

# BCR2EM-14LB

700V - 2A - Triac  
Medium Power Use

R07DS0968EJ0001  
Rev.0.01  
Nov 28, 2012

## Features

- $I_{T(RMS)}$ : 2 A
- $V_{DRM}$ : 800 V ( $T_j = 125^\circ\text{C}$ )
- $I_{FGT}$ ,  $I_{RGT}$ ,  $I_{RGTIII}$ : 10 mA
- $T_j$ : 150 °C
- Planar Passivation Type

## Outline

RENESAS Package code: PRSS0003ZM-A  
(Package name : TO-126)



1. T<sub>1</sub> Terminal
2. T<sub>2</sub> Terminal
3. Gate Terminal

## Applications

Washing machine, electric fan, air cleaner, other general purpose control applications

## Maximum Ratings

Parameter	Symbol	Voltage class	Unit	Conditions
		14		
Repetitive peak off-state voltage <sup>Note1</sup>	$V_{DRM}$	800	V	$T_j = 125^\circ\text{C}$
		700	V	$T_j = 150^\circ\text{C}$
Non-repetitive peak off-state voltage <sup>Note1</sup>	$V_{DSM}$	840	V	

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	2	A	Commercial frequency, sine full wave 360° conduction $T_c = 138^\circ\text{C}$ <sup>Note3</sup>
Surge on-state current	$I_{TSM}$	8	A	50 Hz sinewave 1 full cycle, peak value, non-repetitive
$I^2t$ for fusion	$I^2t$	0.27	A <sup>2</sup> s	Value corresponding to 1 cycle of half wave 60 Hz, surge on-state current
Peak gate power dissipation	$P_{GM}$	1	W	
Average gate power dissipation	$P_{G(AV)}$	0.1	W	
Peak gate voltage	$V_{GM}$	6	V	
Peak gate current	$I_{GM}$	1	A	
Junction Temperature	$T_j$	-40 to +150	°C	
Storage temperature	$T_{stg}$	-40 to +150	°C	
Mass	—	0.715	g	Typical value

