

BCR4CM-16LH

Triac
Medium Power Use

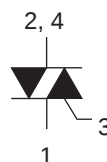
R07DS0255EJ0100
Rev.1.00
Feb 28, 2011

Features

- $I_{T(RMS)}$: 4 A
- V_{DRM} : 800 V
- I_{FGT} , I_{RGT} , $I_{RGT III}$: 35 mA or 10mA(I_{GT} item:1)
- High Commutation
- The Product guaranteed maximum junction temperature 150°C
- Planar Type

Outline

RENESAS Package code: PRSS0004AA-A
(Package name: TO-220)



1. T_1 Terminal
2. T_2 Terminal
3. Gate Terminal
4. T_2 Terminal

Applications

Switching mode power supply, small motor control, heater control, and other general purpose AC power control applications

Maximum Ratings

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

Notes: 1. Gate open.

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	4	A	Commercial frequency, sine full wave 360°conduction, $T_c = 132^{\circ}\text{C}$ ^{Note3}
Surge on-state current	I_{TSM}	30	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusion	I^2t	3.7	A^2s	Value corresponding to 1 cycle of half wave 60 Hz, surge on-state current
Peak gate power dissipation	P_{GM}	3	W	
Average gate power dissipation	$P_{G(AV)}$	0.3	W	
Peak gate voltage	V_{GM}	10	V	
Peak gate current	I_{GM}	2	A	
Junction Temperature	T_j	-40 to +150	$^{\circ}\text{C}$	
Storage temperature	T_{stg}	-40 to +150	$^{\circ}\text{C}$	
Mass	—	2.0	g	Typical value

Notes: 1. Gate open.

Electrical Characteristics

Parameter		Symbol	BCR4CM-16LH-1 (I _{GT} item: 1)			BCR4CM-16LH			Unit	Test conditions
			Min.	Typ.	Max.	Min.	Typ.	Max.		
Repetitive peak off-state current		I _{DRM}	—	—	2.0	—	—	2.0	mA	T _j = 150°C V _{DRM} applied
On-state voltage		V _{TM}	—	—	1.6	—	—	1.6	V	T _c = 25°C, I _{TM} = 6 A instantaneous measurement
Gate trigger voltage ^{Note2}	I	V _{FGTI}	—	—	1.5	—	—	1.5	V	T _j = 25°C, V _D = 6 V R _L = 6 Ω, R _G = 330 Ω
	II	V _{RGTI}	—	—	1.5	—	—	1.5	V	
	III	V _{RGTIII}	—	—	1.5	—	—	1.5	V	
Gate trigger current ^{Note2}	I	I _{FGTI}	—	—	10	—	—	35	mA	T _j = 25°C, V _D = 6 V R _L = 6 Ω, R _G = 330 Ω
	II	I _{RGTI}	—	—	10	—	—	35	mA	
	III	I _{RGTIII}	—	—	10	—	—	35	mA	
Gate non-trigger voltage		V _{GD}	0.2	—	—	0.2	—	—	V	T _j = 125°C V _D = 1/2 V _{DRM}
			0.1	—	—	0.1	—	—	V	T _j = 150°C V _D = 1/2 V _{DRM}
Thermal resistance		R _{th (j-c)}	—	—	3.3	—	—	3.3	°C/W	Junction to case ^{Note3,4}
Critical-rate of decay of on-state commutating current ^{Note5}		(di/dt) _c	2.5	—	—	—	—	—	A/ms	T _j = 125°C (dv/dt) _c < 10 V/μs
			—	—	—	3.0	—	—	A/ms	T _j = 125°C (dv/dt) _c < 100 V/μs

Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

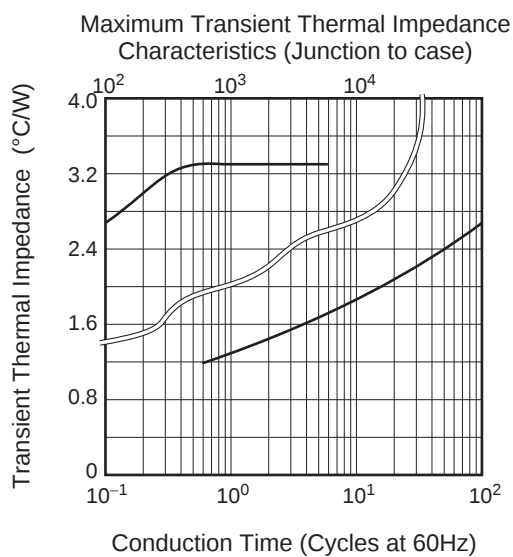
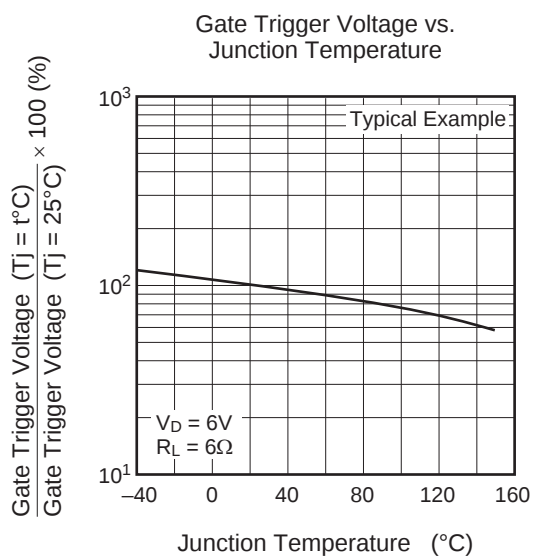
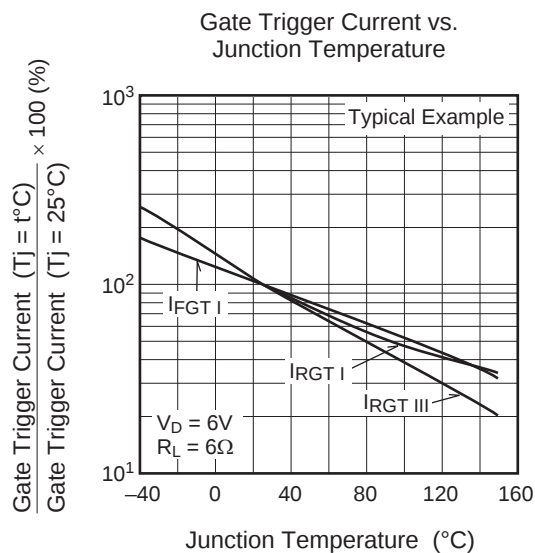
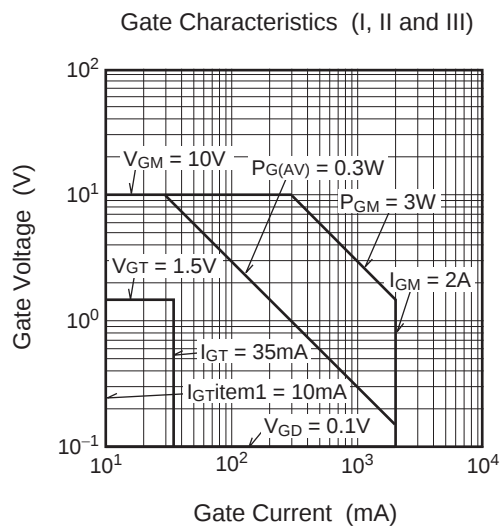
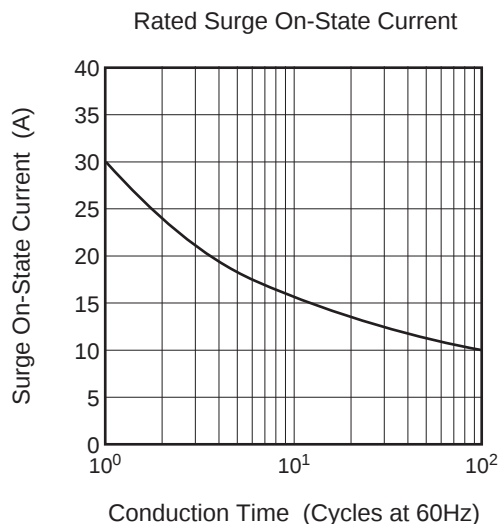
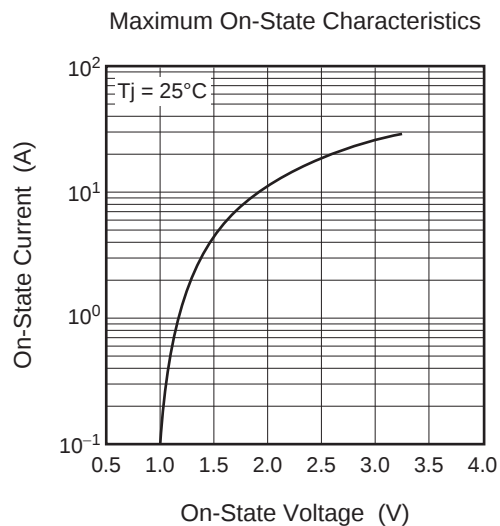
3. Case temperature is measured at the T₂ tab 1.5 mm apart from the molded case.

