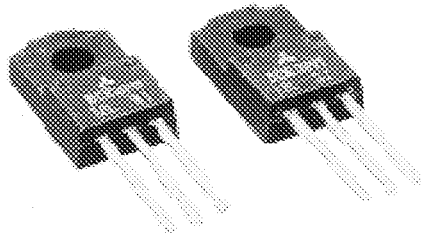


BCR3PM

LOW POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE

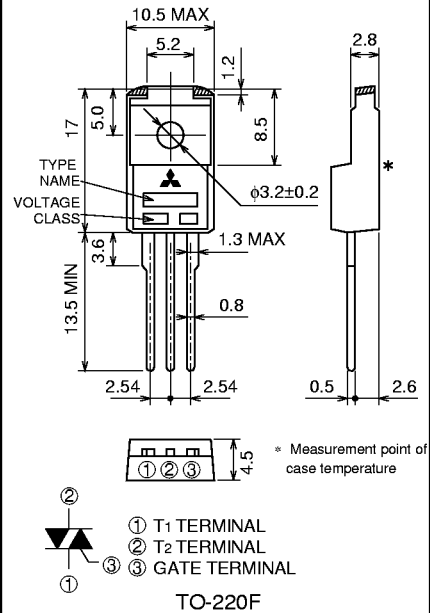
BCR3PM



- I_T (RMS) **3A**
- V_{DRM} **400V/600V**
- I_{FGT} I, I_{RGT} I, I_{RGT} II **30mA (10mA) *5**
- V_{iso} **1500V**
- **UL Recognized: File No. E80276**

OUTLINE DRAWING

Dimensions
in mm



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
		8	12	
V_{DRM}	Repetitive peak off-state voltage *1	400	600	V
V_{DSM}	Non-repetitive peak off-state voltage *1	500	720	V

Symbol	Parameter	Conditions	Ratings	Unit
I_T (RMS)	RMS on-state current	Commercial frequency, sine full wave 360° conduction, $T_c=107^\circ\text{C}$	3.0	A
I_{TSM}	Surge on-state current	60Hz sinewave 1 full cycle, peak value, non-repetitive	30	A
P_t	P_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	1500	V

*1. Gate open.

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ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I_{DRM}	Repetitive peak off-state current	$T_J=125^{\circ}\text{C}$, V_{DRM} applied	—	—	2.0	mA
V_{TM}	On-state voltage	$T_C=25^{\circ}\text{C}$, $I_{TM}=4.5\text{A}$, Instantaneous measurement	—	—	1.5	V
$V_{FGT\text{ I}}$	Gate trigger voltage *2	$T_J=25^{\circ}\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	—	—	1.5	V
$V_{RGT\text{ I}}$			—	—	1.5	V
$V_{RGT\text{ III}}$			—	—	1.5	V
$I_{FGT\text{ I}}$	Gate trigger current *2	$T_J=25^{\circ}\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	—	—	30*5	mA
$I_{RGT\text{ I}}$			—	—	30*5	mA
$I_{RGT\text{ III}}$			—	—	30*5	mA
V_{GD}	Gate non-trigger voltage	$T_J=125^{\circ}\text{C}$, $V_D=1/2V_{DRM}$	0.2	—	—	V
$R_{\theta h(j-c)}$	Thermal resistance	Junction to case *4	—	—	4.5	$^{\circ}\text{C/W}$
$(dv/dt)_c$	Critical-rate of rise of off-state commutating voltage		*3	—	—	$\text{V}/\mu\text{s}$

