CS1615M1A

主要参数 MAIN CHARACTERISTICS

$I_{T(RMS)}$	16A
V_{DRM}/V_{RRM}	600V/800V
I_{GT}	1-15mA

用途

- 半交流开关
- 相位控制

APPLICATIONS

- Half AC switching
- Phase control

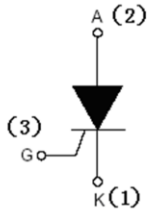
产品特性

- 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

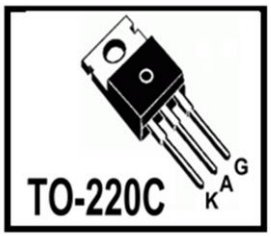
FEATURES

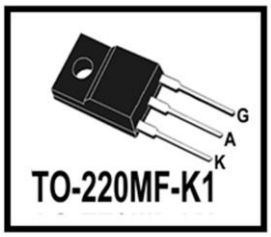
- Glass-passivated mesa chip for reliability and uniform
- Low on-state voltage and High I_{TSM}
- RoHS products

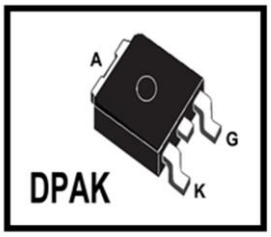
封装 Package

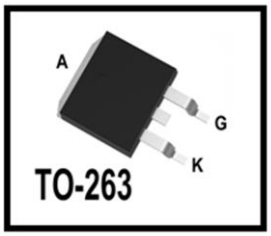


序号 Pin	引线名称 Description	
1	阴极	K
2	阳极	A
3	门极	G









订货信息 ORDER MESSAGE

订 货 型 号 Order codes		印 记 Marking	封 装 Package
有卤-条管	无卤-条管		
Halogen-Tube	**halogen-Free-Tube**		
CS1615M1A-C-B	**CS1615M1A-C-BR**	CS1615M1A	TO-220C
有卤-条管	无卤-条管	CS1615M1A	TO-220MF -K1
Halogen-Tube	**halogen-Free-Tube**		
CS1615M1A-F1-B	**CS1615M1A-F1-BR**		
有卤-条管	无卤-条管	CS1615M1A	TO-263
Halogen-Tube	**halogen-Free-Tube**		
CS1615M1A-S-B	**CS1615M1A-S-BR**		
有卤-编带	无卤-编带	CS1615M1A	DPAK
Halogen-Reel	**Halogen-Free-Reel**		
CS1615M1A-R-A	**CS1615M1A-R-AR**		
有卤-编带	无卤-编带	CS1615M1A	TO-263
Halogen-Reel	**Halogen-Free-Reel**		
CS1615M1A-S-A	**CS1615M1A-S-AR**		

绝对最大额定值 ABSOLUTE RATINGS (Tc=25℃)

项 目 Parameter	符 号 Symbol	数 值 Value	单 位 Unit
断态重复峰值电压 Repetitive peak off-state voltage	V_{DRM}	600/800	V
反向重复峰值电压 Repetitive peak reverse voltage	V_{RRM}	600/800	V
通态平均电流 Average on-state current (half sine wave)	$I_{T(AV)}$	10	A
通态方均根电流 On-state RMS current (all conduction angles)	$I_{T(RMS)}$	16	A
非重复浪涌峰值通态电流 Non- repetitive surge peak on-state current (half sine wave ,t=10ms)	I_{TSM}	200	A
I^2t for fusing (t=10ms)	I^2t	200	A^2s
门极峰值电流 Peak gate current	I_{GM}	5	A
门极峰值电压 Peak gate voltage	V_{GM}	5	V
反向门极峰值电压 Peak reverses gate voltage	V_{RGM}	5	V
门极峰值功率 Peak gate power	P_{GM}	20	W
门极平均功率 Average gate power (over any 20ms period)	$P_{G(AV)}$	0.5	W
存储温度 Storage temperature	T_{stg}	-40~150	℃
操作结温 Operation junction temperature	T_{VJ}	-40~150	℃

