CR2AS-16A

800V – 2A -Thyristor

Medium Power Use

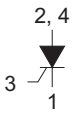
R07DS1211EJ0100
Rev.1.00
Jun 03, 2014

Features

- $I_{T(AV)}$: 2 A
- V_{DRM} : 800 V
- I_{GT}: 100 µA
- Non-Insulated Type
- Planar Type

Outline

RENESAS Package code: PRSS0004ZG-A
(Package name: MP-3A)



1. Cathode
2. Anode
3. Gate
4. Anode

Applications

Earth leakage circuit breaker, Ignitor, Electric tools, etc.

Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		16	
Repetitive peak reverse voltage	V_{RRM}	800	V
Non-repetitive peak reverse voltage	V_{RSM}	960	V
Repetitive peak off-state voltage Note1	V_{DRM}	800	V
Non-repetitive peak off-state voltage Note1	V_{DSM}	960	V

Notes: 1. With gate to cathode resistance R_{GK}=1kΩ

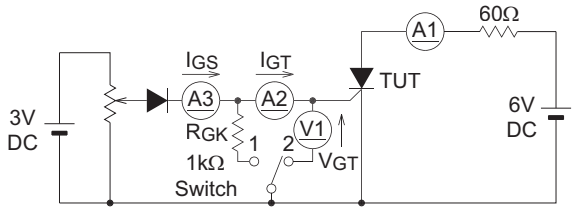
Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	3.1	A	
Average on-state current	$I_{T(AV)}$	2	A	Commercial frequency, sine half wave 180° conduction
Surge on-state current	I_{TSM}	20	A	60Hz sine half wave, 1full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	1.6	A^2s	Value corresponding to 1cycle of half wave 60Hz, surge on-state current
Peak gate power dissipation	P_{GM}	0.5	W	
Average gate power dissipation	$P_{G(AV)}$	0.1	W	
Peak gate forward voltage	V_{FGM}	6	V	
Peak gate reverse voltage	V_{RGM}	6	V	
Peak gate forward current	I_{FGM}	0.3	A	
Junction temperature	Tj	– 40 to +125	°C	
Storage temperature	Tstg	– 40 to +125	°C	
Mass	—	0.32	g	Typical value

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak reverse current	I_{RRM}	—	—	0.1	mA	Tj = 125°C, V_{RRM} applied
Repetitive peak off-state current	I_{DRM}	—	—	0.1	mA	Tj = 125°C, V_{DRM} applied R_{GK} = 1 kΩ
On-state voltage	V_{TM}	—	—	1.8	V	Tj = 25°C, I_{TM} = 4 A instantaneous value
Gate trigger voltage	V_{GT}	—	—	0.8	V	Tj = 25°C, V_D = 6 V, I_T = 0.1 A Note3
Gate non-trigger voltage	V_{GD}	0.2	—	—	V	Tj = 125°C, V_D = 1/2 V_{DRM} R_{GK} = 1 kΩ
Gate trigger current	I_{GT}	1	—	100	μA	Tj = 25°C, V_D = 6 V, I_T = 0.1 A Note3
Holding current	I_H	—	—	3	mA	Tj = 25°C, V_D = 12 V R_{GK} = 1 kΩ
Thermal resistance	$R_{th(j-c)}$	—	—	4.0	°C/W	Junction to case Note2

Notes: 2. The measurement point for case temperature is at anode tab.

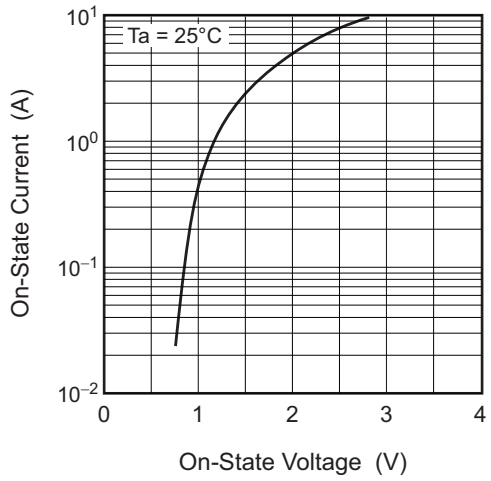
Notes: 3. I_{GT}, V_{GT} measurement circuit.