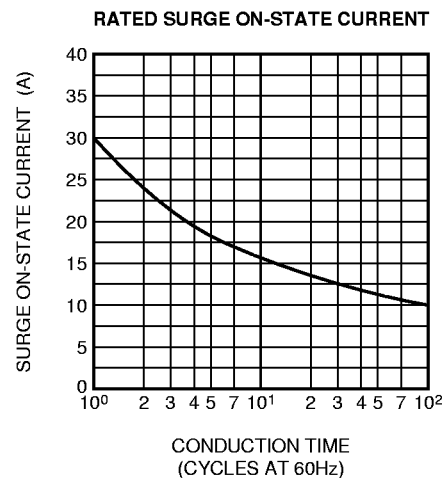
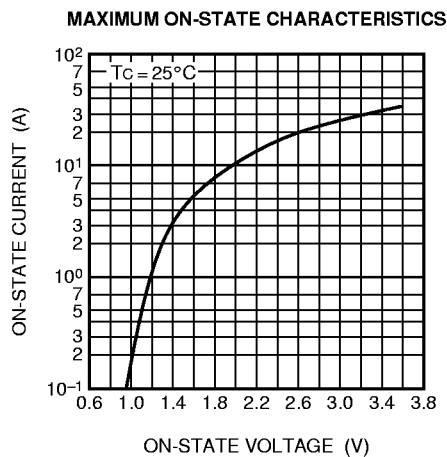
*2. Measurement using the gate trigger characteristics measurement circuit.

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

*4. The contact thermal resistance $R_{\theta h(j-c)}$ in case of greasing is 0.5°C/W .*5. High sensitivity ($I_{GT}\leq 10\text{mA}$) is also available.

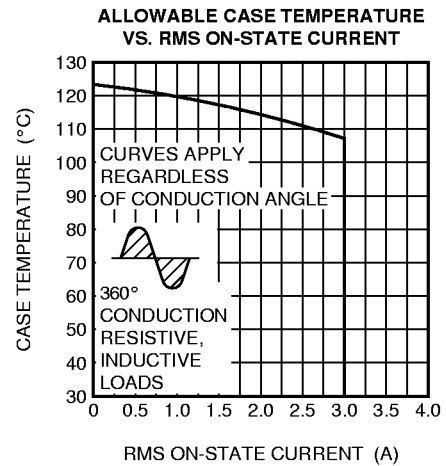
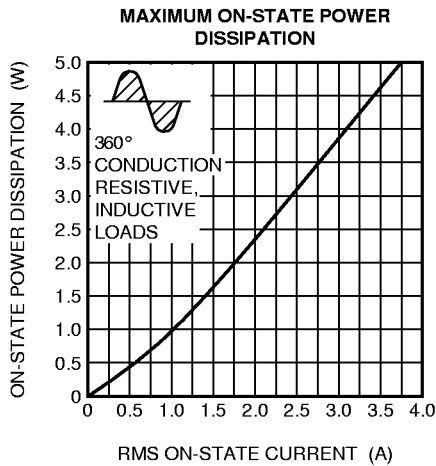
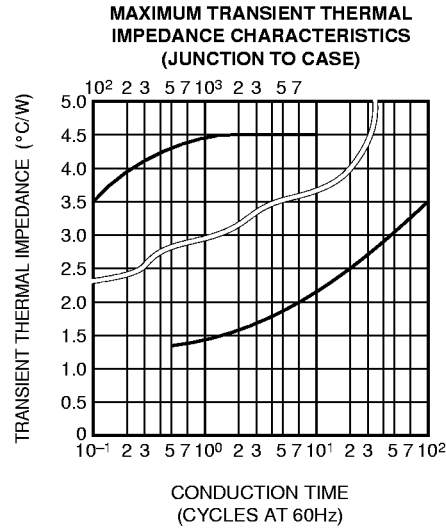
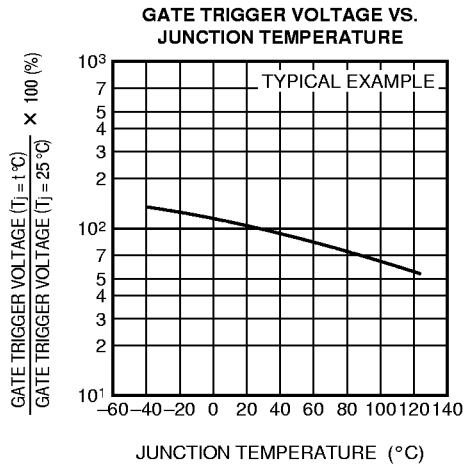
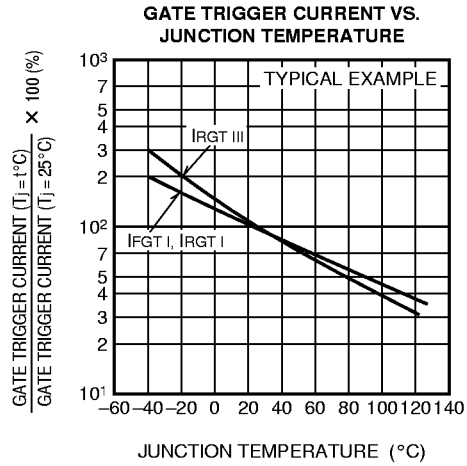
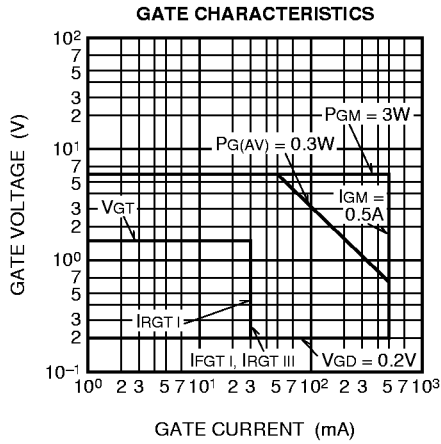
Voltage class	V_{DRM} (V)	$(dv/dt)_c$		Test conditions	Commutating voltage and current waveforms (inductive load)
		Min.	Unit		
8	400	5	$\text{V}/\mu\text{s}$	1. Junction temperature $T_J=125^{\circ}\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c=1.5\text{A/ms}$ 3. Peak off-state voltage $V_D=400\text{V}$	
12	600				

