



CS1615M1A 给长城

主要参数 MAIN CHARACTERISTICS

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

用途

- 半交流开关
- 相位控制

APPLICATIONS

- Half AC switching
- Phase control

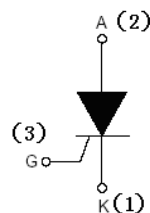
产品特性

- 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

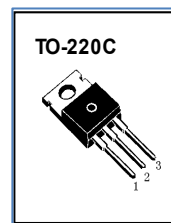
FEATURES

- 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	有卤-袋装	无卤-袋装		
Halogen-Tube	halogen-Free-Tube	Halogen-Bag	Halogen-Free- Bag		
CS1615M1A-C-B	CS1615M1A-C-BR	NA	NA	CS1615M1A	TO-220C



绝对最大额定值 ABSOLUTE RATINGS ($T_c=25^{\circ}\text{C}$)

项 目 Parameter	符 号 Symbol	测 试 条 件 Test conditions	数 值 Value	单 位 Unit
断态重复峰值电压 Repetitive peak off-state voltage	V_{DRM}		800	V
反向重复峰值电压 Repetitive peak reverse voltage	V_{RRM}		800	V
通态平均电流 Average on-state current (half sine wave)	$I_{\text{T(AV)}}$	$T_C = 98^{\circ}\text{C}$, 180° conduction, half sine wave	10	A
通态方均根电流 On-state RMS current (all conduction angles)	$I_{\text{T(RMS)}}$		16	A
非重复浪涌峰值通态电流 Non- repetitive surge peak on-state current (half sine wave , $t=10\text{ms}$)	I_{TSM}	10ms sine pulse, no voltage reapplied	200	A
I^2t for fusing ($t=10\text{ms}$)	I^2t	10ms sine pulse, no voltage reapplied	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)	$P_{\text{G(AV)}}$		0.5	W
存储温度 Storage temperature	T_{stg}		-40~150	$^{\circ}\text{C}$
操作结温 Operation junction temperature	T_{J}		-40~150	$^{\circ}\text{C}$



静态特性 STATIC CHARACTERISTICS ($T_c=25^{\circ}\text{C}$ 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}	$V_{\text{DM}} = V_{\text{DRM}(\text{MAX})}$, $T_j = 150^{\circ}\text{C}$	-	-	4.0	mA
反向峰值重复电流 Peak Repetitive Reverse Current	I_{RRM}	$V_{\text{RM}} = V_{\text{RRM}(\text{MAX})}$, $T_j = 150^{\circ}\text{C}$	-	-	4.0	mA
峰值通态电压 Peak on-state voltage	V_{TM}	$I_{\text{TM}} = 40\text{A}$	-	1.45	1.75	V
门极触发电流 Gate trigger current	I_{GT}	$V_{\text{DM}} = 12\text{V}, I_{\text{T}} = 0.1\text{A}$	1	5	15	mA
门极触发电压 Gate trigger voltage	V_{GT}	$V_{\text{DM}} = 12\text{V}, I_{\text{T}} = 0.1\text{A}$	-	0.8	1.5	V
维持电流 Holding current	I_{H}	$V_{\text{DM}} = 12\text{V}, I_{\text{GT}} = 0.1\text{A}$	-	-	40	mA
擎住电流 Latching current	I_{L}	$V_{\text{DM}} = 12\text{V}, I_{\text{GT}} = 0.1\text{A}$	-	-	60	mA
静电等级 Electro static discharge	ESD	人体模式			3000	V
潮敏等级 Moisture sensitivity level	MSL	MSL=3				



动态特性 DYNAMIC CHARACTERISTICS ($T_c=25^{\circ}\text{C}$ 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	$V_{DM}=67\% V_{DRM(MAX)}$, $T_j=150^{\circ}\text{C}$	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			$^{\circ}\text{C/W}$
	TO-220C	$R_{th(j-c)}$	
结到环境的热阻 Thermal resistance junction to ambient (half cycle)			
		$R_{th(j-a)}$	

