

CR2AS-16A

800V - 2A - Thyristor

Low Power Use

R07DS1211EJ0101

Rev.1.01

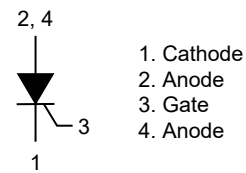
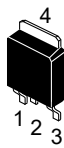
May. 10, 2019

Features

- $I_T(AV)$: 2 A
- V_{DRM} : 800 V
- I_{GT} : 100 μ A
- Planar Passivation Type
- RoHS Compliant

Outline

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



Application

Earth leakage circuit breaker, igniter, 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 $R_{GK} = 1 \text{ k}\Omega$

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, $T_c = 103^\circ\text{C}$ ^{Note2}
Surge on-state current	I_{TSM}	20	A	60 Hz sine half wave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	1.6	A^2s	Value corresponding to 1 cycle of half wave 60 Hz, 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	T_j	-40 to +125	$^\circ\text{C}$	
Storage temperature	T_{stg}	-40 to +125	$^\circ\text{C}$	

Electrical Characteristics

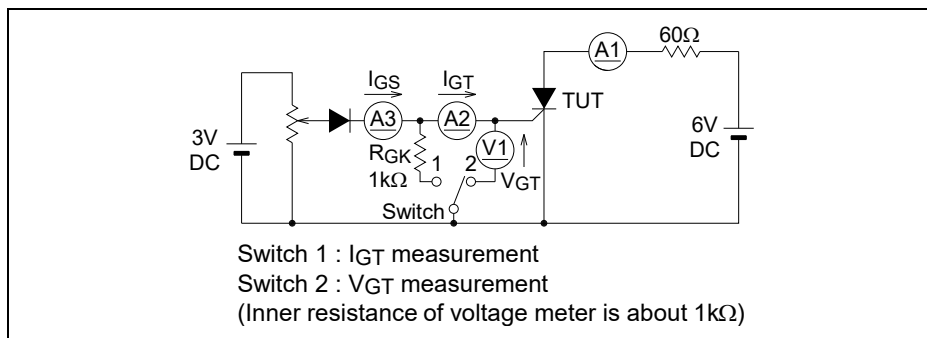
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak reverse current	I_{RRM}	—	—	0.1	mA	$T_j = 125^\circ\text{C}$, V_{RRM} applied,
Repetitive peak off-state current	I_{DRM}	—	—	0.1	mA	$T_j = 125^\circ\text{C}$, V_{DRM} applied, $R_{GK} = 1\text{ k}\Omega$
On-state voltage	V_{TM}	—	—	1.8	V	$T_c = 25^\circ\text{C}$, $I_{TM} = 4\text{ A}$, instantaneous value
Gate trigger voltage	V_{GT}	—	—	0.8	V	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $I_T = 0.1\text{ A}$ ^{Note4}
Gate non-trigger voltage	V_{GD}	0.2	—	—	V	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{DRM}$, $R_{GK} = 1\text{ k}\Omega$
Gate trigger current	I_{GT}	1 ^{Note3}	—	100 ^{Note3}	μA	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $I_T = 0.1\text{ A}$ ^{Note4}
Holding current	I_H	—	—	3	mA	$T_j = 25^\circ\text{C}$, $V_D = 12\text{ V}$, $R_{GK} = 1\text{ k}\Omega$
Thermal resistance	$R_{th(j-c)}$	—	—	4.0	$^\circ\text{C/W}$	Junction to case ^{Note2}