PERFORMANCE CURVES



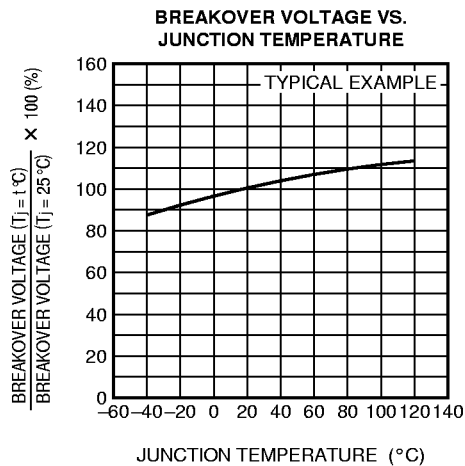
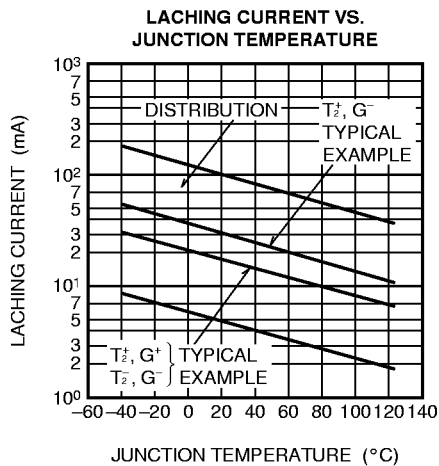
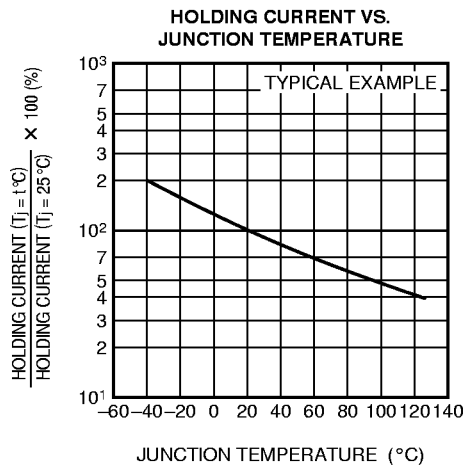
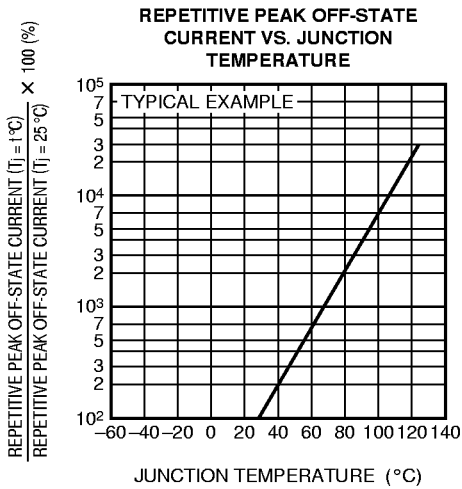
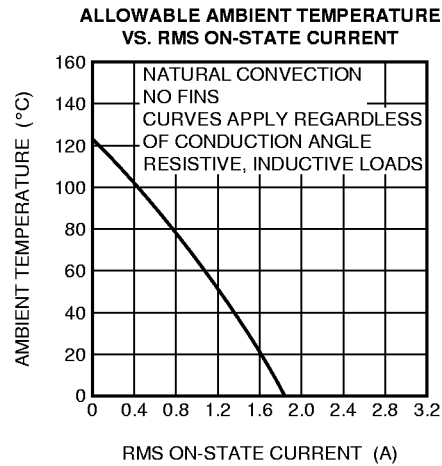
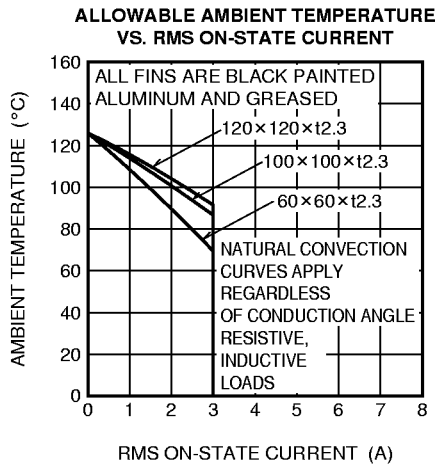
BCR3PM

LOW POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE



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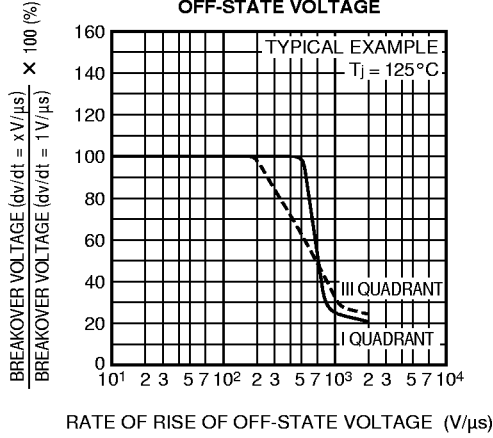
LOW POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE



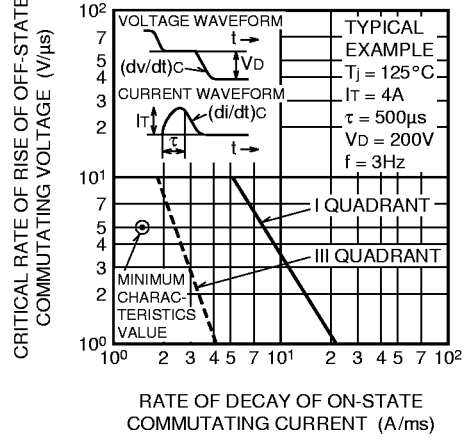
BCR3PM

LOW POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE

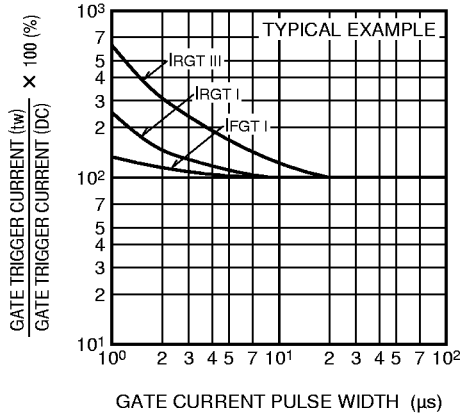
BREAKOVER VOLTAGE VS.
RATE OF RISE OF
OFF-STATE VOLTAGE



COMMUTATION CHARACTERISTICS



GATE TRIGGER CURRENT VS.
GATE CURRENT PULSE WIDTH



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS