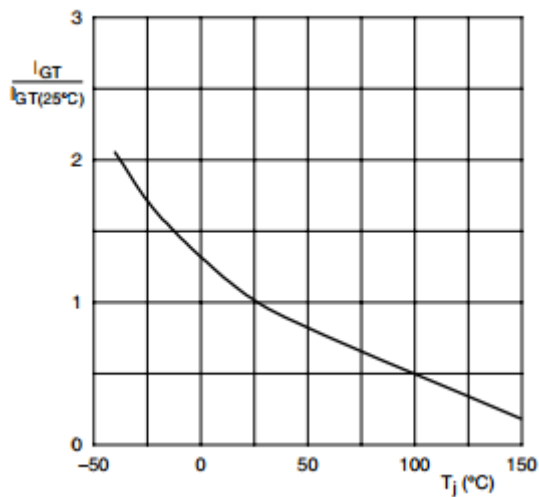
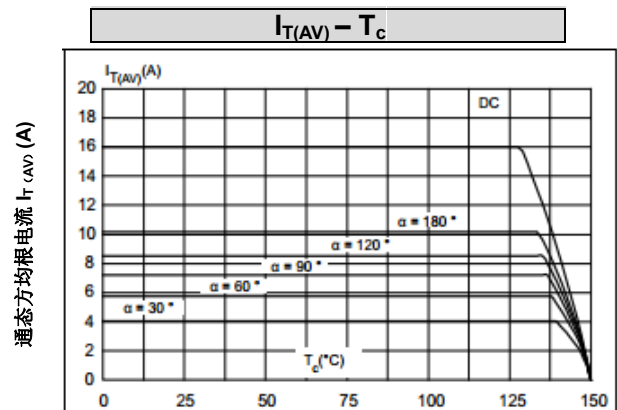
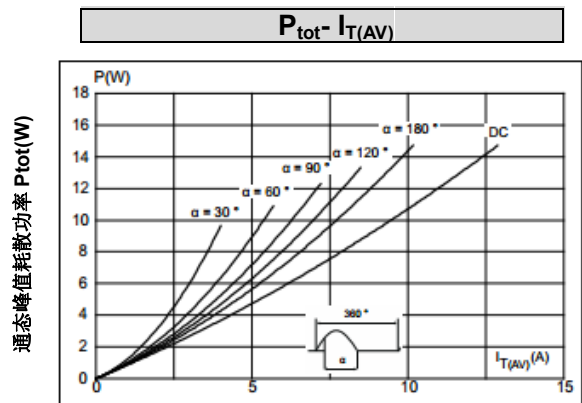
丝印信息 IMPRINT INFORMATION

丝印图片 Imprint Picture	丝印内容 Imprint Content	丝印含义 Imprint Meaning
		华微电子LOGO
	CS1615M1A	产品印记
	GD	芯片和封装代码
	OCKK	流水号

