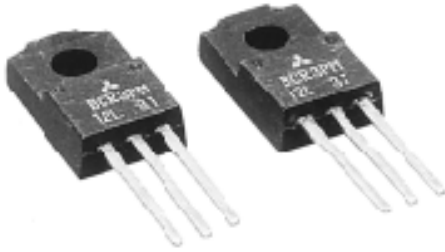


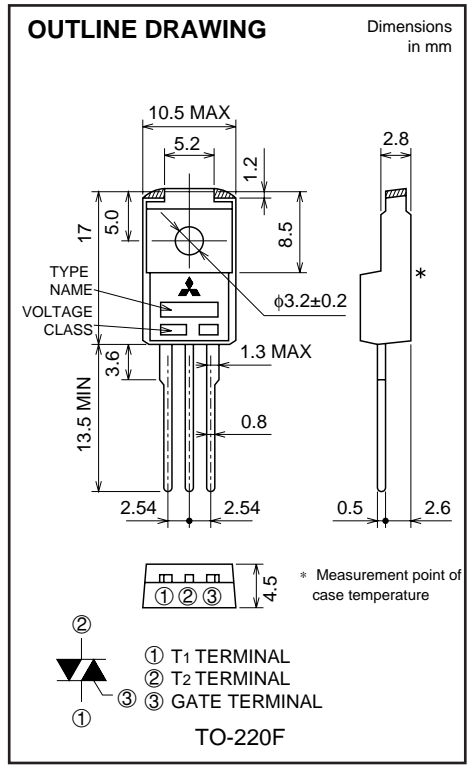
BCR3PM

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 III}** **30mA (10mA) *5**
- **Viso**..... **1500V**
- **UL Recognized: File No. E80276**



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°C	3.0	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°C, AC 1 minute, T ₁ · T ₂ · G terminal to case	1500	V

*1. Gate open.

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LOW POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE

ELECTRICAL CHARACTERISTICS

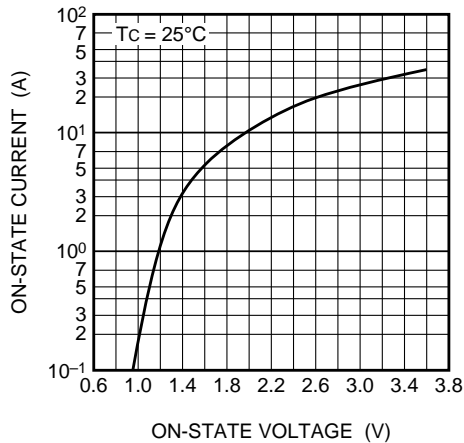
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDRM	Repetitive peak off-state current	T _j =125°C, V _{DRM} applied	—	—	2.0	mA
V _{TM}	On-state voltage	T _c =25°C, I _{TM} =4.5A, Instantaneous measurement	—	—	1.5	V
V _{FGT I}	Gate trigger voltage *2	T _j =25°C, V _D =6V, R _L =6Ω, R _G =330Ω	I	—	1.5	V
V _{RGT I}			II	—	1.5	V
V _{RGT III}			III	—	1.5	V
I _{FGT I}	Gate trigger current *2	T _j =25°C, V _D =6V, R _L =6Ω, R _G =330Ω	I	—	30*5	mA
I _{RGT I}			II	—	30*5	mA
I _{RGT III}			III	—	30*5	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 *4	—	—	4.5	°C/W
(dv/dt) _c	Critical-rate of rise of off-state commutating voltage		*3	—	—	V/μs

*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_{th(c-f)} in case of greasing is 0.5°C/W.
 *5. High sensitivity (I_{GT}≤10mA) is also available.

