

BCR4AS-16LH

800V - 4A - Triac

Medium Power Use

R07DS0331EJ0101

Rev.1.01

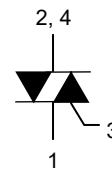
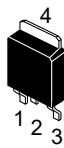
May. 10, 2019

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)
- T_j : 150 °C
- High Commutation
- Planar Passivation Type

Outline

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



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

Application

Small motor control, heater control, and other general purpose AC 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, $T_c = 129^{\circ}C$ ^{Note3}
Surge on-state current	I_{TSM}	30	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	3.7	A ² s	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	°C	
Storage temperature	T_{stg}	-40 to +150	°C	

Electrical Characteristics

Parameter	Symbol	BCR4AS-16LH-1 (I _{GT} item:1)			BCR4AS-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)}	—	—	3.8	—	—	3.8	°C/W	Junction to case ^{Note3}	
Critical-rate of fall of on-state commutating current ^{Note4}	(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.

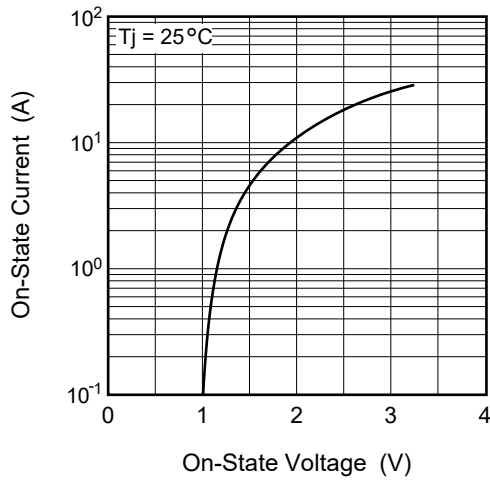
3. Case temperature is measured on the T₂ tab.

4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

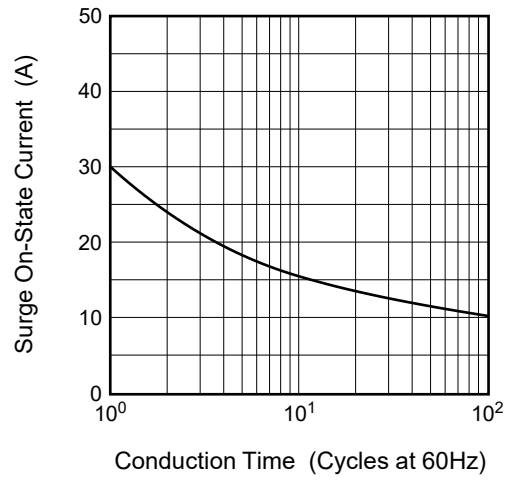
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature T _j = 125°C 2. Peak off-state voltage V _D = 400 V 3. Rate of rise of off-state commutating voltage (dv/dt) _c < 10 V/μs (I _{GT} item : 1) (dv/dt) _c < 100 V/μs	

Performance Curves

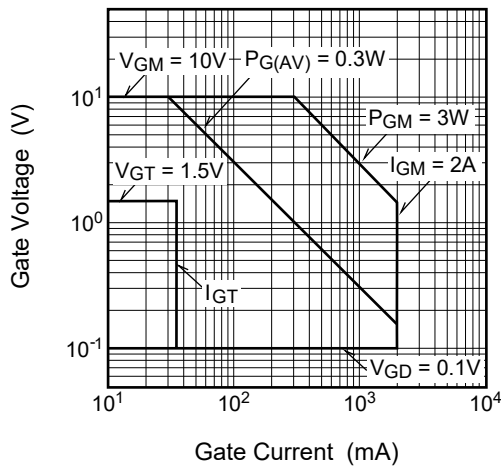
Maximum On-State Characteristics



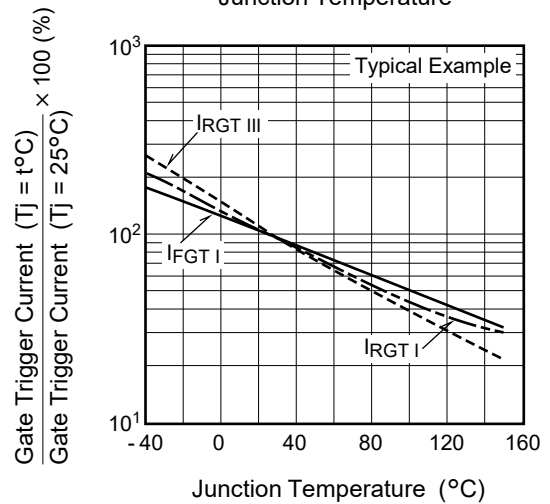
Rated Surge On-State Current



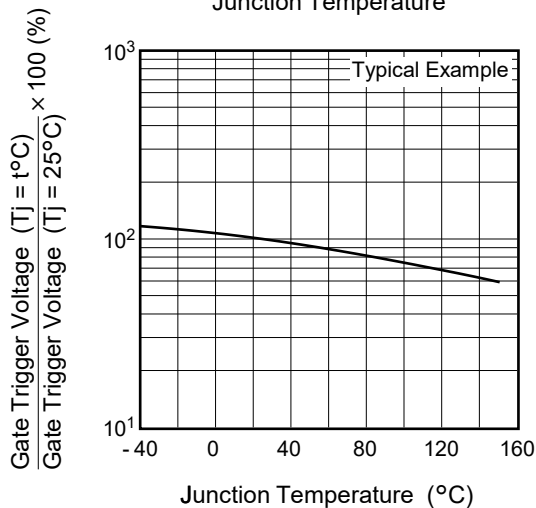
Gate Characteristics (I, II and III)



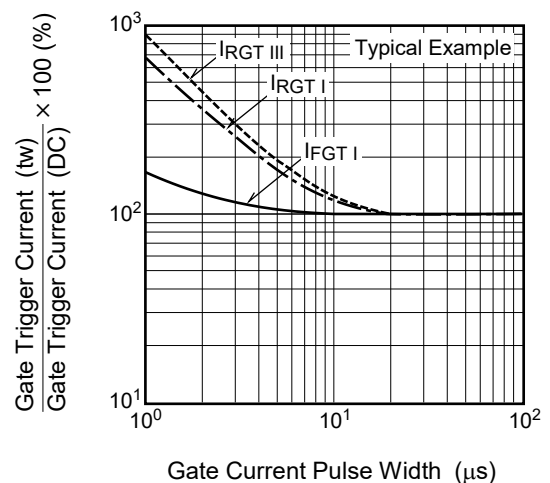
Gate Trigger Current vs. Junction Temperature