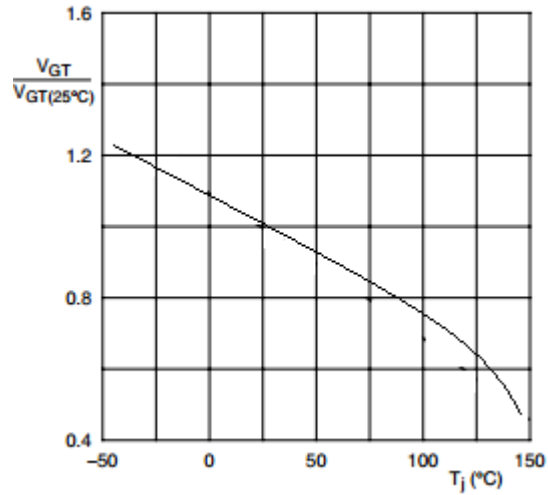




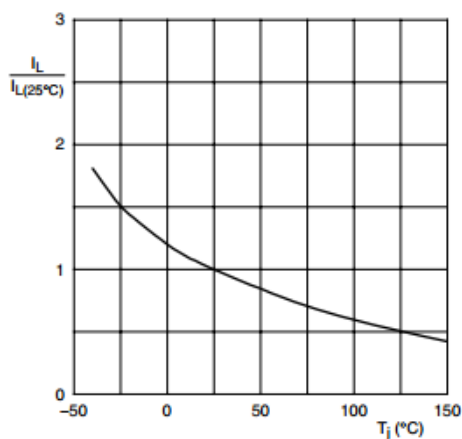
特征曲线 ELECTRICAL CHARACTERISTICS (curves)



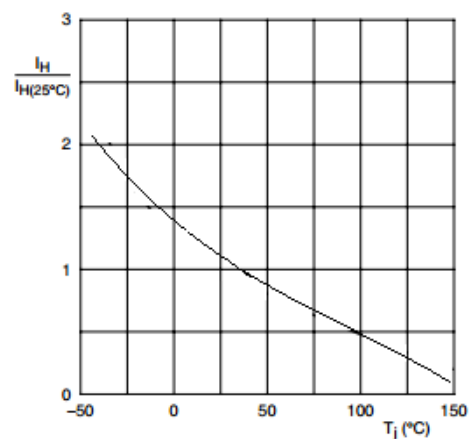
Normalized gate trigger current as a function of junction temperature