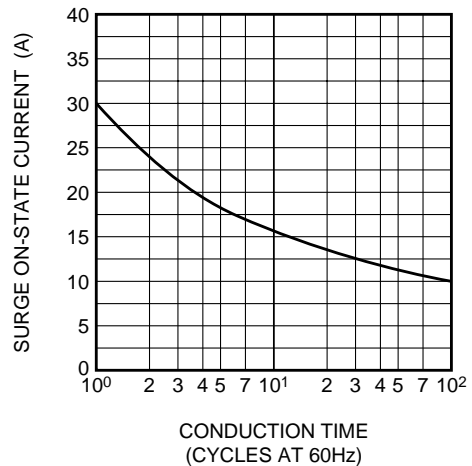
Voltage class	V _{DRM} (V)	(dv/dt) _c		Test conditions	Commutating voltage and current waveforms (inductive load)
		Min.	Unit		
8	400	5	V/μs	1. Junction temperature T _j =125°C 2. Rate of decay of on-state commutating current (di/dt) _c =-1.5A/ms 3. Peak off-state voltage V _D =400V	
12	600				

PERFORMANCE CURVES

MAXIMUM ON-STATE CHARACTERISTICS

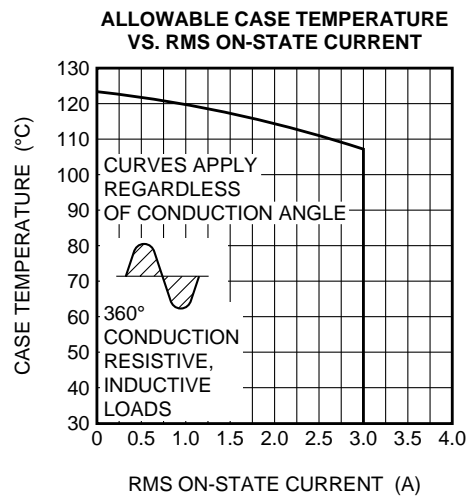
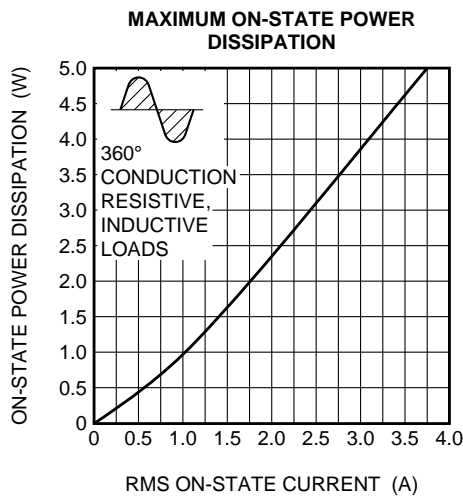
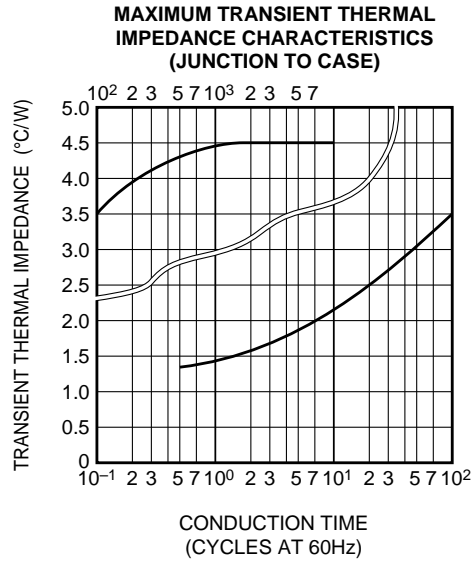
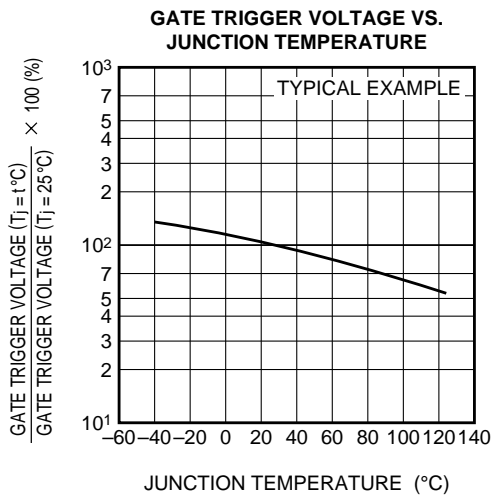
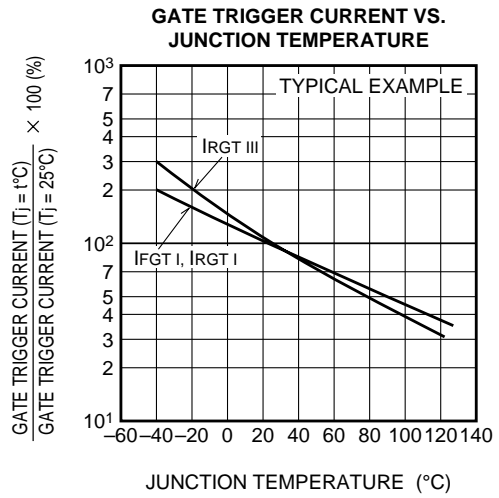
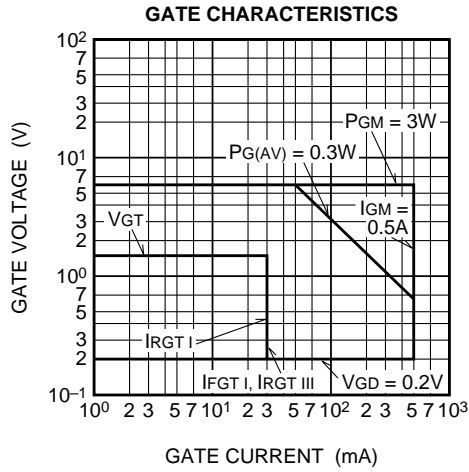