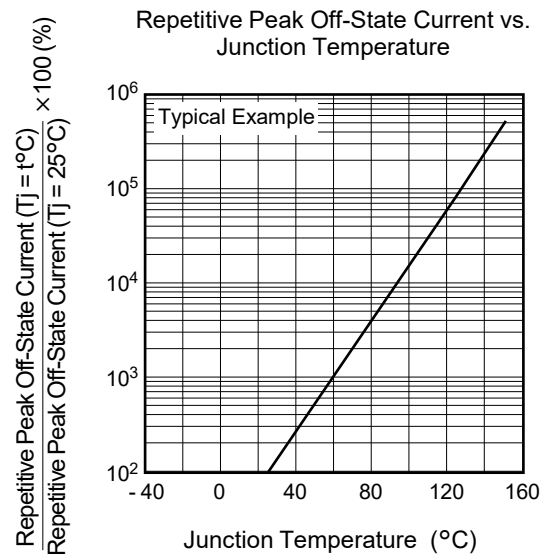
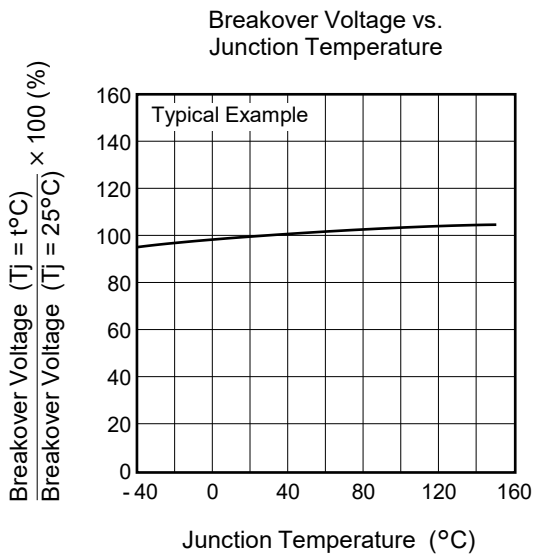
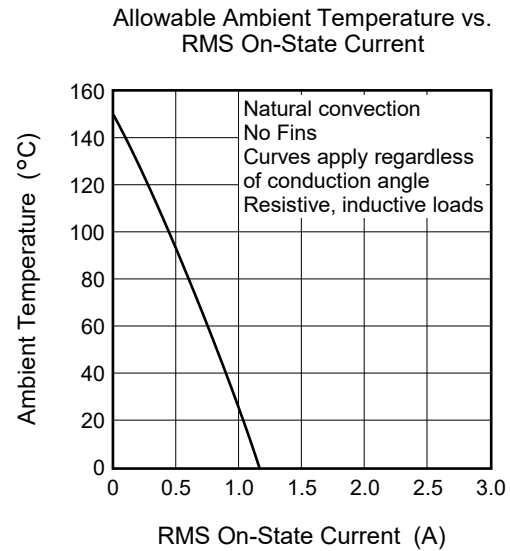
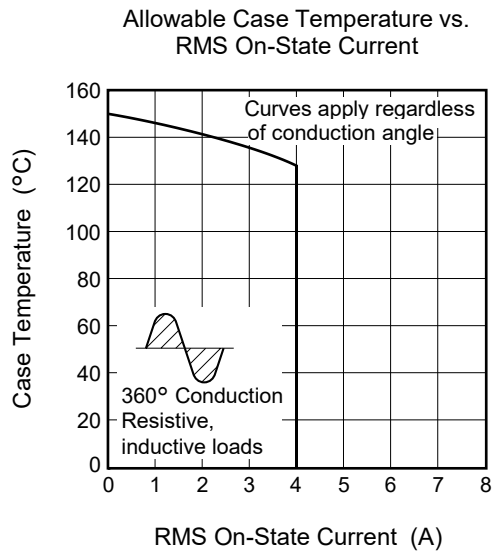
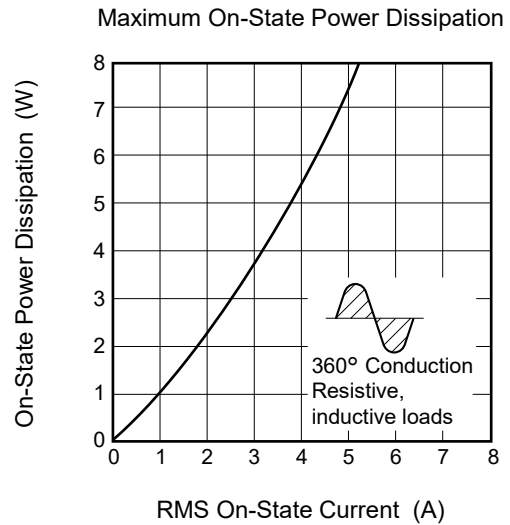
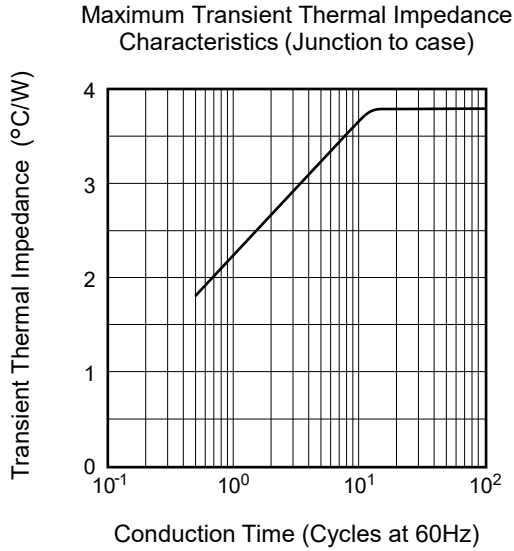


