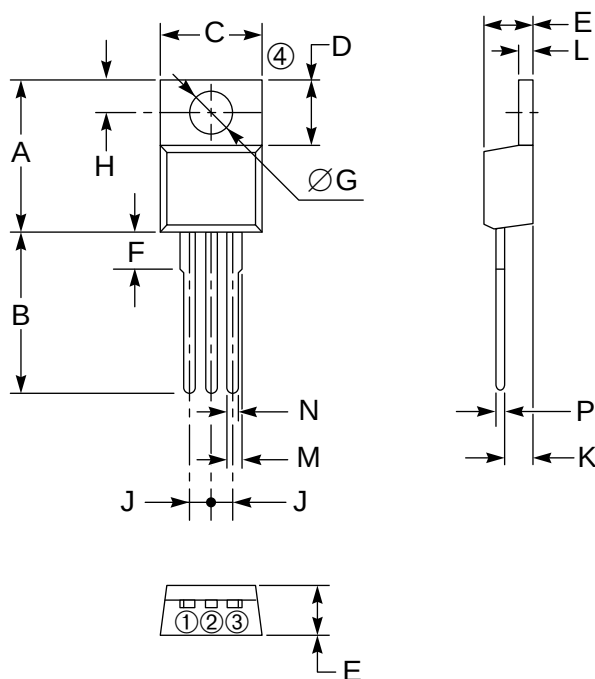


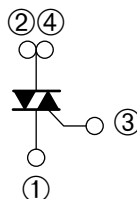
Triac 20 Ampere/400-600 Volts

OUTLINE DRAWING



CONNECTION DIAGRAM

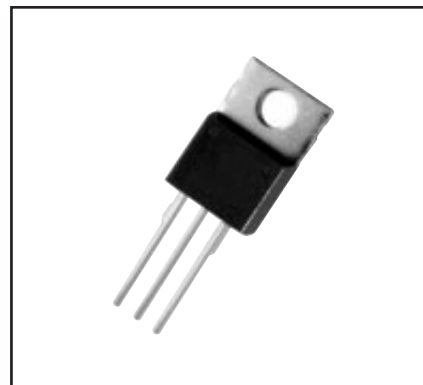
- ① T1 TERMINAL
- ② T2 TERMINAL
- ③ GATE
- ④ T2 TERMINAL



Outline Drawing (Conforms to TO-220)

Dimensions	Inches	Millimeters
A	0.63 Max.	16.0 Max.
B	0.49 Max.	12.5 Max.
C	0.41 Max.	10.5 Max.
D	0.28	7.0
E	0.18	4.5
F	0.15 Max.	3.8 Max.
G	0.142 ± 0.008 Dia.	3.6 ± 0.2 Dia.

Dimensions	Inches	Millimeters
H	0.125 ± 0.008	3.2 ± 0.2
J	0.99	2.54
K	0.10	2.6
L	0.051	1.3
M	0.051	1.3
N	0.031	0.8
P	0.020	0.5



Description:

A triac is a solid state silicon AC switch which may be gate triggered from an off-state to an on-state for either polarity of applied voltage.

Features:

- ☐ Planar Passivation
- ☐ Selected for Inductive Loads

Applications:

- ☐ AC Switch
- ☐ Heating
- ☐ Motor Controls
- ☐ Switch Mode Power Supply
- ☐ Lighting
- ☐ Solid State Relay

Ordering Information:

Example: Select the complete eight, nine or ten digit part number you desire from the table - i.e. BCR20AM-8 is a 400 Volt, 20 Ampere Triac

Type	V _{DRM} Volts	Code	Inductive Load*
BCR20AM	400 600	-8 -12	L

*For inductive load, add L.

BCR20AM

Triac

20 Ampere/400-600 Volts

Absolute Maximum Ratings, $T_a = 25^\circ\text{C}$ unless otherwise specified

Ratings	Symbol	BCR20AM-8	BCR20AM-12	Units
On-state Current, $T_c = 105^\circ\text{C}$	$I_{T(RMS)}$	20	20	Amperes
Repetitive Peak Off-state Voltage (Gate Open)	V_{DRM}	400	600	Volts
Non-repetitive Peak Off-state Voltage (Gate Open)	V_{DSM}	500	720	Volts
Non-repetitive Peak On-state Voltage, One Cycle (60 Hz)	I_{TSM}	200	200	Amperes
I^2t for Fusing, $t = 8.3$ msec	I^2t	167	167	A^2sec
Peak Gate Power Dissipation, 20 μsec	P_{GM}	5	5	Watts
Average Gate Power Dissipation	$P_{G(avg)}$	0.5	0.5	Watts
Peak Gate Current	I_{GM}	2	2	Amperes
Peak Gate Voltage	V_{GM}	10	10	Volts
Storage Temperature	T_{stg}	-40 to 125	-40 to 125	$^\circ\text{C}$
Operating Temperature	T_j	-40 to 125	-40 to 125	$^\circ\text{C}$
Weight	—	2.0	2.0	Grams

