

BCR12KM-14

MEDIUM POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE

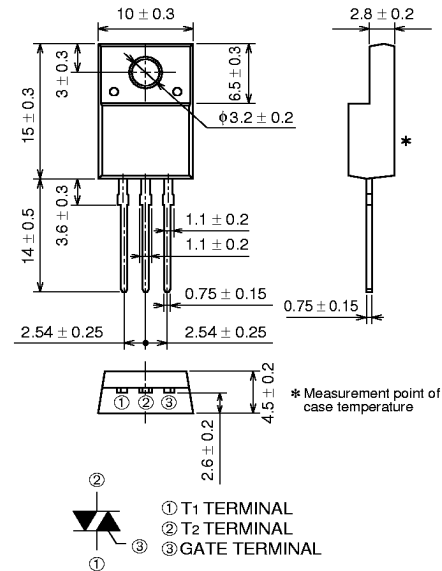
BCR12KM-14



- IT (RMS) 12A
- VDRM 700V
- IFGT I , IRGT I , IRGT III 30mA
- V_{iso} 2000V

OUTLINE DRAWING

Dimensions in mm



TO-220FN

APPLICATION

Switching mode power supply, light dimmer, electric flasher unit, hair driver,
control of household equipment such as TV sets • stereo • refrigerator • washing machine •
infrared kotatsu • carpet, solenoid drivers, small motor control, copying machine, electric tool

MAXIMUM RATINGS

Symbol	Parameter	Voltage class	Unit
		14	
VDRM	Repetitive peak off-state voltage*1	700	V
VDSM	Non-repetitive peak off-state voltage*1	840	V

Symbol	Parameter	Conditions	Ratings	Unit
IT (RMS)	RMS on-state current	Commercial frequency, sine full wave 360° conduction, T _c =81°C	12	A
ITSM	Surge on-state current	60Hz sinewave 1 full cycle, peak value, non-repetitive	120	A
I _t ²	I _t ² for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	60	A ² s
PGM	Peak gate power dissipation		5	W
PG (AV)	Average gate power dissipation		0.5	W
VGM	Peak gate voltage		10	V
IGM	Peak gate current		2	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°C, AC 1 minute, T ₁ · T ₂ · G terminal to case	2000	V

*1. Gate open.

Feb.1999



MITSUBISHI
ELECTRIC

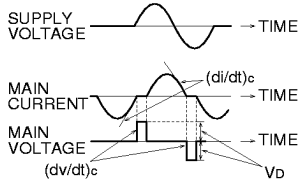
BCR12KM-14

MEDIUM POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDRM	Repetitive peak off-state current	Tj=125°C, VDRM applied	—	—	2.0	mA
VTM	On-state voltage	Tc=25°C, ITM=20A, Instantaneous measurement	—	—	1.6	V
VFGT I	Gate trigger voltage	Tj=25°C, VD=6V, RL=6Ω, RG=330Ω	—	—	1.5	V
VRGT I			—	—	1.5	V
VRGT III			—	—	1.5	V
IFGT I	Gate trigger current	Tj=25°C, VD=6V, RL=6Ω, RG=330Ω	—	—	30	mA
IRGT I			—	—	30	mA
IRGT III			—	—	30	mA
VGD	Gate non-trigger voltage	Tj=125°C, VD=1/2VDRM	0.2	—	—	V
Rth (j-c)	Thermal resistance	Junction to case *3	—	—	3.0	°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 Rth (c-f) in case of greasing is 0.5°C/W.

Voltage class	VDRM (V)	(dv/dt)c			Test conditions	Commutating voltage and current waveforms (inductive load)
		Symbol	Min.	Unit		
14	700	R	—	V/μs	1. Junction temperature Tj=125°C 2. Rate of decay of on-state commutating current (di/dt)c=−6.0A/ms 3. Peak off-state voltage VD=400V	
		L	10			

PERFORMANCE CURVES