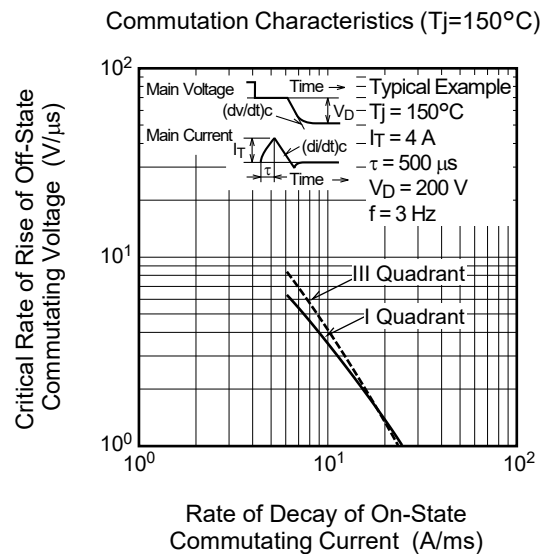
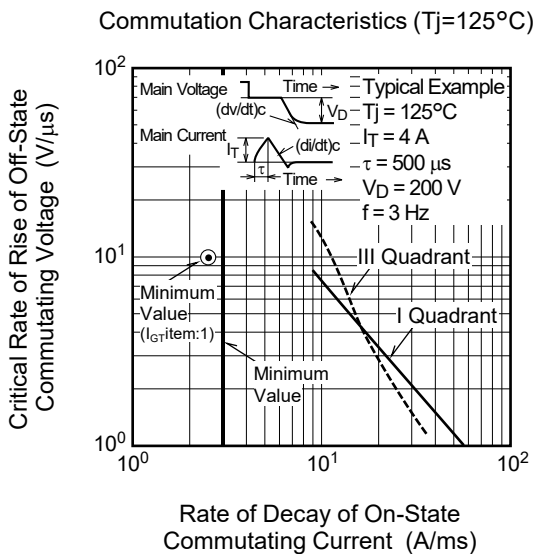
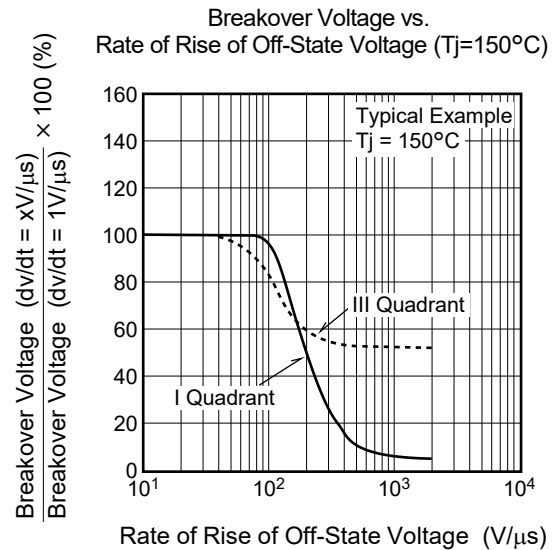
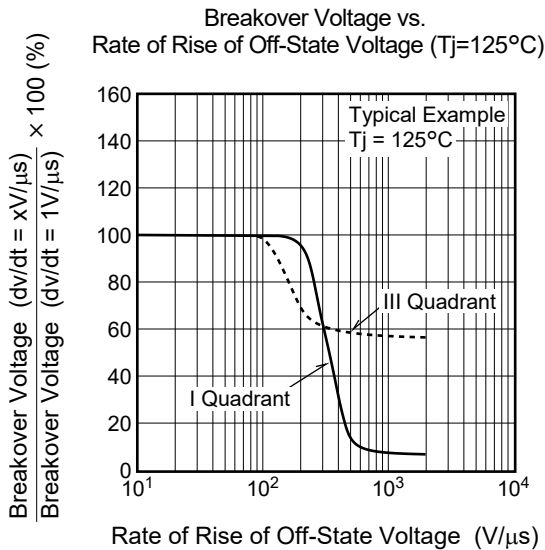