静态特性 STATIC CHARACTERISTICS (T_C=25℃ unless otherwise stated)

项 目 Parameter	符号 Symbol	测试条件 Tests conditions	最小 min	典型 typ	最大 max	单位 Unit
断态峰值重复电流 Peak Repetitive Blocking Current	I_{DRM}	V_{DM}= $V_{DRM(MAX)}$, Tj=150℃	-	-	4.0	mA
反向峰值重复电流 Peak Repetitive Reverse Current	I_{RRM}	V_{RM}= $V_{RRM(MAX)}$, Tj=150℃	-	-	4.0	mA
峰值通态电压 Peak on-state voltage	V_{TM}	I_{TM}=40A	-	1.45	1.75	V
门极触发电流 Gate trigger current	I_{GT}	V_{DM}=12V,I_T=0.1A	1	5	15	mA
门极触发电压 Gate trigger voltage	V_{GT}	V_{DM}=12V,I_T=0.1A	-	0.8	1.5	V
维持电流 Holding current	I_H	V_{DM}=12V, I_{GT}=0.1A	-	-	40	mA
擎住电流 Latching current	I_L	V_{DM}=12V, I_{GT}=0.1A	-	-	60	mA

动态特性 DYNAMIC CHARACTERISTICS (T_C=25℃ unless otherwise stated)

项　　目 Parameter	符号 Symbol	测试条件 Tests conditions	最小 min	典型 typ	最大 max	单位 Unit
断态临界电压上升率 Critical rate of rise of off- state voltage	dV/dt	V_{DM}=67% $V_{DRM(MAX)}$, Tj=150℃	200		-	V/μs

热特性 THERMAL CHARACTERISTIC

项　　目 Parameter		符　号 Symbol	值 value	单位 Unit
结到管壳的热阻 Thermal resistance junction to case	TO-220C\TO-263	$R_{th(j-c)}$	1.3 max	℃/W
	DPAK	$R_{th(j-c)}$	1.8 max	
结到散热片的热阻 Thermal resistance junction to heatsink	TO-220MF-K1	$R_{th(j-hs)}$	4.5 max	
结到环境的热阻 Thermal resistance junction to ambient (half cycle)		$R_{th(j-a)}$	60 typ	

特征曲线　ELECTRICAL CHARACTERISTICS (curves)