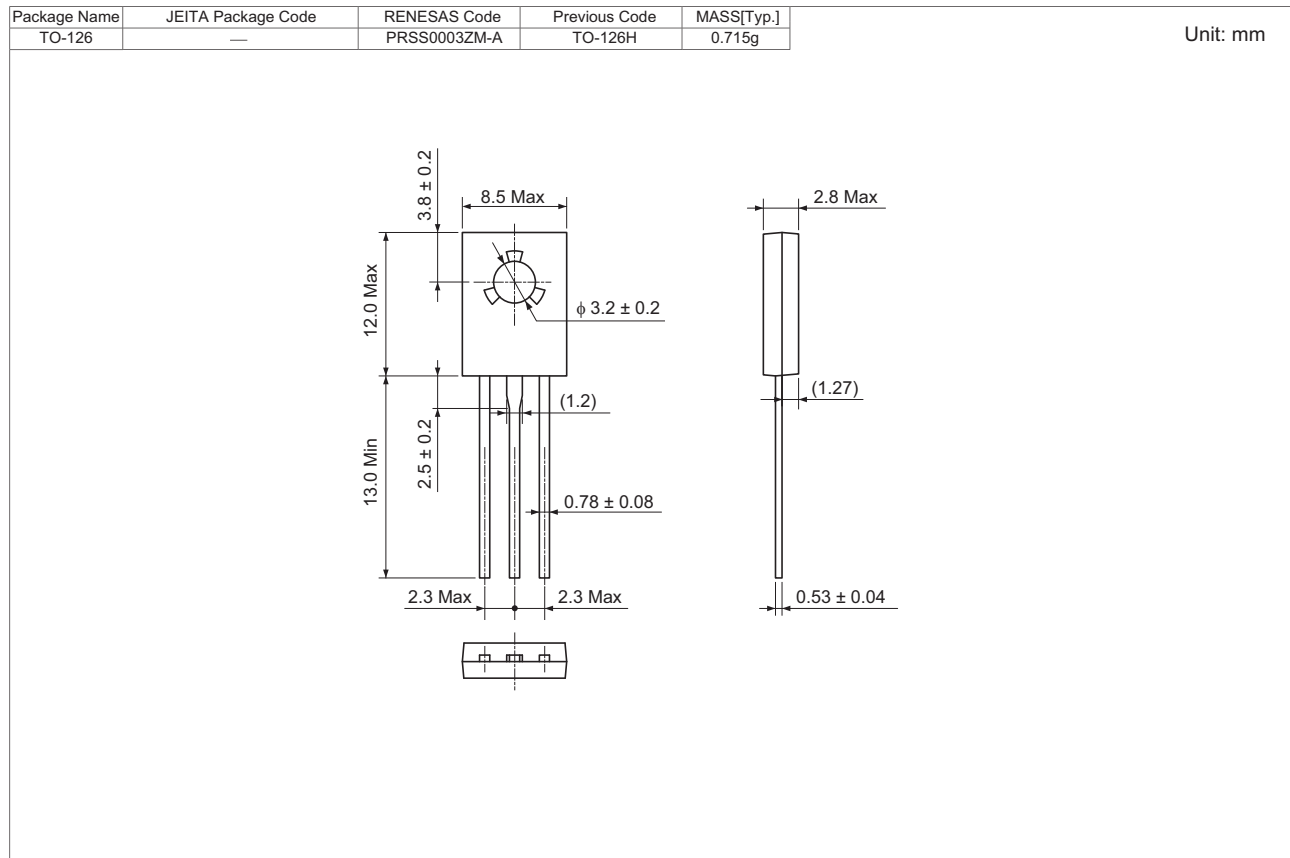
## Electrical Characteristics

Parameter	Sym bol	Min.	Typ.	Max.	Unit	Test conditions	
Repetitive peak off-state current	$I_{DRM}$	—	—	2.0	mA	$T_j = 150^\circ\text{C}$ , $V_{DRM}$ applied	
On-state voltage	$V_{TM}$	—	—	2.1	V	$T_c = 25^\circ\text{C}$ , $I_{TM} = 3\text{A}$ , instantaneous measurement	
Gate trigger voltage <sup>Note2</sup>	I	$V_{FGTI}$	—	—	2.0	$T_j = 25^\circ\text{C}$ , $V_D = 6\text{V}$ , $R_L = 6\ \Omega$ , $R_G = 330\ \Omega$	
	II	$V_{RGTI}$	—	—	2.0		V
	III	$V_{RGTIII}$	—	—	2.0		V
Gate trigger current <sup>Note2</sup>	I	$I_{FGTI}$	—	—	10	$T_j = 25^\circ\text{C}$ , $V_D = 6\text{V}$ , $R_L = 6\ \Omega$ , $R_G = 330\ \Omega$	
	II	$I_{RGTI}$	—	—	10		mA
	III	$I_{RGTIII}$	—	—	10		mA
Gate non-trigger voltage	$V_{GD}$	0.2	—	—	V	$T_j = 125^\circ\text{C}$ , $V_D = 1/2 V_{DRM}$	
		0.1	—	—	V	$T_j = 150^\circ\text{C}$ , $V_D = 1/2 V_{DRM}$	
Thermal resistance	$R_{th(j-c)}$	—	—	4.0	$^\circ\text{C/W}$	Junction to case <sup>Note3</sup>	
	$R_{th(j-a)}$	—	—	75	$^\circ\text{C/W}$	Junction to ambient Natural convection, No fins	
Critical-rate of rise of off-state commutation voltage <sup>Note4</sup>	$(dv/dt)_c$	0.5	—	—	V/ $\mu\text{s}$	$T_j = 125^\circ\text{C}$	

- Notes: 1. Gate open.  
 2. Measurement using the gate trigger characteristics measurement circuit.  
 3. Case temperature is measured at the  $T_2$  terminal 2.0 mm apart from the molded case.  
 4. Test conditions of the critical-rate of rise of off-state commutating voltage shown in the table below.

Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j = 125^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c = -1.0\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

## Package Dimensions



## Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR2EM-14LB#B00	Tube	60 pcs.	Straight type

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