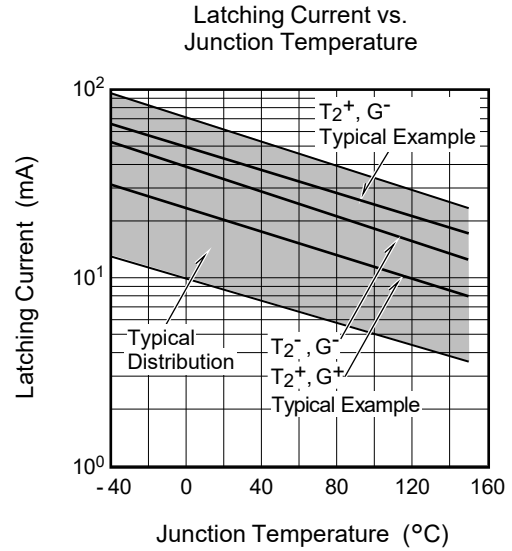
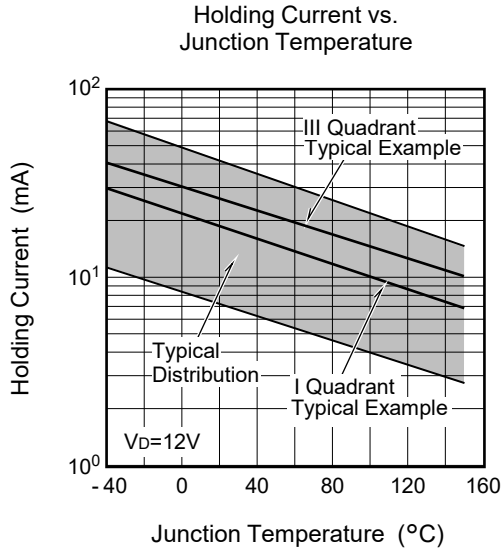
Gate Trigger Voltage vs. Junction Temperature



