

BCR3KM-14

LOW POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE

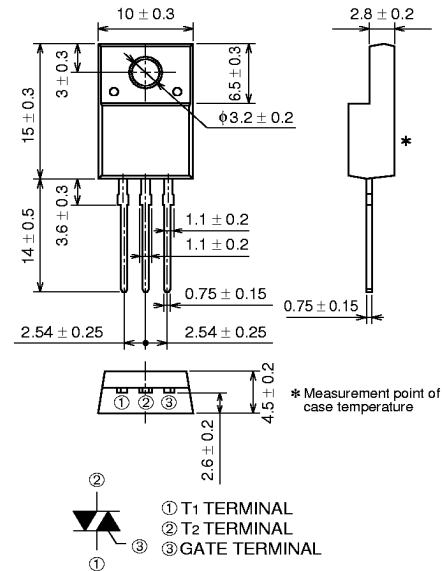
BCR3KM-14



- I_T (RMS) 3A
- V_{DRM} 700V
- $I_{FGT\ I}$, $I_{RGT\ I}$, $I_{RGT\ III}$ 30mA
- V_{iso} 2000V

OUTLINE DRAWING

Dimensions in mm



TO-220FN

APPLICATION

Contactless AC switches, light dimmer, electric blankets, control of household equipment such as electric fan, solenoid drivers, small motor control, other general purpose control applications

MAXIMUM RATINGS

Symbol	Parameter	Voltage class	Unit
		14	
V_{DRM}	Repetitive peak off-state voltage*1	700	V
V_{DSM}	Non-repetitive peak off-state voltage*1	840	V

Symbol	Parameter	Conditions	Ratings	Unit
I_T (RMS)	RMS on-state current	Commercial frequency, sine full wave 360° conduction, $T_c=108^\circ\text{C}$	3	A
I_{TSM}	Surge on-state current	60Hz sinewave 1 full cycle, peak value, non-repetitive	30	A
I^2_t	I^2_t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	3.7	A ² s
P_{GM}	Peak gate power dissipation		3	W
P_G (AV)	Average gate power dissipation		0.3	W
V_{GM}	Peak gate voltage		6	V
I_{GM}	Peak gate current		0.5	A
T_j	Junction temperature		-40 ~ +125	°C
T_{stg}	Storage temperature		-40 ~ +125	°C
—	Weight	Typical value	2.0	g
V_{iso}	Isolation voltage	$T_a=25^\circ\text{C}$, AC 1 minute, $T_1 \cdot T_2 \cdot G$ terminal to case	2000	V

*1. Gate open.

Feb.1999



BCR3KM-14

LOW POWER USE

INSULATED TYPE, PLANAR PASSIVATION TYPE

ELECTRICAL CHARACTERISTICS

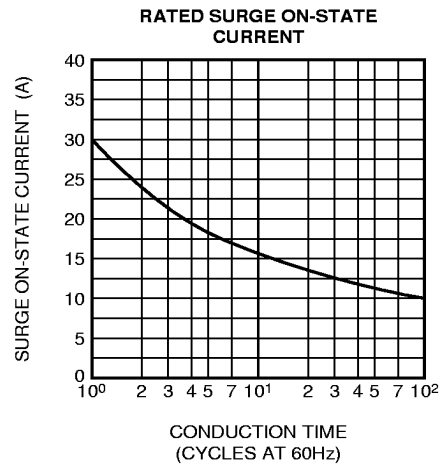
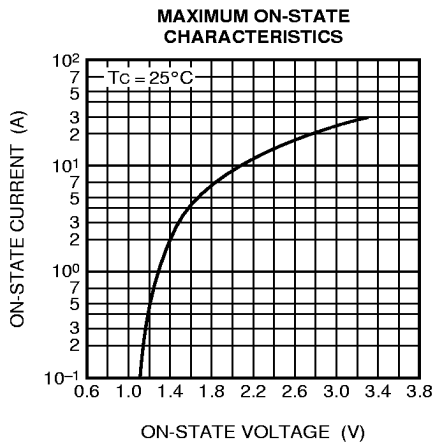
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDRM	Repetitive peak off-state current	T _j =125°C, V _{DRM} applied	—	—	2.0	mA
V _{TM}	On-state voltage	T _c =25°C, I _{TM} =4.5A, Instantaneous measurement	—	—	1.6	V
V _{FGT} I	Gate trigger voltage	T _j =25°C, V _D =6V, R _L =6Ω, R _G =330Ω	—	—	1.5	V
V _{RGT} I			—	—	1.5	V
V _{RGT} III			—	—	1.5	V
I _{FGT} I	Gate trigger current	T _j =25°C, V _D =6V, R _L =6Ω, R _G =330Ω	—	—	30	mA
I _{RGT} I			—	—	30	mA
I _{RGT} III			—	—	30	mA
V _{GD}	Gate non-trigger voltage	T _j =125°C, V _D =1/2V _{DRM}	0.2	—	—	V
R _{th} (j-c)	Thermal resistance	Junction to case *3	—	—	4.0	°C/W
(dv/dt) _c	Critical-rate of rise of off-state commutating voltage		*2	—	—	V/μs

*2. The critical-rate of rise of the off-state commutating voltage is shown in the table below.

*3. The contact thermal resistance R_{th} (c-t) in case of greasing is 0.5°C/W.

Voltage class	V _{DRM} (V)	(dv/dt) _c			Test conditions	Commutating voltage and current waveforms (inductive load)
		Symbol	Min.	Unit		
14	700	R	—	V/μs	1. Junction temperature T _j =125°C 2. Rate of decay of on-state commutating current (di/dt) _c =-1.5A/ms 3. Peak off-state voltage V _D =400V	
		L	5			

PERFORMANCE CURVES



Feb.1999