RATED SURGE ON-STATE CURRENT



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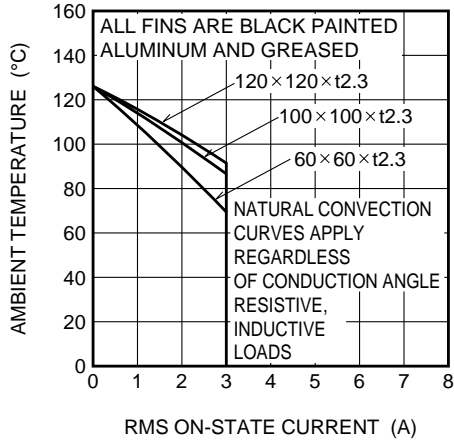
LOW POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE



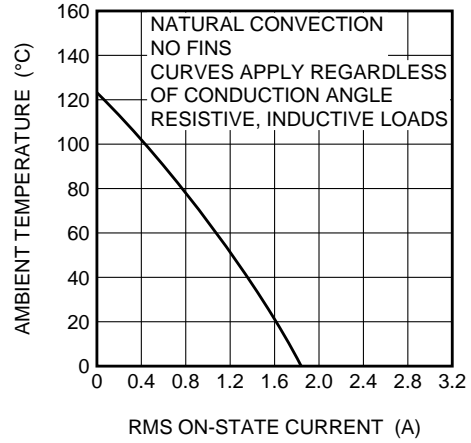
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LOW POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE

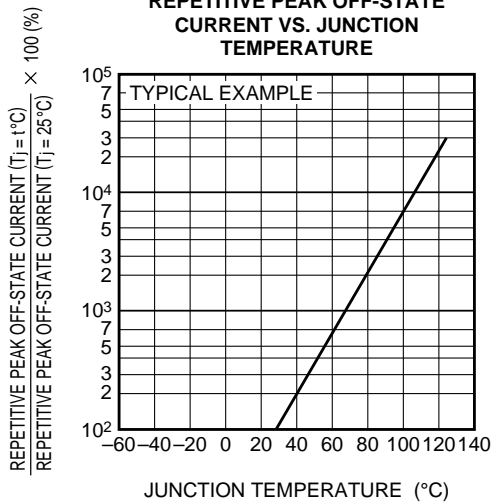
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



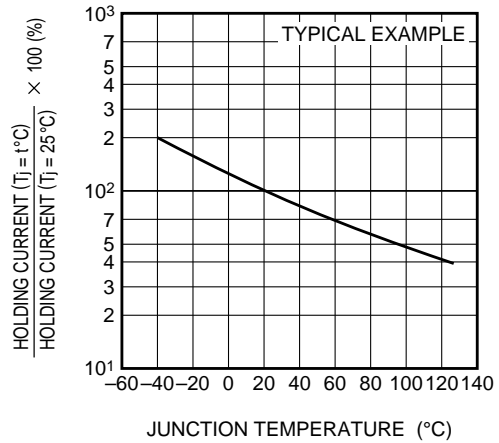
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