Normalized gate trigger voltage as a function of junction temperature

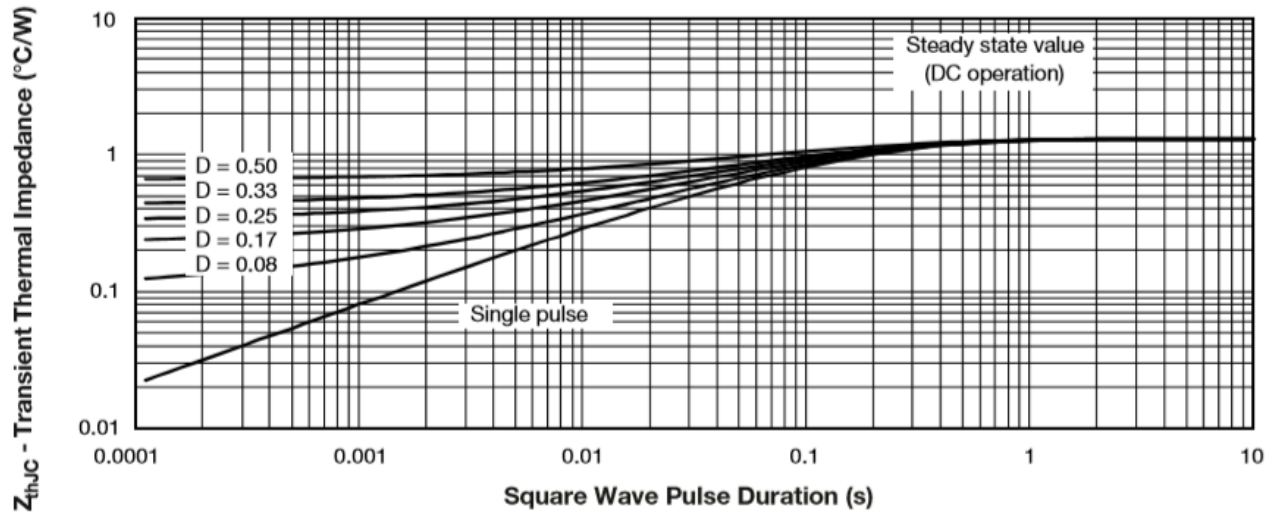


Normalized latching current as a function of junction temperature

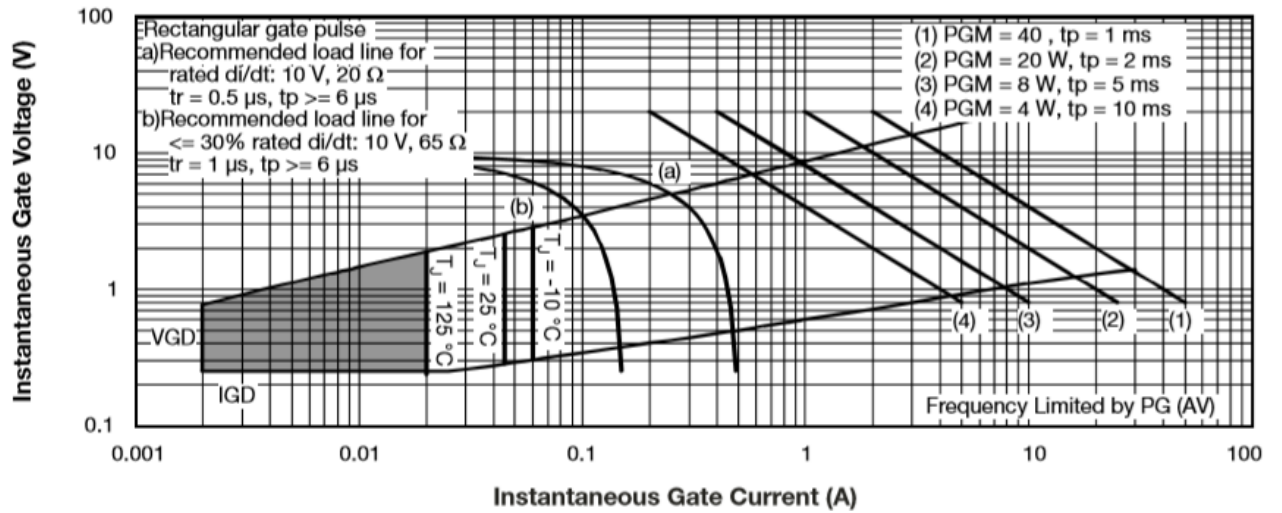


Normalized holding current as a function of junction temperature





Thermal Impedance Z_{thJC} Characteristics



Gate Characteristics



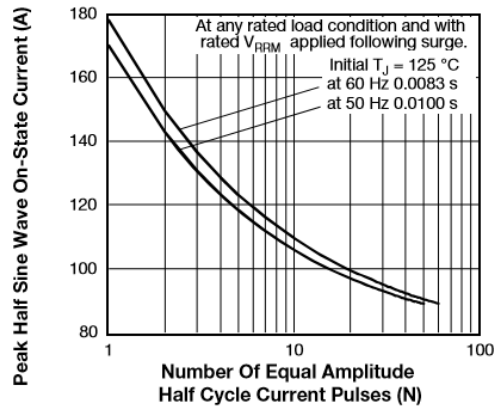


Fig. 5 - Maximum Non-Repetitive Surge Current

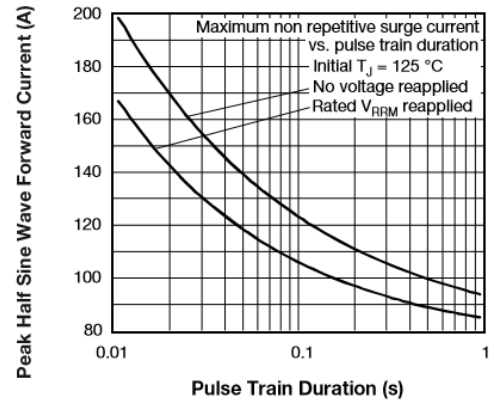