Gate Trigger Current vs. Gate Current Pulse Width

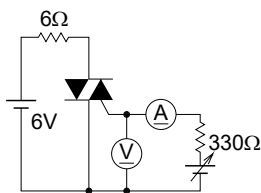




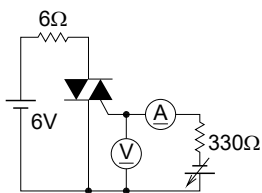


Gate Trigger Characteristics Test Circuits

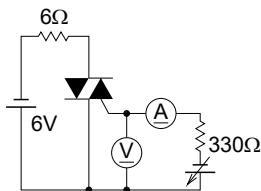
Recommended peripheral components for Triac



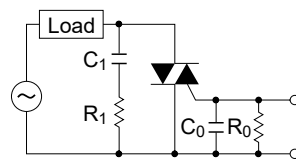
Test Procedure I



Test Procedure II



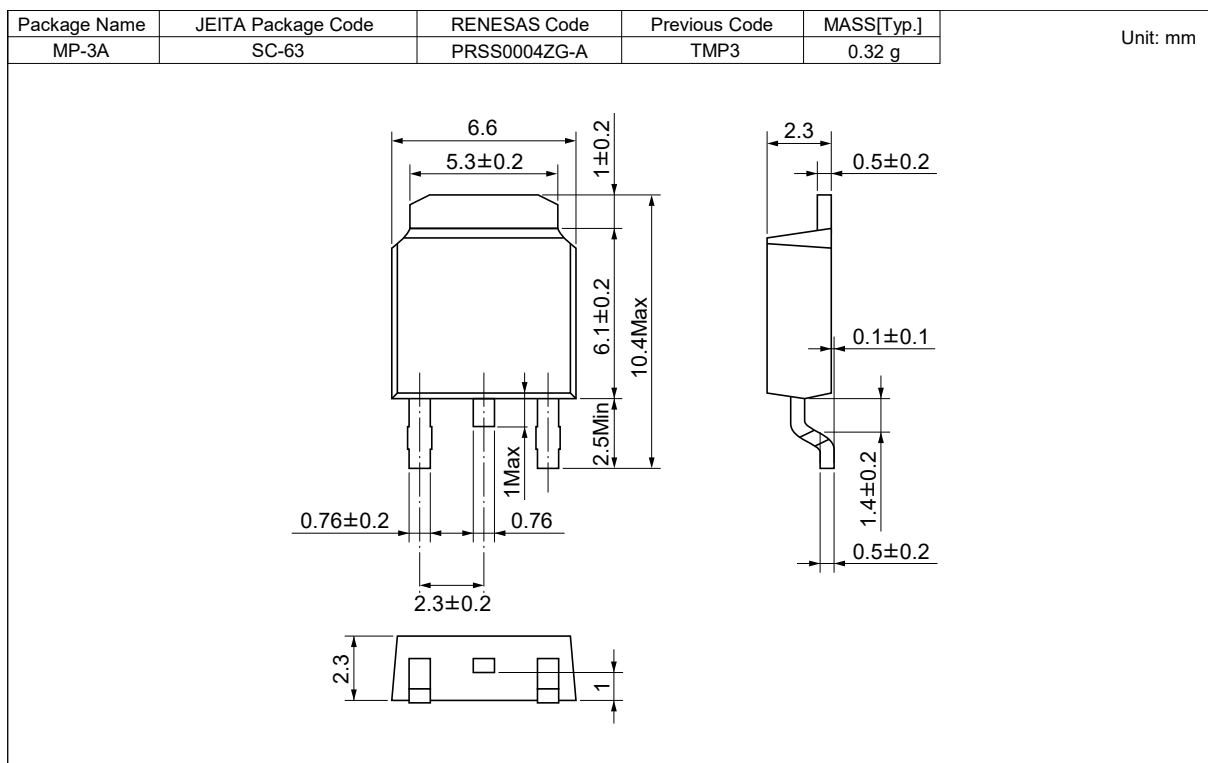
Test Procedure III



$C_1 = 0.1 \text{ to } 0.47 \mu\text{F}$ $C_0 = 0.1 \mu\text{F}$
 $R_1 = 47 \text{ to } 100 \Omega$ $R_0 = 100 \Omega$

Package Dimensions

Package Name: MP-3A



Ordering Information

Orderable Part Number	Package	Packing ^{Note5}	Quantity	Remark
BCR4AS-16LHT13#B00	MP-3A	Embossed tape	3000 pcs.	
BCR4AS16LH1T13#B00	MP-3A	Embossed tape	3000 pcs.	IGT item:1
BCR4AS-16LH#B00	MP-3A	Tube	75 pcs.	Tube packing is to be abolished.
BCR4AS-16LH-1#B00	MP-3A	Tube	75 pcs.	Tube packing is to be abolished. IGT item:1

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

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