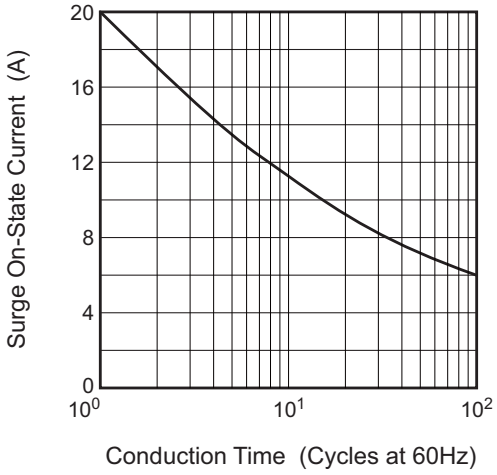
Switch 1 : I_{GT} measurement
Switch 2 : V_{GT} measurement
(Inner resistance of voltage meter is about 1kΩ)

Performance Curves

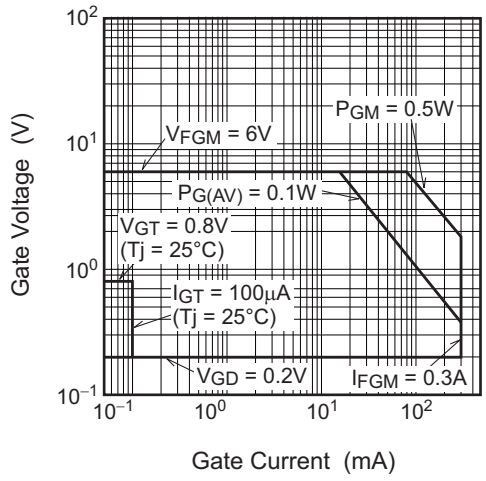
Maximum On-State Characteristics



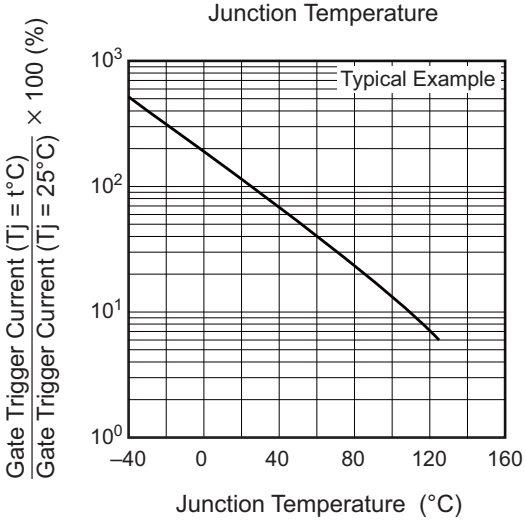
Rated Surge On-State Current



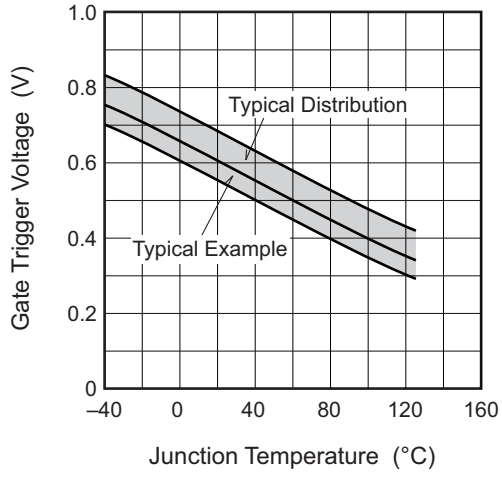
Gate Characteristics



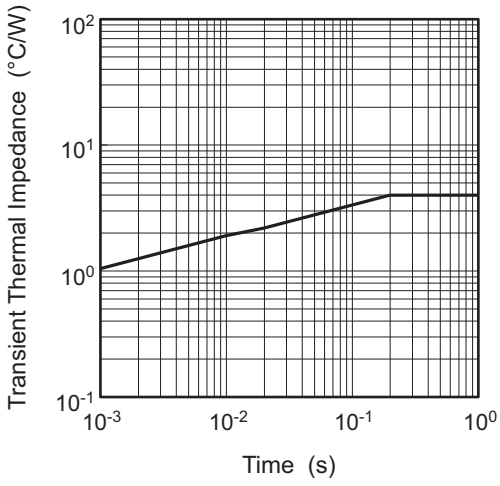
Gate Trigger Current vs. Junction Temperature