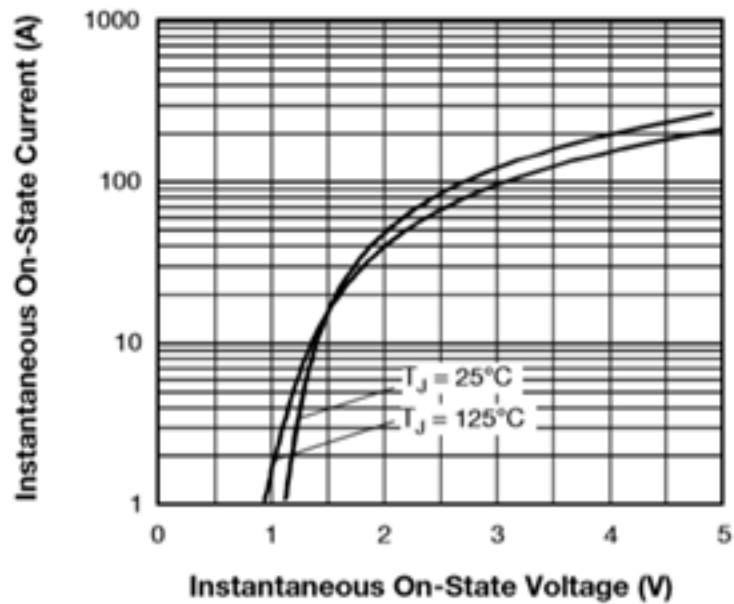


Fig. 6 - Maximum Non-Repetitive Surge Current

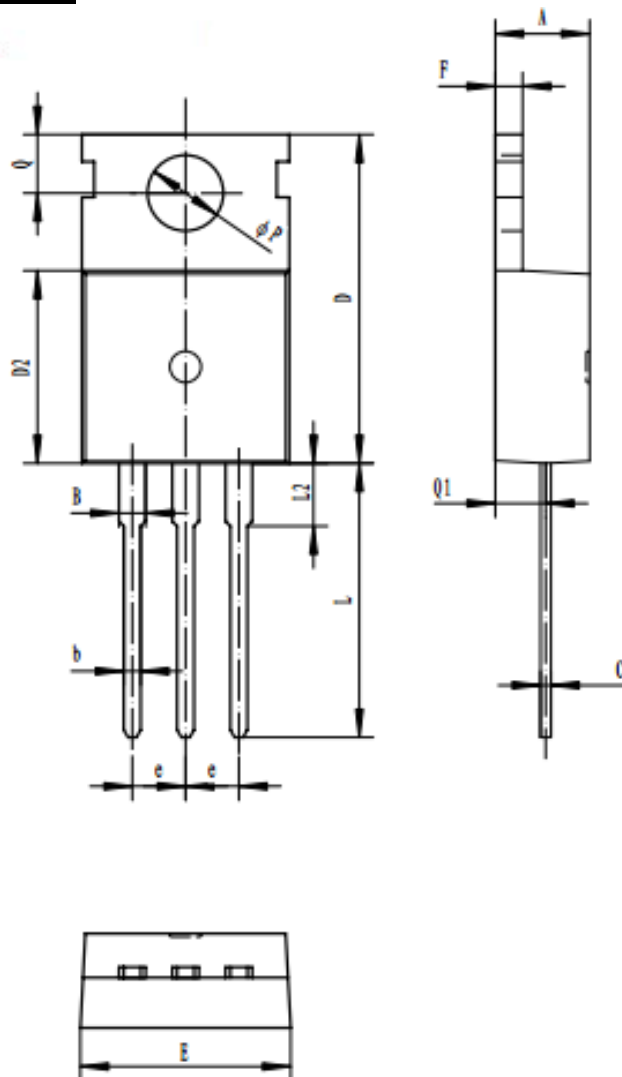




TO-220C

CS1615M1A 给长城

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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3. 在电路设计时请不要超过器件的绝对最大额定值，否则会影响整机的可靠性。
4. 本说明书如有版本变更不另外告知。

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3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
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