

BCR25A, BCR25B

MEDIUM POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

BCR25A, BCR25B



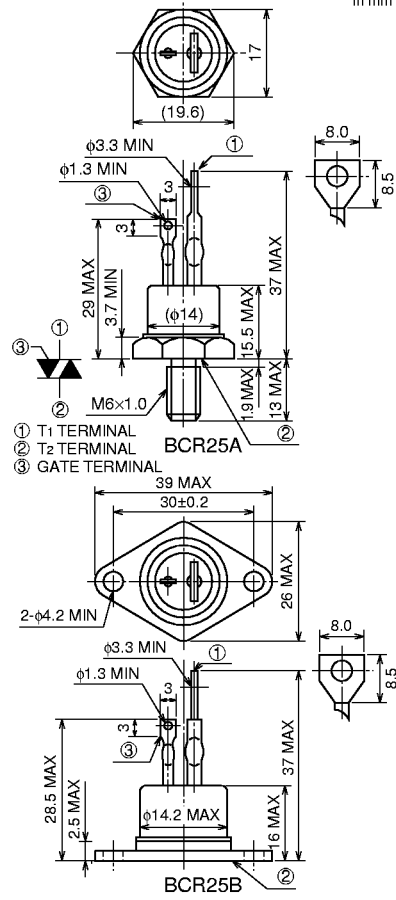
- I_T (RMS) 25A
- V_{DRM} 400V/500V
- I_{FGT} I, I_{RGT} III 50mA
- I_{RGT} I 75mA

APPLICATION

Contactless AC switches, light dimmer,
on/off control of copier lamps

OUTLINE DRAWING

Dimensions
in mm



MAXIMUM RATINGS

Symbol	Parameter	Voltage class		Unit
		8	10	
V_{DRM}	Repetitive peak off-state voltage *1	400	500	V
V_{DSM}	Non-repetitive peak off-state voltage *1	600	600	V

Symbol	Parameter	Conditions	Ratings	Unit
I_T (RMS)	RMS on-state current	Commercial frequency, sine full wave, 360° conduction, $T_c=92^\circ\text{C}$	25	A
I_{TSM}	Surge on-state current	60Hz sinewave 1 full cycle, peak value, non-repetitive	250	A
P_t	P_t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	262	A ² s
P_{GM}	Peak gate power dissipation		5.0	W
P_G (AV)	Average gate power dissipation		0.5	W
V_{GM}	Peak gate voltage		10	V
I_{GM}	Peak gate current		2.0	A
T_j	Junction temperature		-20 ~ +125	°C
T_{stg}	Storage temperature		-20 ~ +125	°C
—	Mounting torque	BCR25A only	30	kg·cm
			2.94	N·m
—	Weight	BCR25A (Typical value)	18	g
		BCR25B (Typical value)	23	

*1. Gate open.

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ELECTRICAL CHARACTERISTICS

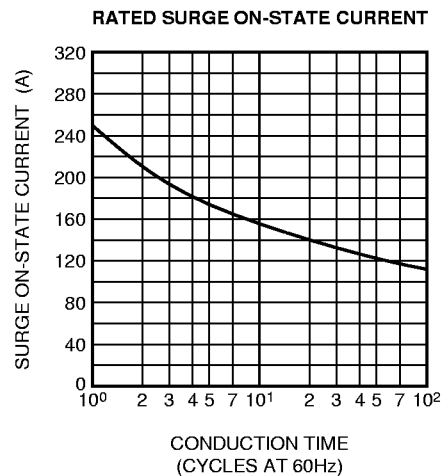
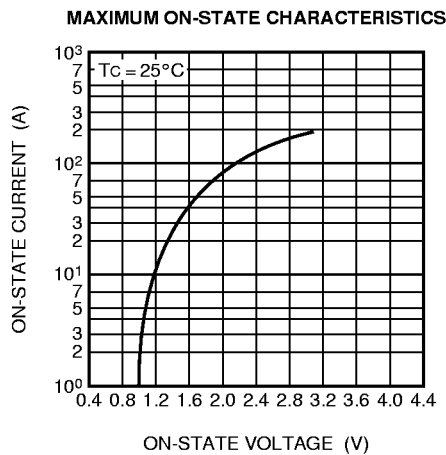
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I_{DRM}	Repetitive peak off-state current	$T_J=125^{\circ}\text{C}$, V_{DRM} applied	—	—	5.0	mA
V_{TM}	On-state voltage	$T_C=25^{\circ}\text{C}$, $I_{TM}=40\text{A}$, Instantaneous measurement	—	—	1.6	V
$V_{FGT\text{ I}}$	Gate trigger voltage *2	$T_J=25^{\circ}\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	—	—	3.0	V
$V_{RGT\text{ I}}$			—	—	3.0	V
$V_{RGT\text{ III}}$			—	—	3.0	V
$I_{FGT\text{ I}}$	Gate trigger current *2	$T_J=25^{\circ}\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	—	—	50	mA
$I_{RGT\text{ I}}$			—	—	75	mA
$I_{RGT\text{ III}}$			—	—	50	mA
V_{GD}	Gate non-trigger voltage	$T_J=125^{\circ}\text{C}$, $V_D=1/2V_{DRM}$	0.2	—	—	V
$R_{th(j-c)}$	Thermal resistance	Junction to case	—	—	1.0	$^{\circ}\text{C/W}$
$(dv/dt)_c$	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.

