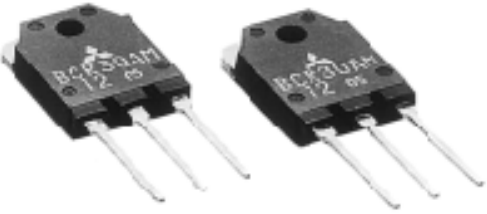


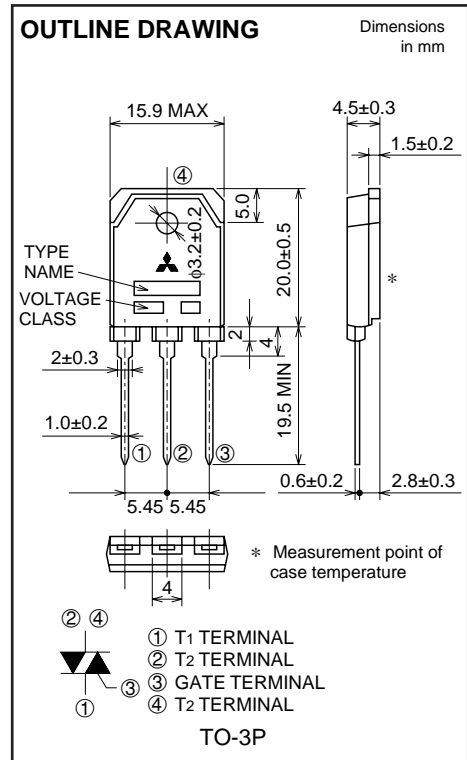
BCR30AM

MEDIUM POWER USE
NON-INSULATED TYPE, PLANAR PASSIVATION TYPE

BCR30AM



- I_T (RMS) 30A
- V_{DRM} 400V/600V
- IFGT I , IRGT I , IRGT III 50mA



APPLICATION

Contactless AC switches, light dimmer,
on/off and speed control of small induction motors, on/off control of copier lamps,
microwave ovens

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, $T_c=75^\circ\text{C}$	30	A
I_{TSM}	Surge on-state current	60Hz sinewave 1 full cycle, peak value, non-repetitive	300	A
I^2_t	I^2_t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	378	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	4.8	g

*1. Gate open.

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MEDIUM POWER USE

NON-INSULATED TYPE, PLANAR PASSIVATION TYPE

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit	
			Min.	Typ.	Max.		
IDRM	Repetitive peak off-state current	$T_j=125^\circ\text{C}$, V_{DRM} applied	—	—	3.0	mA	
VTM	On-state voltage	$T_c=25^\circ\text{C}$, $I_{\text{TM}}=45\text{A}$, Instantaneous measurement	—	—	1.6	V	
VFGT I	Gate trigger voltage *2	$T_j=25^\circ\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	I	—	—	2.5	V
VRGT I			II	—	—	2.5	V
VRGT III			III	—	—	2.5	V
IFGT I	Gate trigger current *2	$T_j=25^\circ\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	I	—	—	50	mA
IRGT I			II	—	—	50	mA
IRGT III			III	—	—	50	mA
VGD	Gate non-trigger voltage	$T_j=125^\circ\text{C}$, $V_D=1/2V_{\text{DRM}}$	0.2	—	—	V	
$R_{\text{th}}(j-c)$	Thermal resistance	Junction to case *4	—	—	1.2	$^\circ\text{C}/\text{W}$	
$(dv/dt)_c$	Critical-rate of rise of off-state commutating voltage		*3	—	—	$\text{V}/\mu\text{s}$	

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

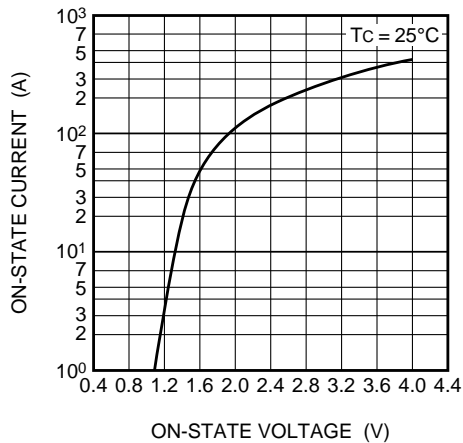
*3. The critical-rate of rise of the off-state commutating voltage is shown in the table below.

*4. The contact thermal resistance $R_{\text{th}}(b-f)$ in case of greasing is $0.3^\circ\text{C}/\text{W}$.

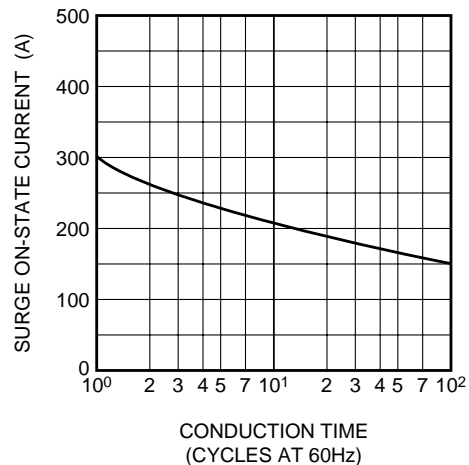
Voltage class	V_{DRM} (V)	$(dv/dt)_c$			Test conditions	Commutating voltage and current waveforms (inductive load)
		Symbol	Min.	Unit		
8	400	R	—	$\text{V}/\mu\text{s}$	1. Junction temperature $T_j=125^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c=-16\text{A}/\text{ms}$ 3. Peak off-state voltage $V_D=400\text{V}$	
		L	20			
12	600	R	—			
		L	20			

PERFORMANCE CURVES

MAXIMUM ON-STATE CHARACTERISTICS



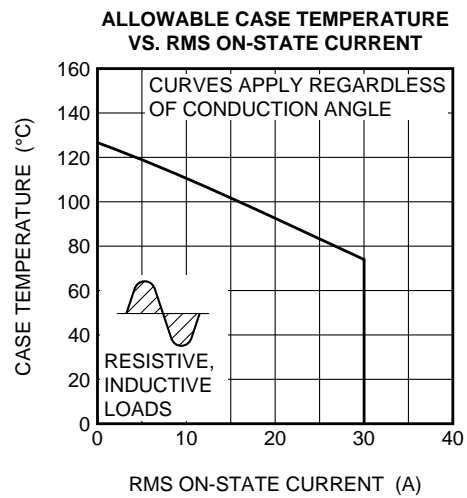
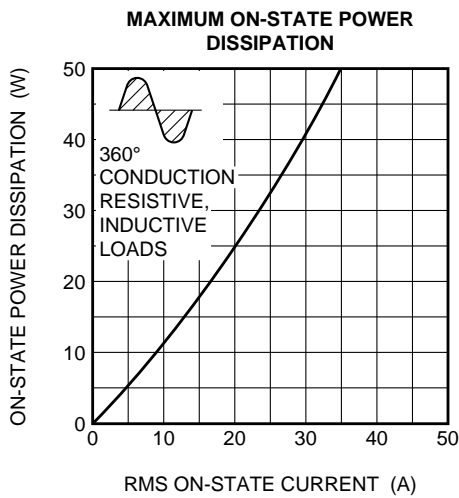
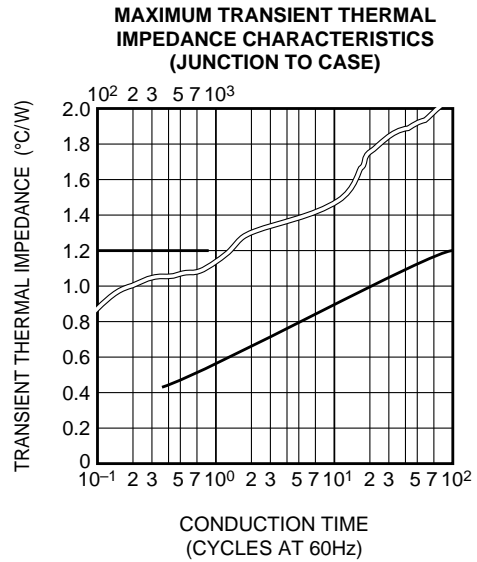
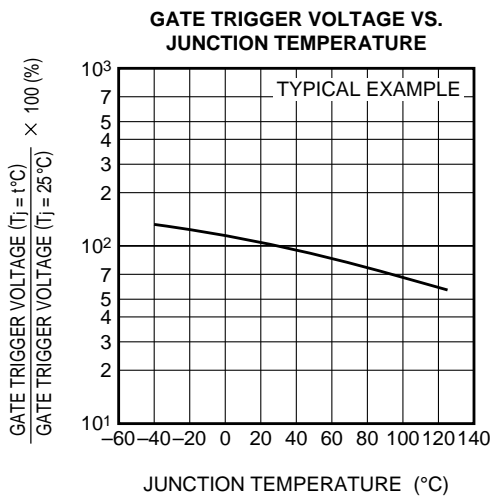
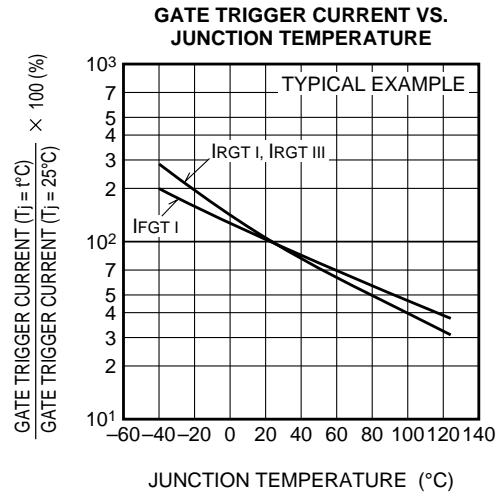
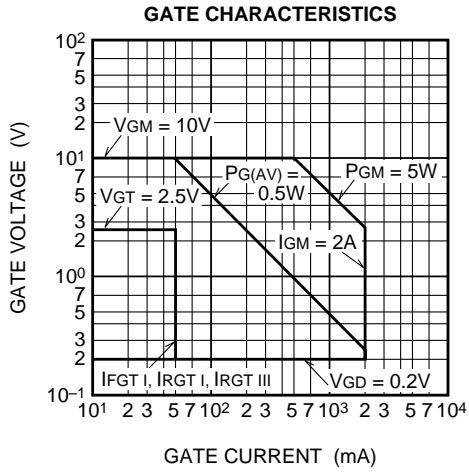
RATED SURGE ON-STATE CURRENT