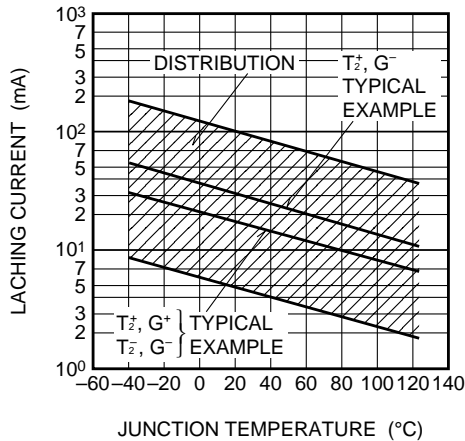
REPETITIVE PEAK OFF-STATE CURRENT VS. JUNCTION TEMPERATURE



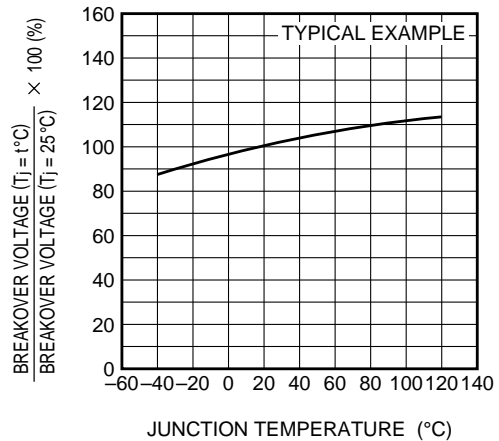
HOLDING CURRENT VS. JUNCTION TEMPERATURE



LATCHING CURRENT VS. JUNCTION TEMPERATURE



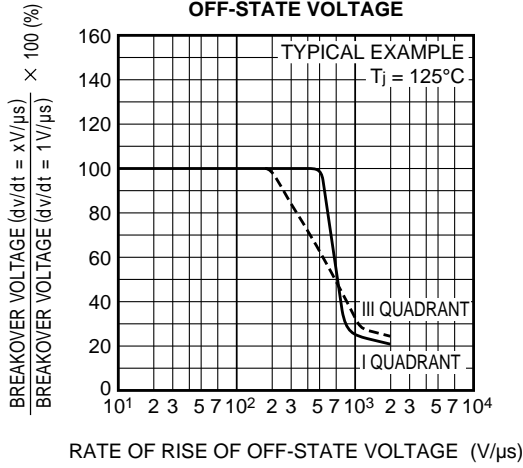
BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE



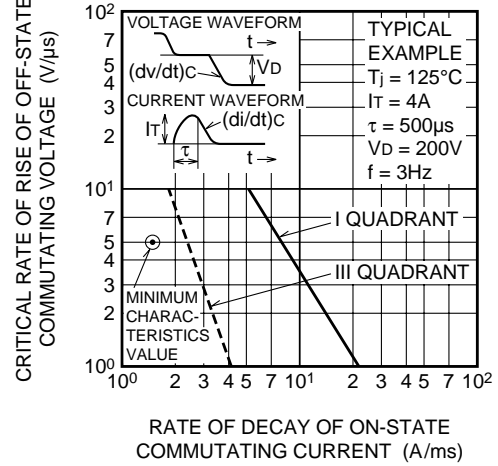
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LOW POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE

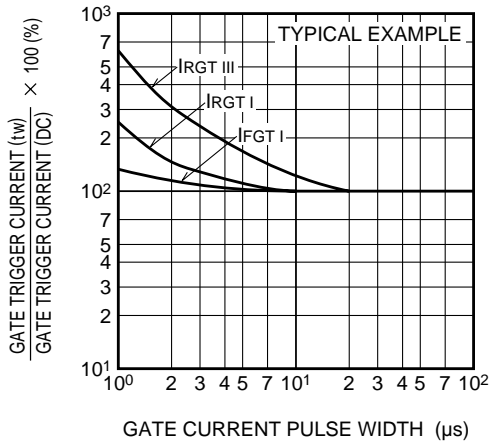
BREAKOVER VOLTAGE VS. RATE OF RISE OF OFF-STATE VOLTAGE



COMMUTATION CHARACTERISTICS



GATE TRIGGER CURRENT VS. GATE CURRENT PULSE WIDTH



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS