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

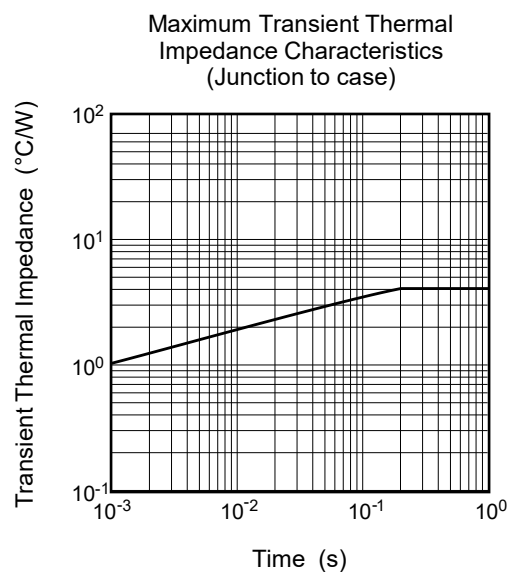
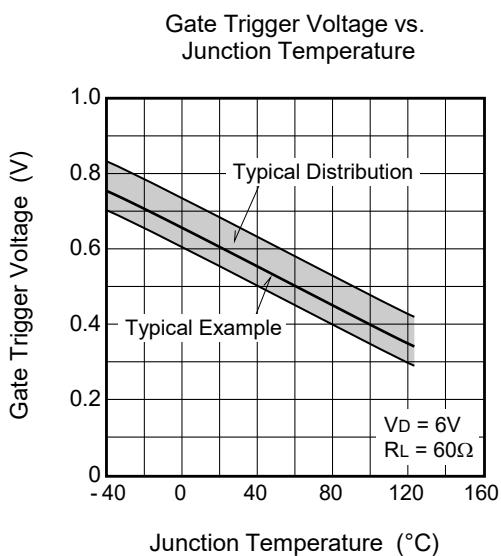
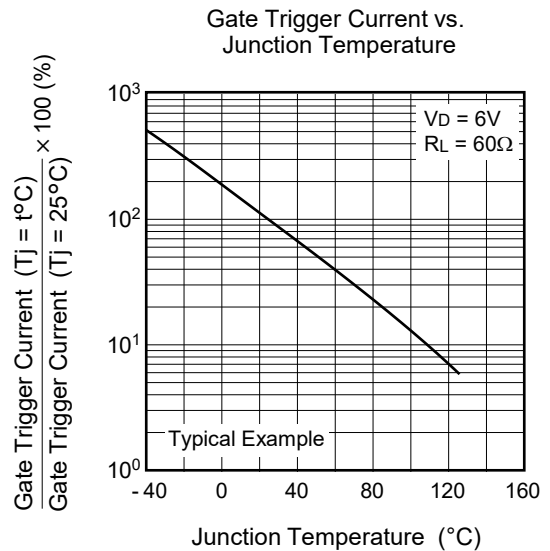
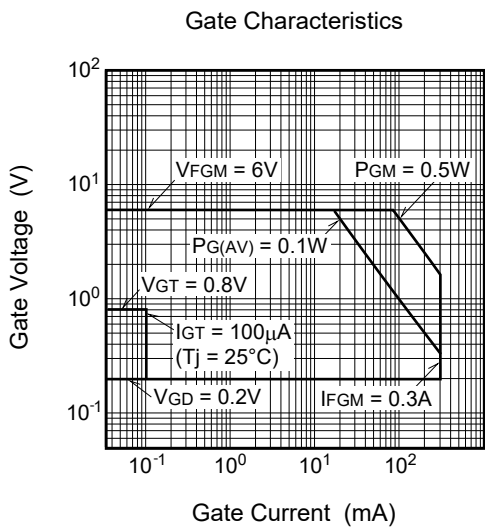
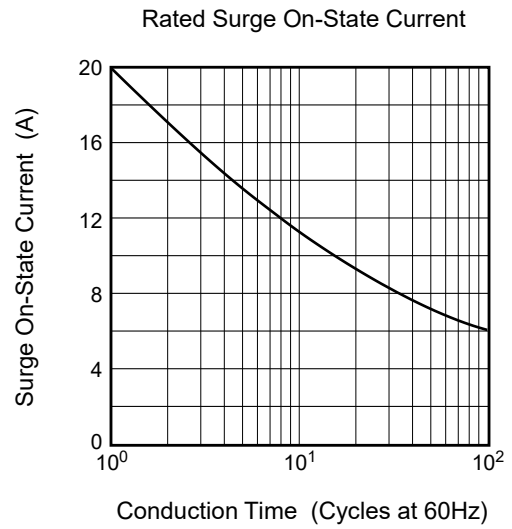
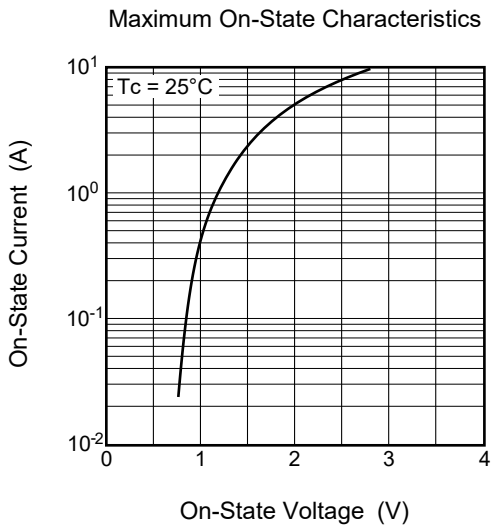
3. If special values of I_{GT} are required, please refer to the ordering information.

The above values do not include the current flowing through the $1\text{ k}\Omega$ resistance between the gate and cathode.

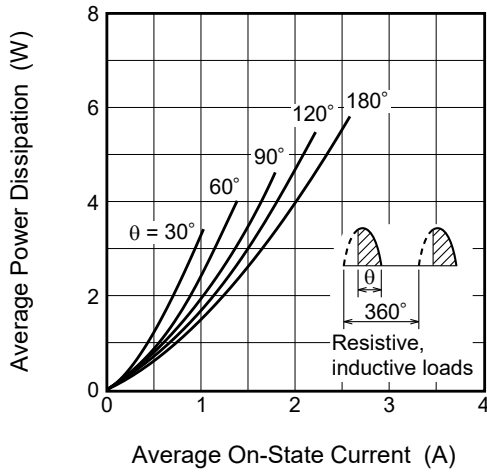
4. I_{GT} , V_{GT} measurement circuit.



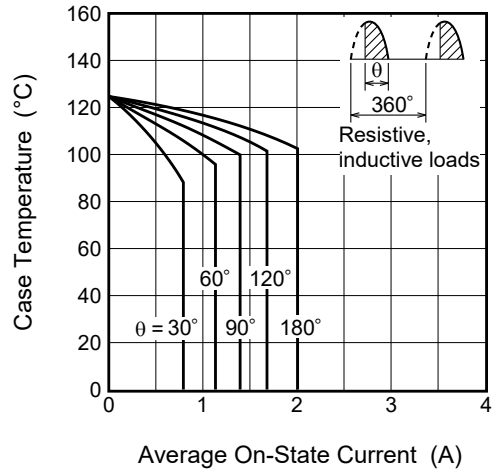
Performance Curves



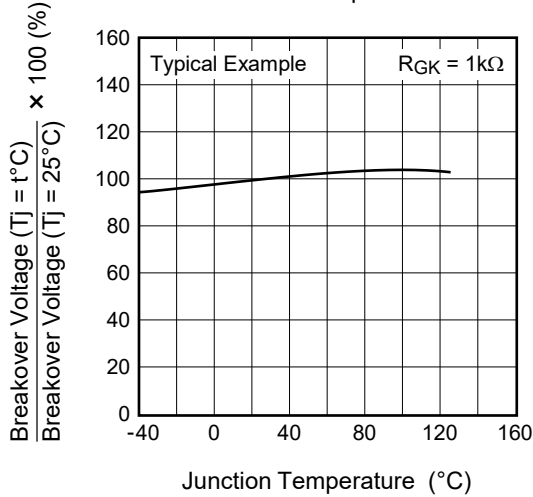
Maximum Average Power Dissipation
(Single-Phase Half Wave)



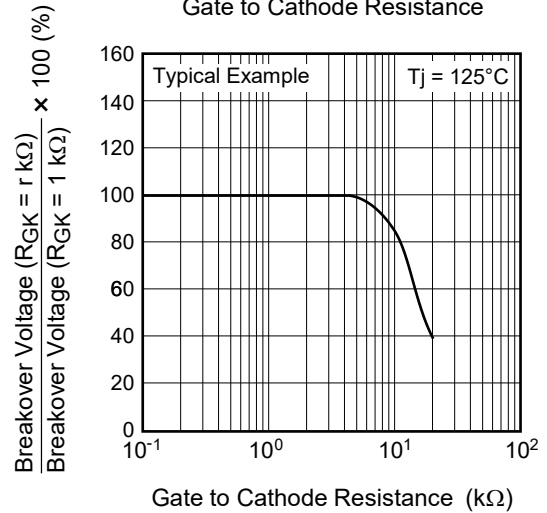
Allowable Case Temperature vs.
Average On-State Current
(Single-Phase Half Wave)