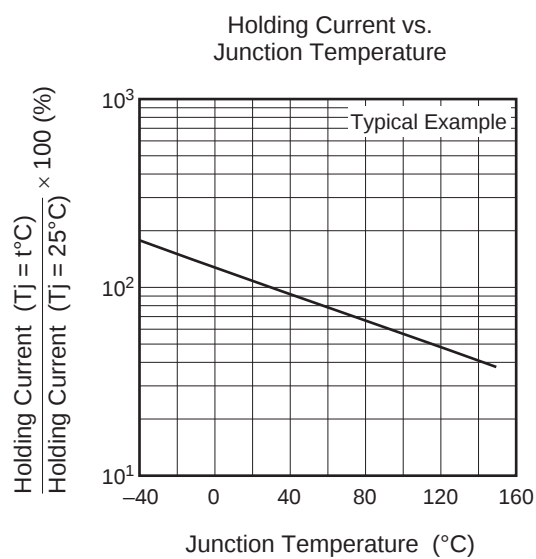
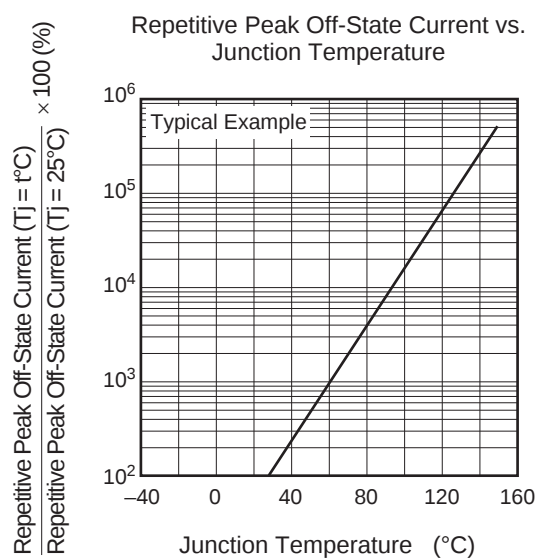
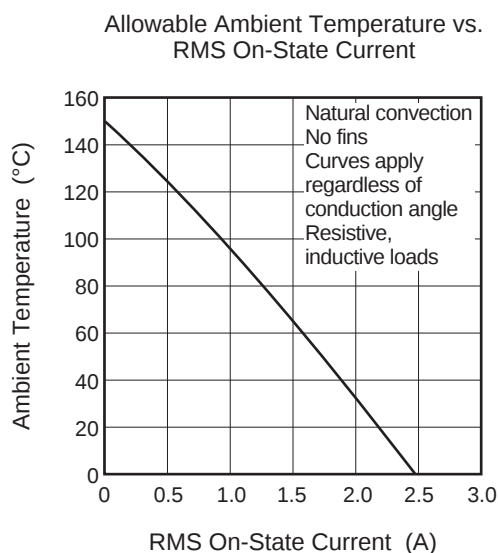
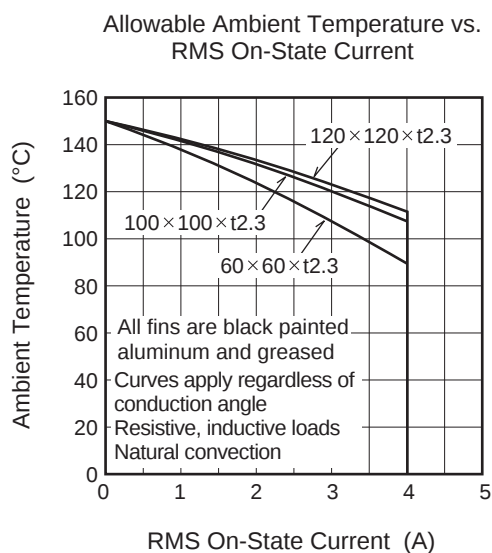
