Q	2.700	2.800	2.900
*Q1	2.300	2.400	2.500
θ	1°	3°	5°
*θ1	1°	3°	5°

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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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