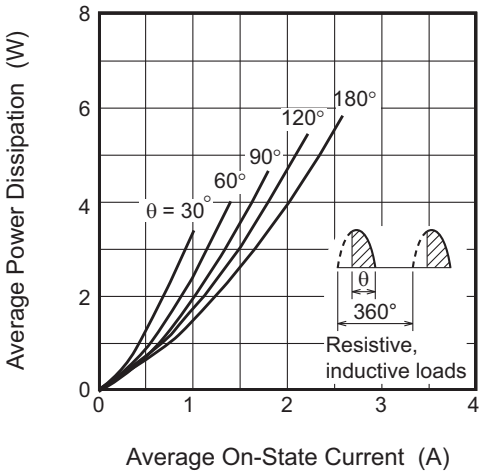
Gate Trigger Voltage vs. Junction Temperature



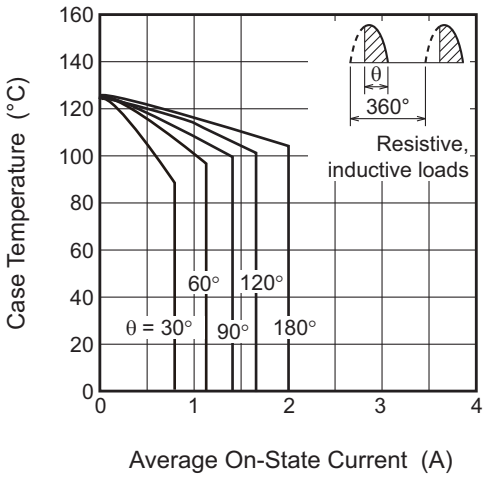
Maximum Transient Thermal Impedance Characteristics (Junction to Case)



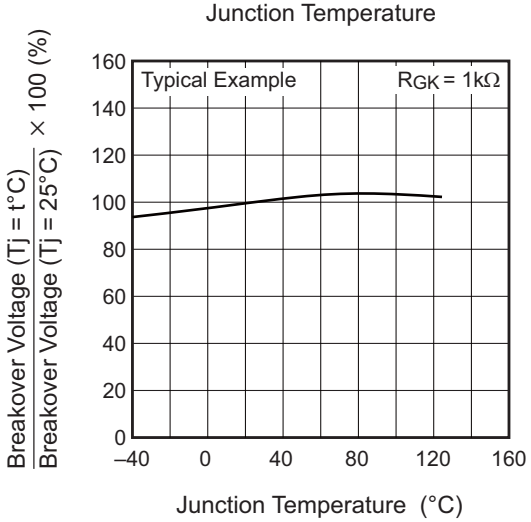
Maximum Average Power Dissipation
(Single-Phase Half Wave)



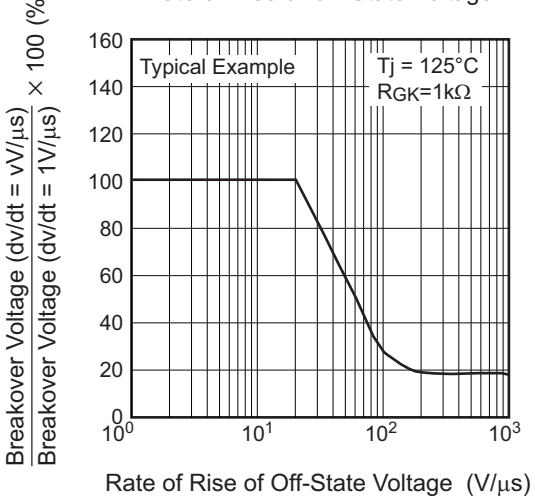
Allowable Case Temperature vs.
Average On-State Current
(Single-Phase Half Wave)



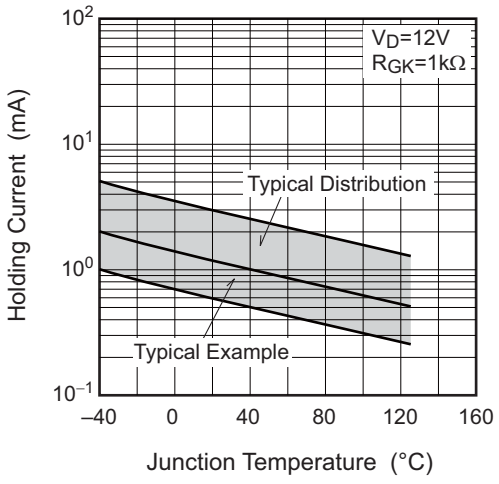
Breakover Voltage vs.
Junction Temperature