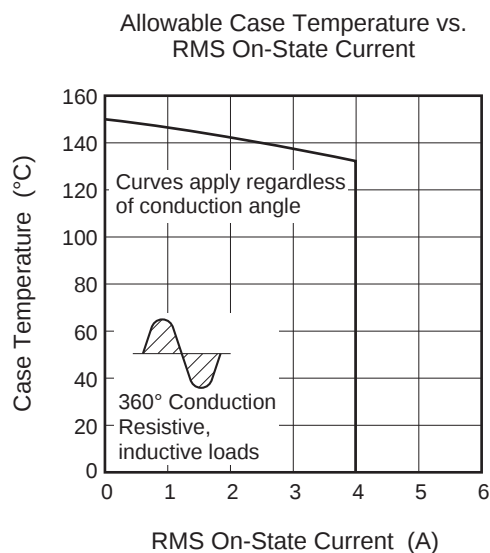
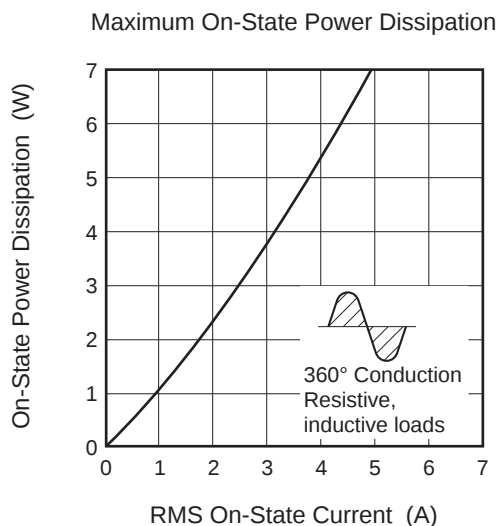
4. The contact thermal resistance R_{th (c-f)} in case of greasing is 1.0°C/W.