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MEDIUM POWER USE

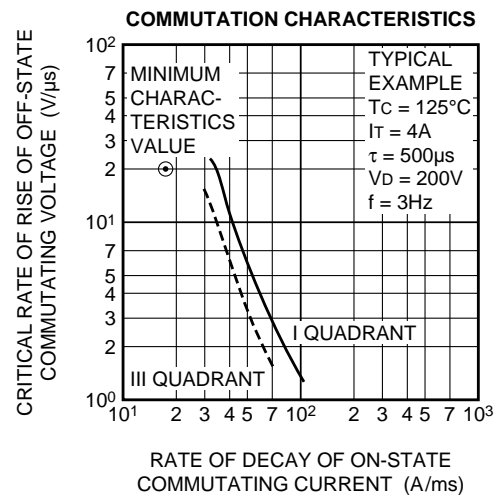
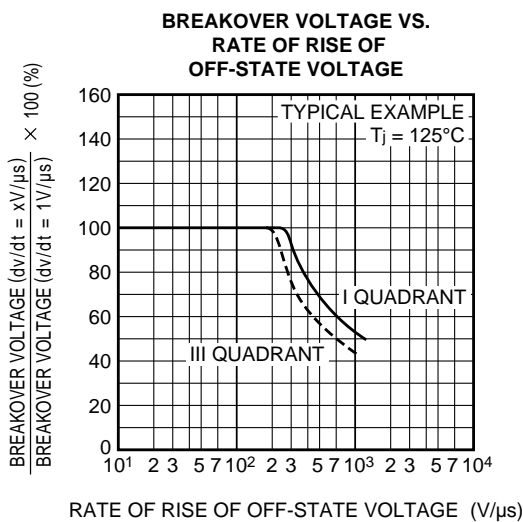
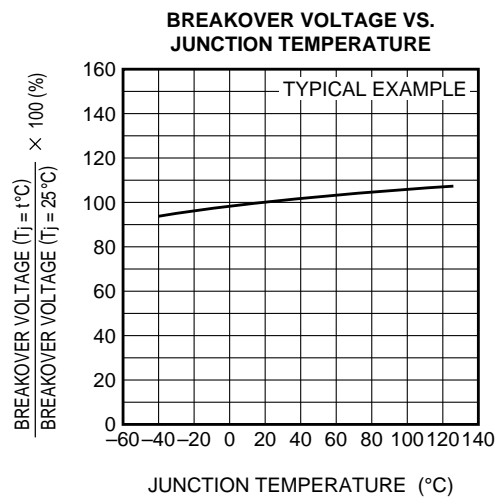
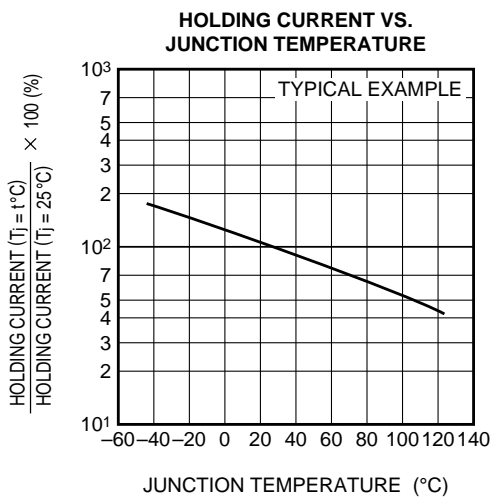
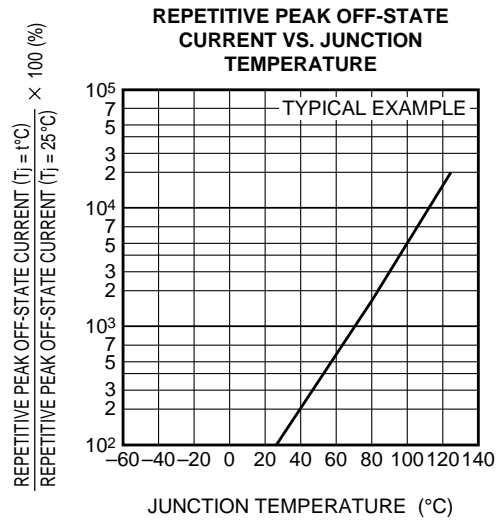
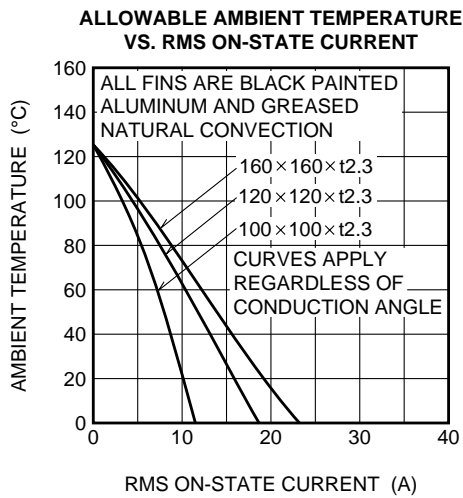
NON-INSULATED TYPE, PLANAR PASSIVATION TYPE



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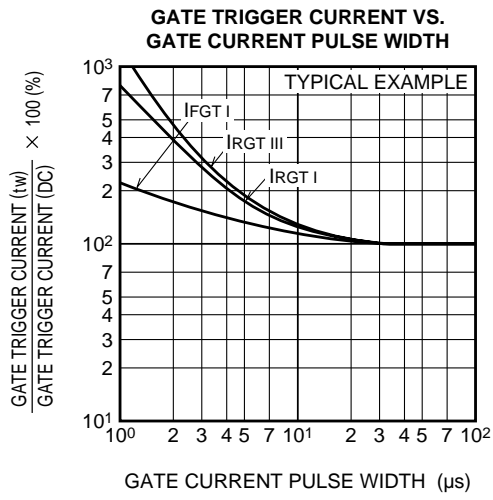
MEDIUM POWER USE

NON-INSULATED TYPE, PLANAR PASSIVATION TYPE



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MEDIUM POWER USE
NON-INSULATED TYPE, PLANAR PASSIVATION TYPE



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS