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

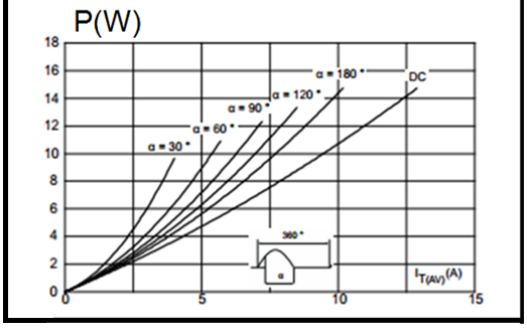


Figure 2. Average and DC on-state current versus case temperature

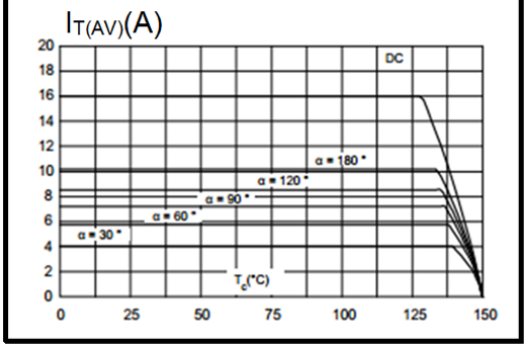


Figure 3.Normalized gate trigger current as a function of junction temperature

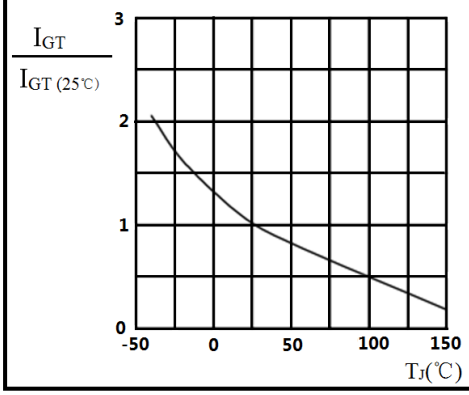


Figure 4.Normalized gate trigger voltage as a function of junction temperature

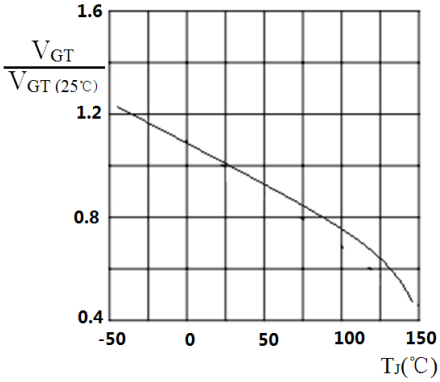


Figure 5.Normalized latching current as a function of junction temperature

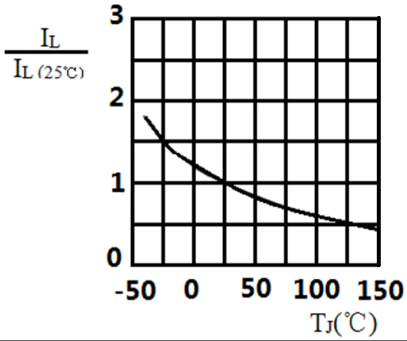
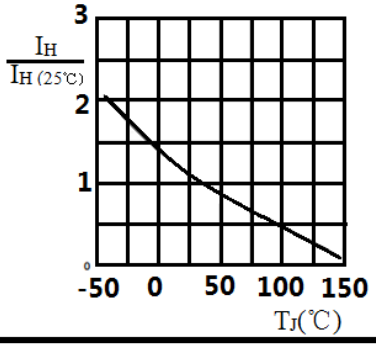


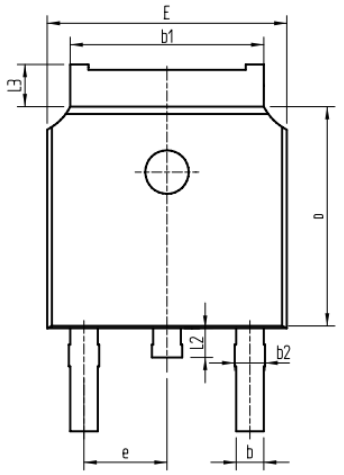
Figure 6.Normalized holding current as a function of junction temperature

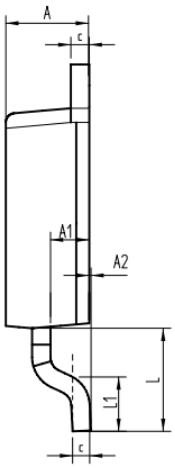


外形尺寸 PACKAGE MECHANICAL DATA

DPAK

单位 Unit ： mm

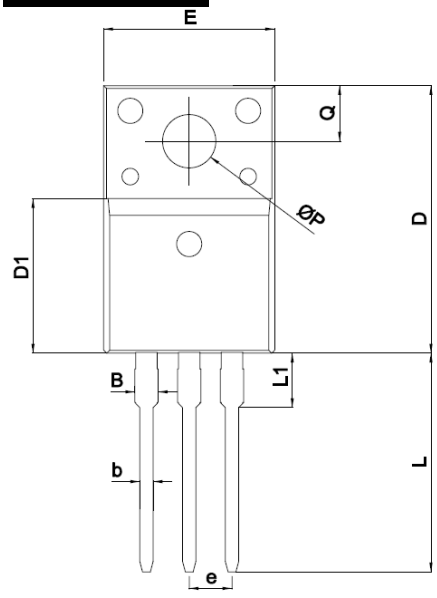


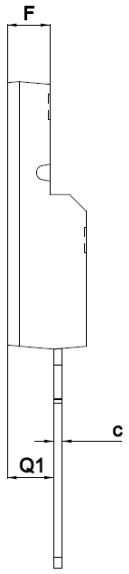


A	2.16-2.41
A1	0.97-1.17
A2	0.00-0.15
b	0.63-0.93
b1	5.13-5.53
b2	0.66-0.96
c	0.40-0.60
D	5.80-6.40
E	6.30-6.90
e	2.286 BSC
L	2.50-3.30
L1	1.20-1.80
L2	0.60-1.00
L3	0.85-1.30

TO-220MF-K1

单位 Unit ： mm

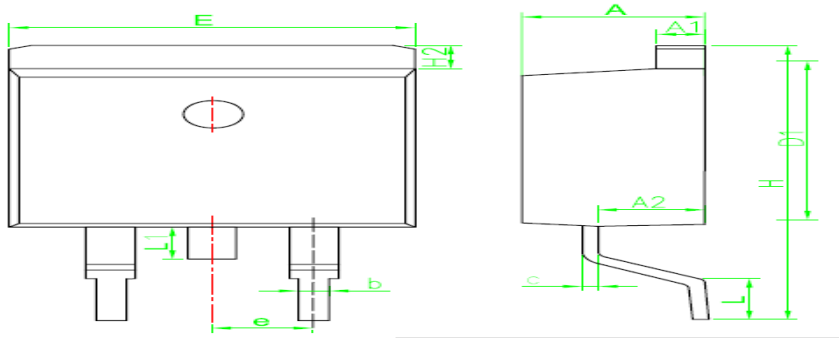




SYMBOL	mm	
	MIN	MAX
A	4.5	4.9
B	1.22	1.47
b	0.7	0.9
c	0.45	0.60
D	15.6	16.1
D1	9.0	9.3
e	2.54TYPE	
E	9.9	10.4
F	2.3	2.8
L	12.6	13.3
L1	3.1	3.4
Q	3.2	3.4
Q1	2.6	2.9
ΦP	3.0	3.5

TO-263

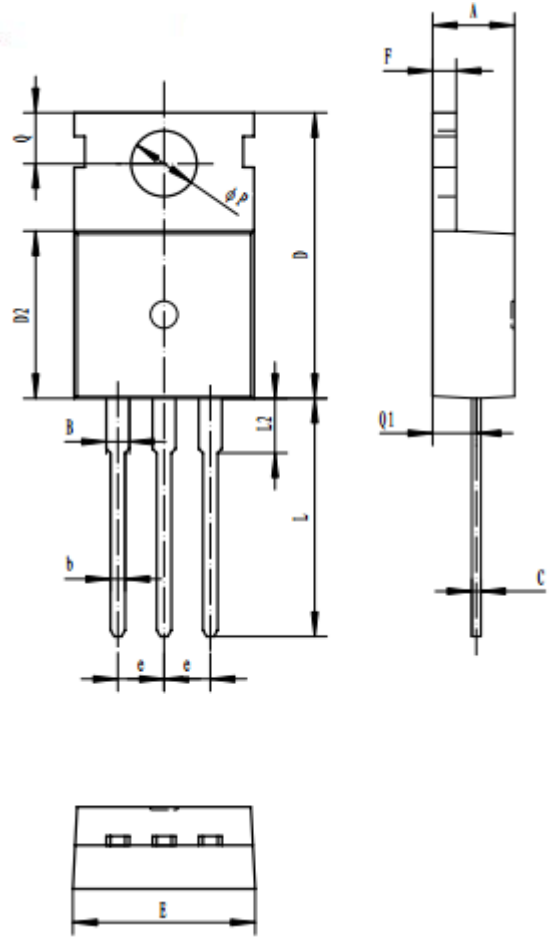
单位 Unit ： mm



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

TO-220C

单位 **Unit ： mm**



A	4.30-4.70
B	1.22-1.40
b	0.70-0.95
c	0.40-0.65
D	15.2-16.2
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

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