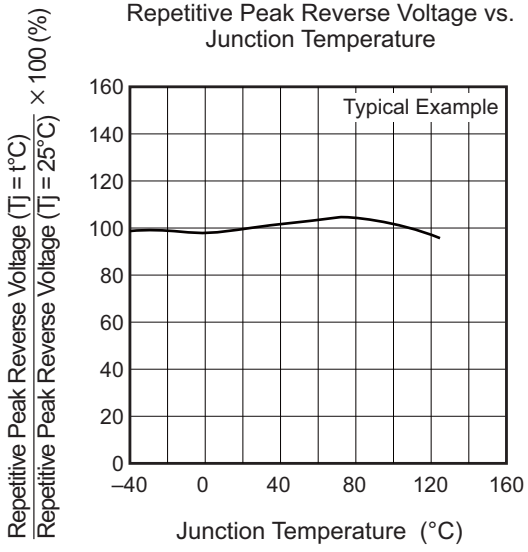
Breakover Voltage vs.
Rate of Rise of Off-State Voltage

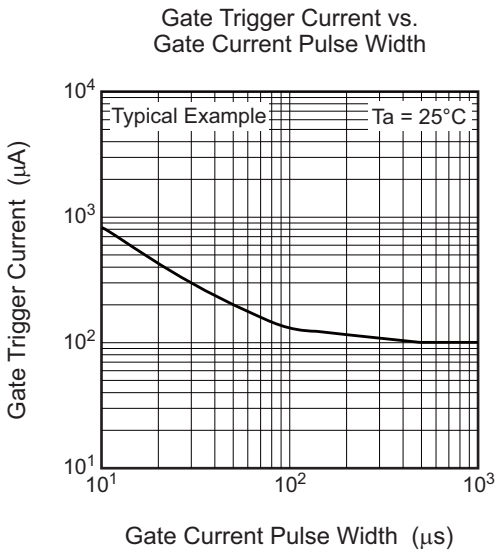


Holding Current vs.
Junction Temperature



Repetitive Peak Reverse Voltage vs.
Junction Temperature

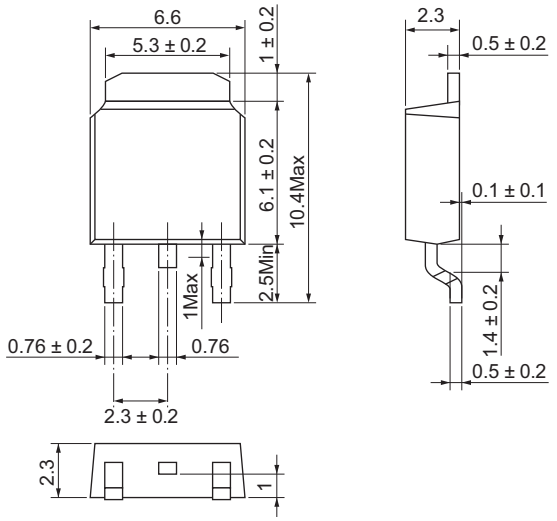



Gate Trigger Current vs.
Gate Current Pulse Width
Typical Example
Ta = 25°C
Gate Trigger Current (μA)
10^4
10^3
10^2
10^1
10^1
10^2
10^3
Gate Current Pulse Width (μs)

Package dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
MP-3A	SC-63	PRSS0004ZG-A	TMP3	0.32g

Unit: mm



Ordering Information

Orderable Part Number	Packing	Quantity	Package	IGT
CR2AS-16A#B00	Tube	75 pcs.	MP-3A	1-100 µA
CR2AS-16A-T13#B00	Embossed Tape	3000 pcs.	MP-3A	1-100 µA
CR2AS-16A-T13#C01	Embossed Tape	3000 pcs.	MP-3A	20-50 µA
CR2AS-16A-T13#C02	Embossed Tape	3000 pcs.	MP-3A	1-50 µA
CR2AS-16A-T13#C03	Embossed Tape	3000 pcs.	MP-3A	20-100 µA

Note : Please confirm the specification about the shipping in detail.

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