Electrical and Thermal Characteristics, $T_j = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions (Trigger Mode)				BCR30GM			Units
		V _D	R _L	R _G	T _j	Min.	Typ.	Max.	
Gate Parameters									
DC Gate Trigger Current									
MT2+ Gate+	I _{FGT I}	6V	6Ω	330Ω	25°C	—	—	30	mA
MT2+ Gate–	I _{RGT I}	6V	6Ω	330Ω	25°C	—	—	30	mA
MT2– Gate–	I _{RGT III}	6V	6Ω	330Ω	25°C	—	—	30	mA
DC Gate Trigger Voltage									
MT2+ Gate+	V _{FGT I}	6V	6Ω	330Ω	25°C	—	—	1.5	Volts
MT2+ Gate–	V _{RGT I}	6V	6Ω	330Ω	25°C	—	—	1.5	Volts
MT2– Gate–	V _{RGT III}	6V	6Ω	330Ω	25°C	—	—	1.5	Volts
DC Gate Non-trigger Voltage									
All	V _{GD}	1/2 V _{DRM}	—	—	125°C	0.2	—	—	Volts
Thermal Resistance, Junction-to-case	R _{th(j-c)}	—				—	—	0.8	°C/W
Voltage – Blocking State Repetitive Off-state Current	I _{DRM}	Gate Open Circuited, V _D = V _{DRM} , T _j = 125°C				—	—	2	mA
Current – Conducting State Peak On-state Voltage	V _{TM}	T _c = 25°C, I _{TM} = 30A				—	—	1.5	Volts
Critical Rate-of-Rise of Commutating Off-state Voltage (Commutating dv/dt)	(dv/dt) _C	—				—	—	—	V/μs
▲ (Switching)									

▲ (Switching)

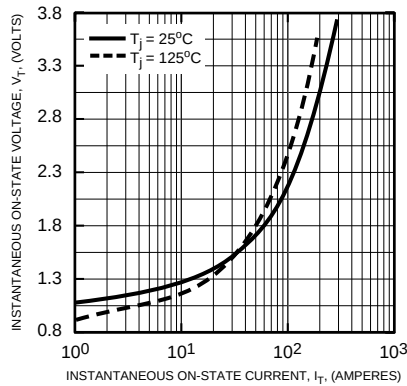
Δ Part Number	V_{DRM} (Volts)	Commutating dv/dt, $(dv/dt)_C$ ($\text{V}/\mu\text{sec}$) Minimum	Test Condition	Commutating Voltage & Current Waveform (Inductive Load)
BCR20AM-8	400	—	$T_j = 125^\circ\text{C}$, Rate of Decay	
BCR20AM-8L	—	10	On-state Commutating Current	
BCR20AM-12	600	—	$(dv/dt)_C = -10\text{A}/\text{msec}$,	
BCR20AM-12L	—	10	Peak Off-state Voltage $V_D = 400\text{V}$	

BCR20AM

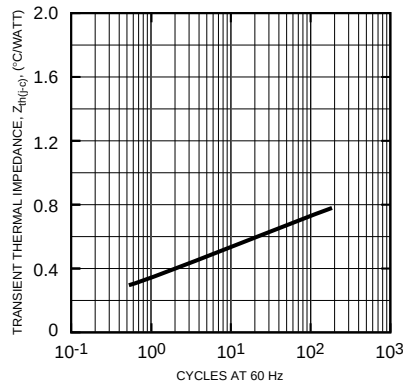
Triac

20 Ampere/400-600 Volts

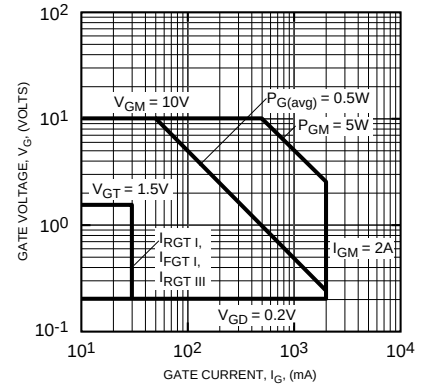
MAXIMUM ON-STATE CHARACTERISTICS



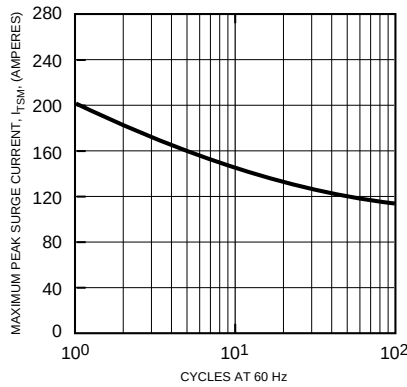
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION-TO-CASE)



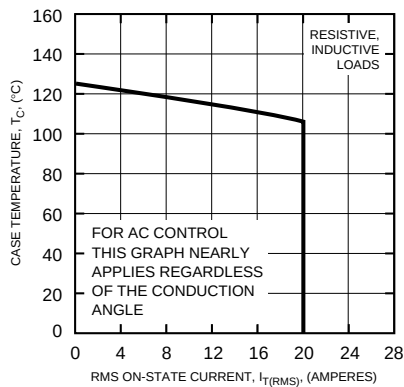
GATE CHARACTERISTICS (I, II, III)



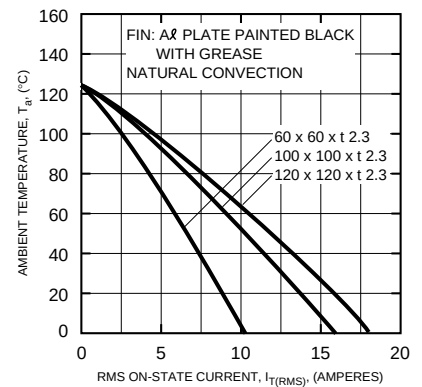
MAXIMUM SURGE CURRENT FOLLOWING RATED LOAD CONDITIONS



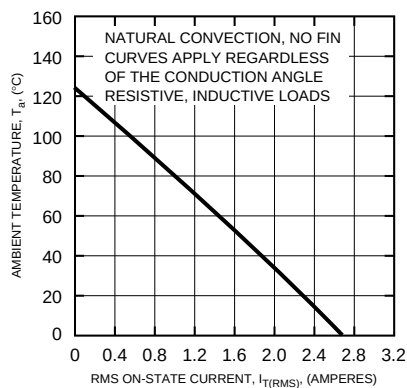
ALLOWABLE CASE TEMPERATURE VS. RMS ON-STATE CURRENT



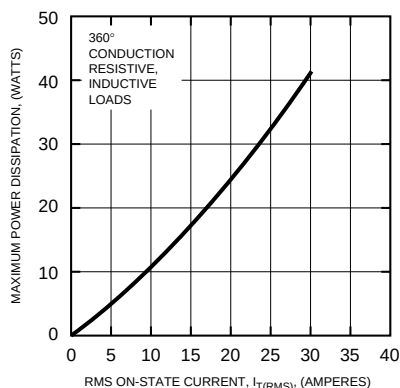
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



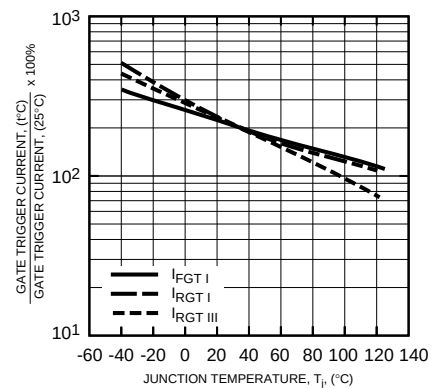
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



MAXIMUM ON-STATE POWER DISSIPATION



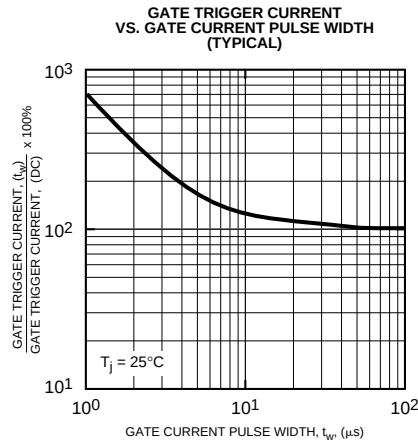
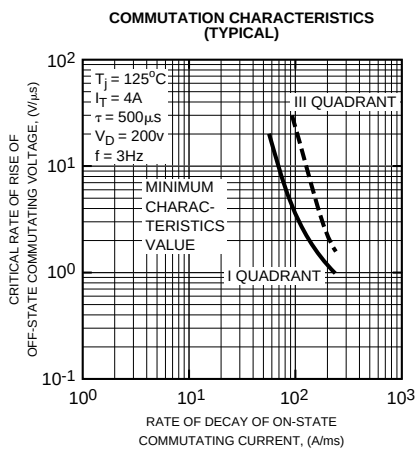
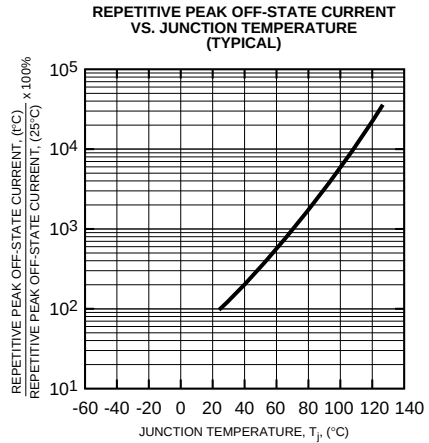
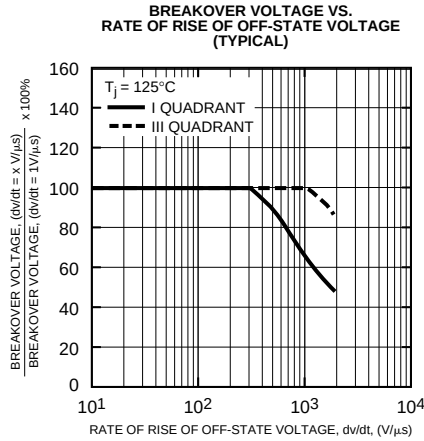
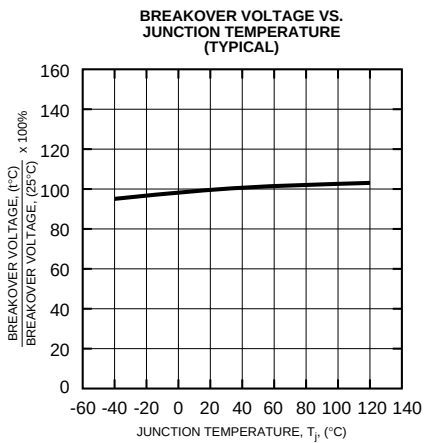
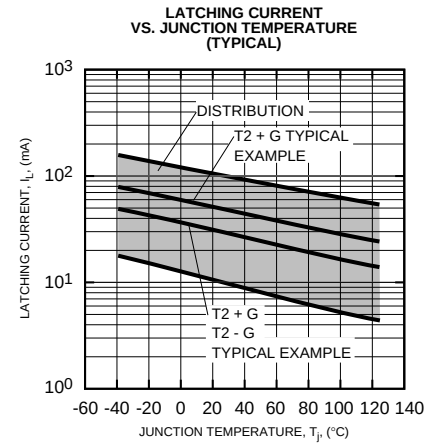
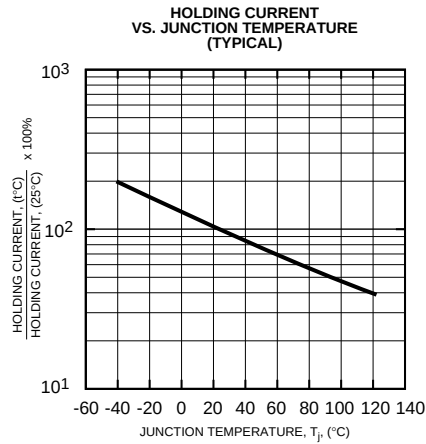
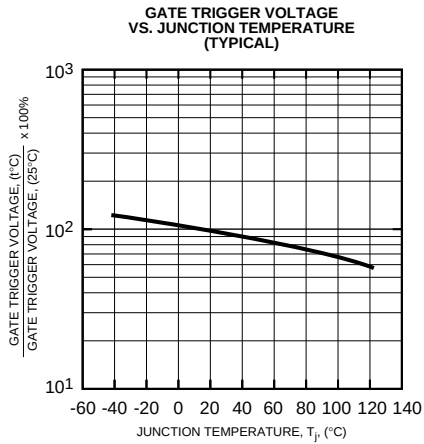
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



BCR20AM

Triac

20 Ampere/400-600 Volts



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS