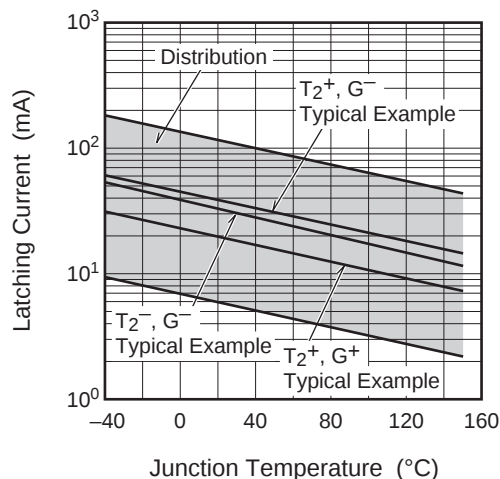
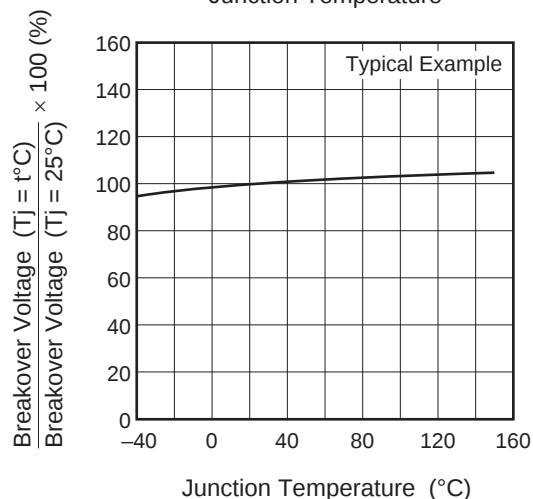
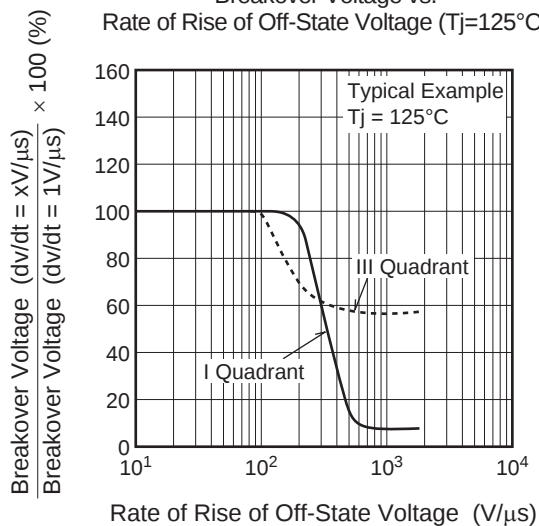
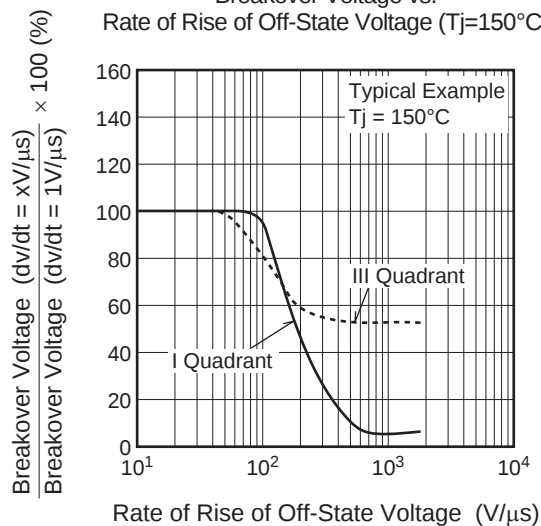
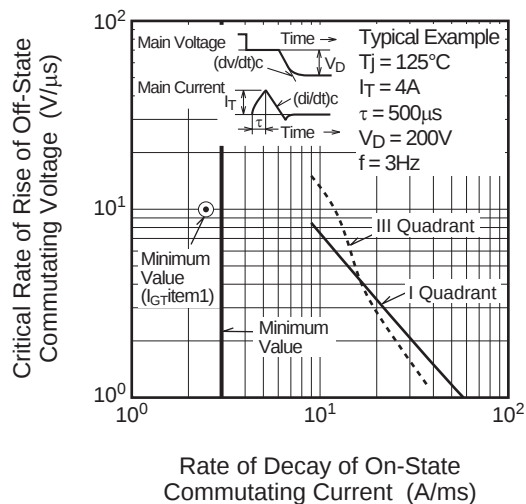
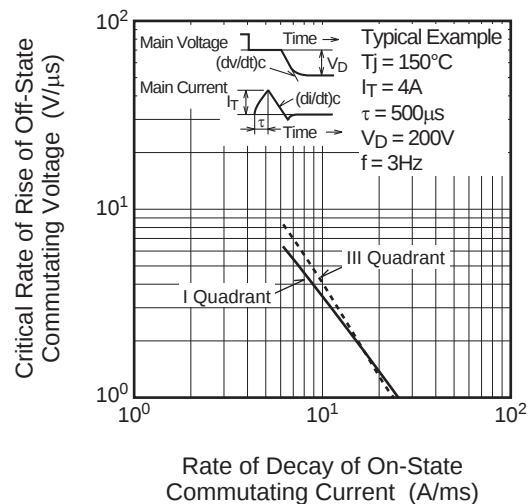
5. Test conditions of the critical-rate of decay of on-state commutation current are shown in the table below.

Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature T _j = 125°C 2. Peak off-state voltage V _D = 400 V 2. Rate of rise of off-state commutating voltage (dv/dt) _c < 10 V/μs (I _{GT} item : 1) (dv/dt) _c < 100 V/μs	

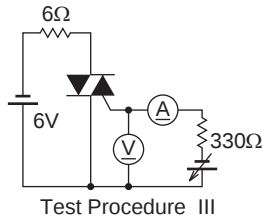
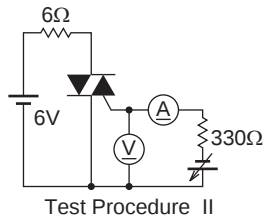
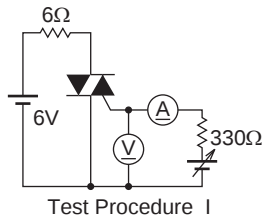
Performance Curve



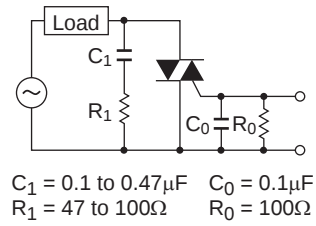


Latching Current vs.
Junction TemperatureBreakover Voltage vs.
Junction TemperatureBreakover Voltage vs.
Rate of Rise of Off-State Voltage ($T_J=125^{\circ}\text{C}$)Breakover Voltage vs.
Rate of Rise of Off-State Voltage ($T_J=150^{\circ}\text{C}$)Commutation Characteristics ($T_J=125^{\circ}\text{C}$)Commutation Characteristics ($T_J=150^{\circ}\text{C}$)

Gate Trigger Characteristics Test Circuits



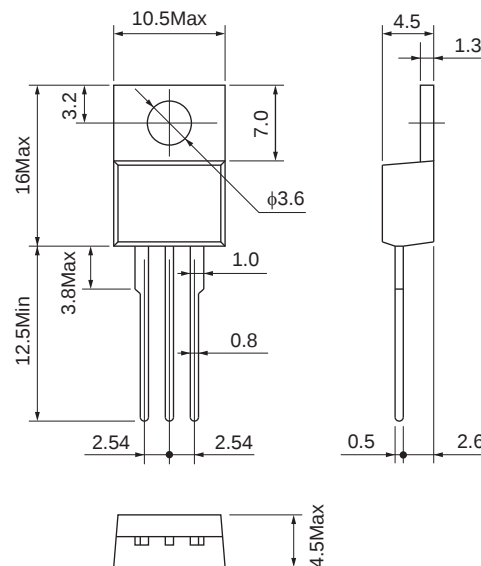
Recommended Circuit Values Around The Triac



Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-220	SC-46	PRSS0004AA-A	—	2.0g

Unit: mm



Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR4CM-16LH#B00	Bag	100 pcs.	Straight type
BCE4CM-16LH-1#B00	Bag	100 pcs.	Straight type, IGT item1

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

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