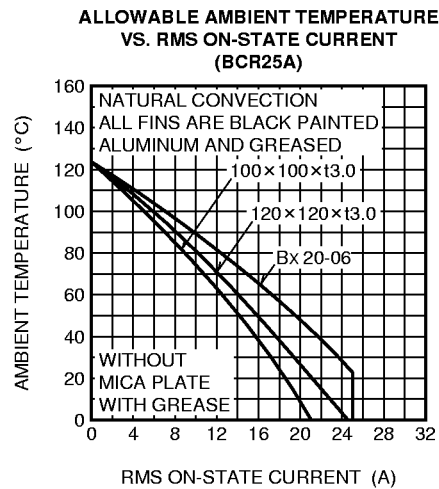
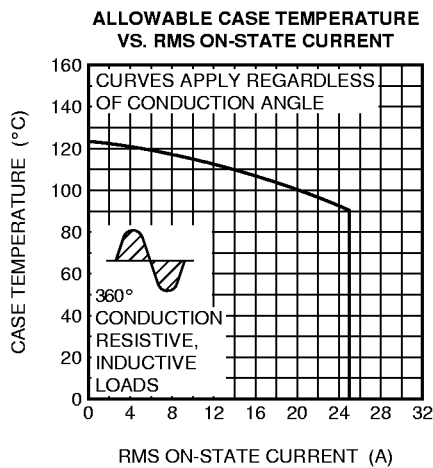
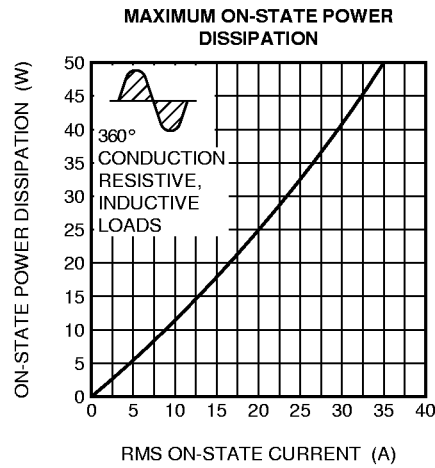
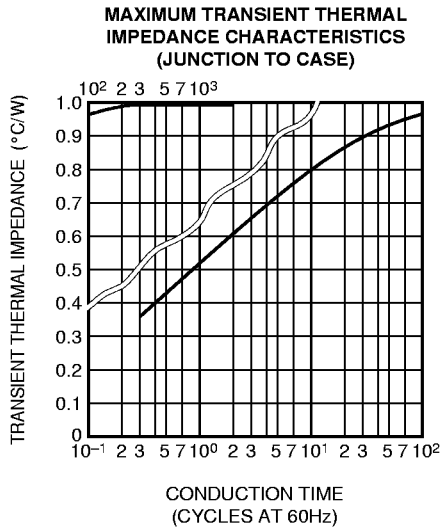
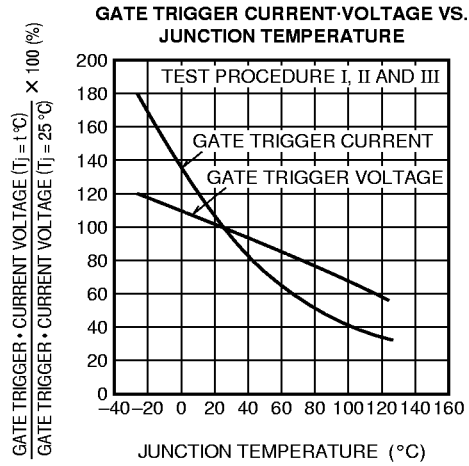
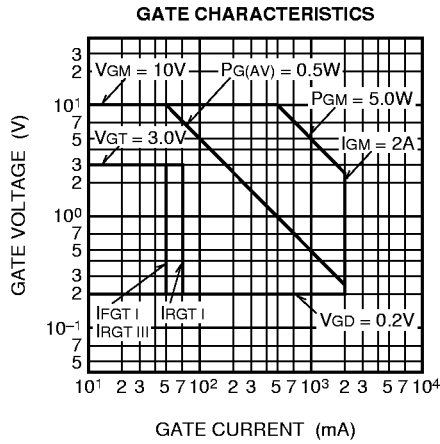
Voltage class	V_{DRM} (V)	$(dv/dt)_c$			Test conditions	Commutating voltage and current waveforms (inductive load)
		Symbol	Min.	Unit		
8	400	R	—	V/ μs	1. Junction temperature $T_J=125^{\circ}\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c=13.5\text{A/ms}$ 3. Peak off-state voltage $V_D=400\text{V}$	
		L	20			
10	500	R	—			
		L	20			

PERFORMANCE CURVES



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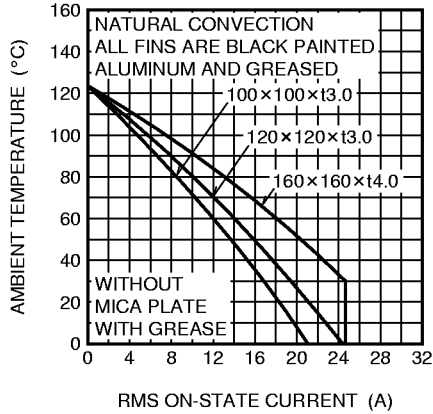


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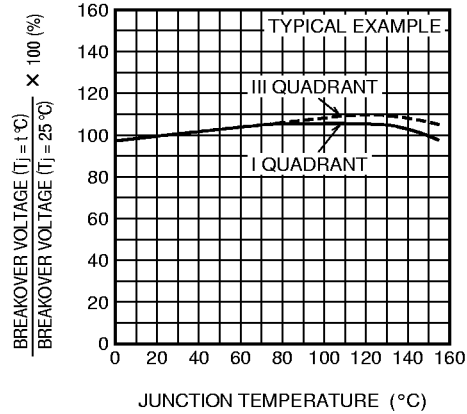
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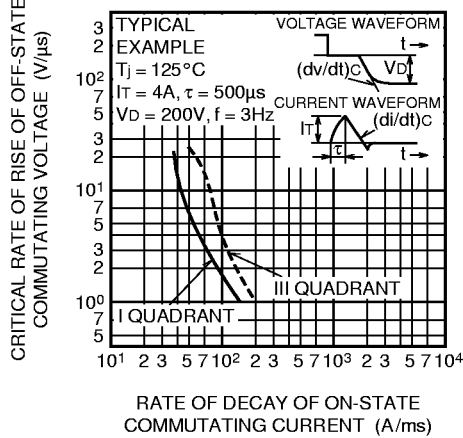
ALLOWABLE AMBIENT TEMPERATURE
VS. RMS ON-STATE CURRENT
(BCR25B)



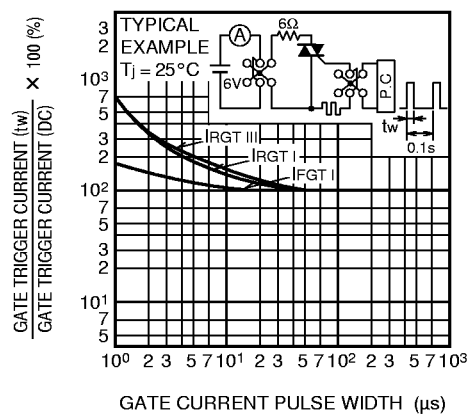
BREAKOVER VOLTAGE VS.
JUNCTION TEMPERATURE



COMMUTATION CHARACTERISTICS



GATE TRIGGER CURRENT VS.
GATE CURRENT PULSE WIDTH



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS