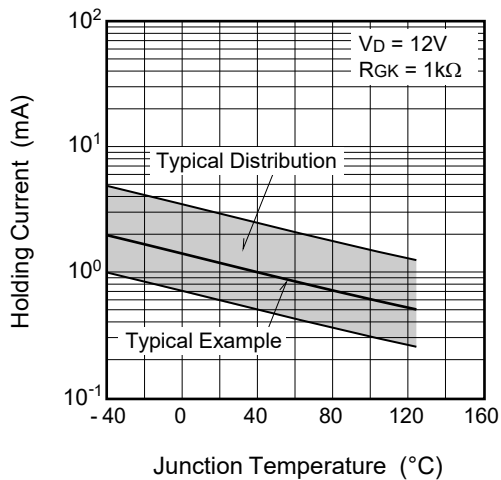
Breakover Voltage vs.
Junction Temperature



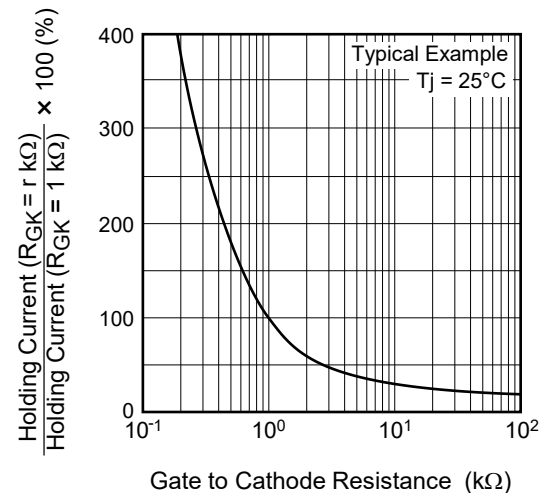
Breakover Voltage vs.
Gate to Cathode Resistance

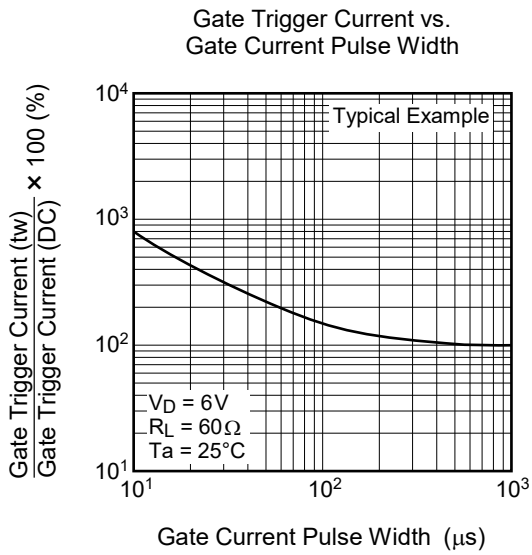
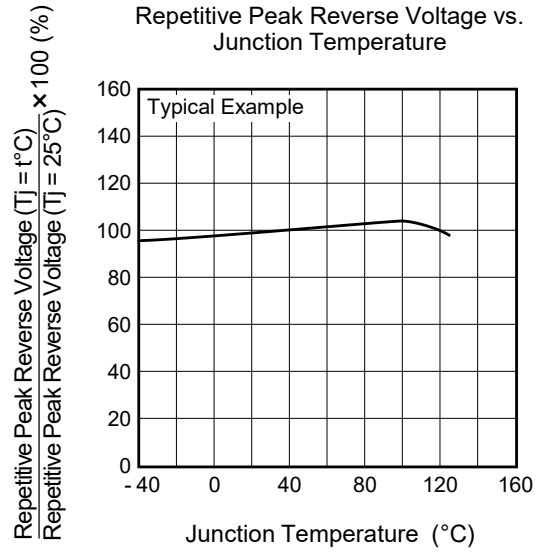
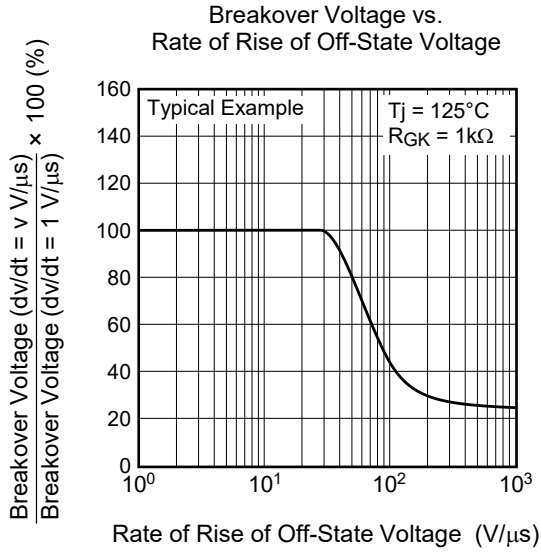


Holding Current vs.
Junction Temperature



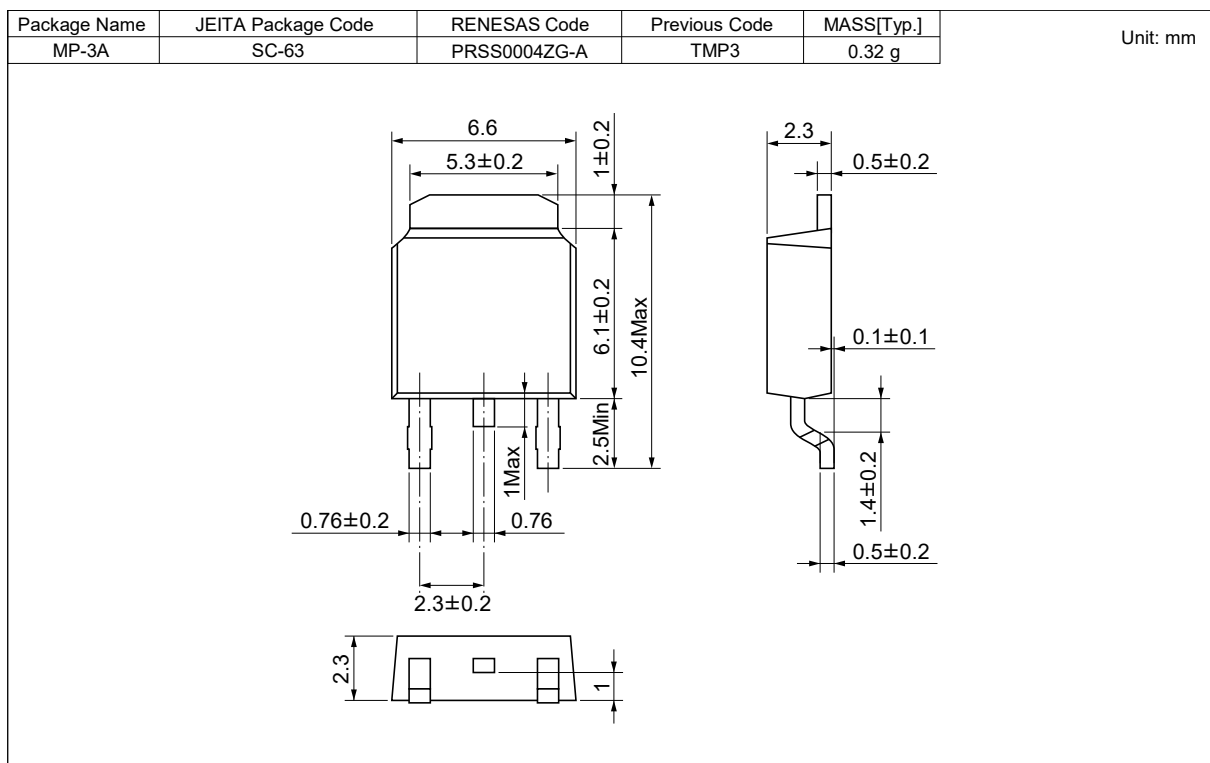
Holding Current vs.
Gate to Cathode Resistance





Package Dimensions

Package Name: MP-3A



Ordering Information

Orderable Part Number	Package	Packing ^{Note5}	Quantity	Remark	I _{GT} ^{Note3}
CR2AS-16A-T13#B00	MP-3A	Embossed tape	3000 pcs.		1-100 μA
CR2AS-16A-T13#C01	MP-3A	Embossed tape	3000 pcs.		20-50 μA
CR2AS-16A-T13#C02	MP-3A	Embossed tape	3000 pcs.		1-50 μA
CR2AS-16A-T13#C03	MP-3A	Embossed tape	3000 pcs.		20-100 μA

Note: 5. Please confirm the specification about the shipping in detail.