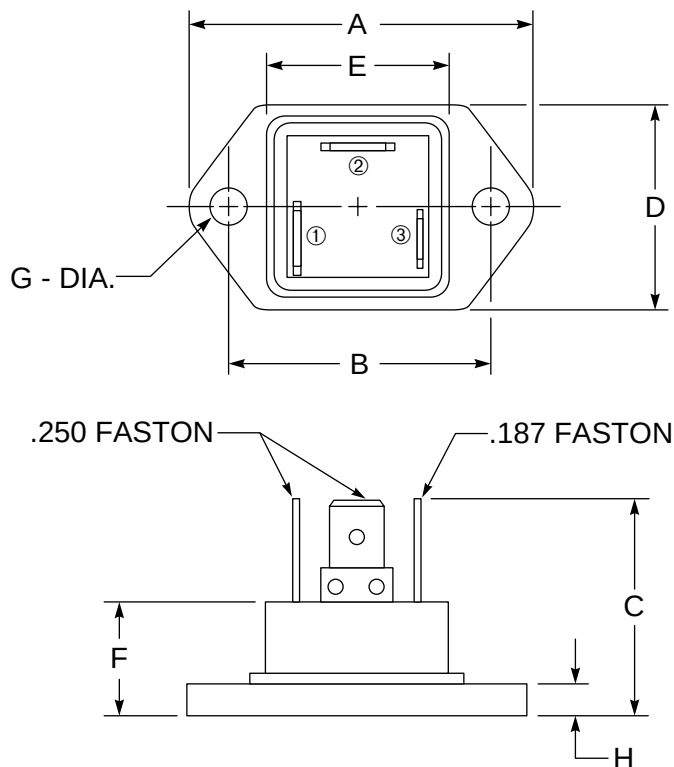


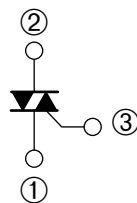
Isolated Triac 30 Ampere/600 Volts

OUTLINE DRAWING



CONNECTION DIAGRAM

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



Outline Drawing (Conforms to JEDEC TO-92)

Dimensions	Inches	Millimeters
A	1.54 Max.	39.2 Max.
B	1.181 ± 0.008	30.0 ± 0.2
C	0.89 Max.	22.5 Max.
D	0.91 Max.	23 Max.
E	0.80 Max.	20.2 Max.
F	0.40 Max.	11 Max.
G	0.165 Dia.	4.2 Dia.
H	0.10 Max.	2.6 Max.



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:

- ☐ Glass Passivation
- ☐ Isolated TO-3 Mounting flange
- ☐ Quick Disconnect Terminals
- ☐ 2200 V_{RMS} Isolation Voltage
- ☐ Selected for Inductive Loads

Applications:

- ☐ AC Switch
- ☐ Heating
- ☐ Motor Controls
- ☐ Lighting

Ordering Information:

Example: Select the complete nine or ten digit part number you desire from the table - i.e. BCR30GM-12 is a 600 Volt, 30 Ampere Triac.

Type	V _{DRM} Volts	Code	Inductive Load*
BCR30GM	600	-12	L

*For inductive load, add L.

BCR30GM
Isolated Triac
 30 Ampere/600 Volts

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

Ratings	Symbol	BCR30GM-12	Units
On-state Current, $T_a = 60^\circ\text{C}$	$I_{T(RMS)}$	30	Amperes
Repetitive Peak Off-state Voltage	V_{DRM}	600	Volts
Non-repetitive Peak Off-state Voltage (Gate Open)	V_{DSM}	720	Volts
Non-repetitive Peak Off-state Voltage, One Cycle (60 Hz)	I_{TSM}	300	Amperes
I^2t for Fusing, $t = 8.3$ msec	I^2t	375	A^2sec
Peak Gate Power Dissipation, 20 μsec	P_{GM}	5	Watts
Average Gate Power Dissipation	$P_{G(avg)}$	0.5	Watts
Peak Gate Current	I_{GM}	2	Amperes
Peak Gate Voltage	V_{GM}	10	Volts
Storage Temperature	T_{stg}	-40 to 125	$^\circ\text{C}$
Operating Temperature	T_j	-40 to 125	$^\circ\text{C}$
Isolation Voltage	V_{iso}	2200	Volts
Weight	—	26	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	T _j	Min.	Typ.	Max.	
Gate Parameters								
DC Gate Trigger Current								
MT2+ Gate+	I _{FGT I}	6V	6Ω	25°C	—	—	50	mA
MT2+ Gate–	I _{RGT I}	6V	6Ω	25°C	—	—	50	mA
MT2– Gate–	I _{RGT III}	6V	6Ω	25°C	—	—	50	mA
DC Gate Trigger Voltage								
MT2+ Gate+	V _{FGT I}	6V	6Ω	25°C	—	—	2.5	Volts
MT2+ Gate–	V _{RGT I}	6V	6Ω	25°C	—	—	2.5	Volts
MT2– Gate–	V _{RGT III}	6V	6Ω	25°C	—	—	2.5	Volts
DC Gate Non-trigger Voltage								
All	V _{GD}	1/2 V _{DRM}	—	125°C	0.2	—	—	Volts

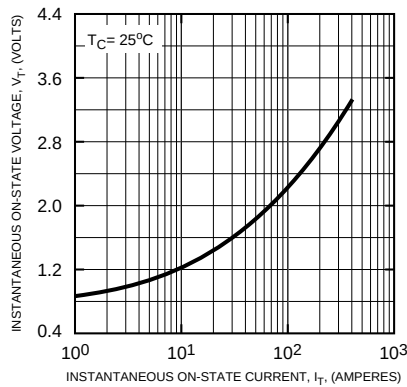
Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction-to-base	$R_{th(j-b)}$	—	—	—	1.6	$^\circ\text{C}/\text{W}$
Voltage – Blocking State Repetitive Off-state Current	I_{DRM}	Gate Open Circuited, $V_D = V_{DRM}$, $T_j = 125^\circ\text{C}$	—	—	3	mA
Current – Conducting State Peak On-state Voltage	V_{TM}	$T_c = 25^\circ\text{C}$, $I_{TM} = 45\text{A}$	—	—	1.6	Volts
Critical Rate-of-Rise of Commutating Off-state Voltage (Commutating dv/dt) ▲ (Switching)	$(dv/dt)_c$	—	—	—	—	$\text{V}/\mu\text{s}$

BCR30GM

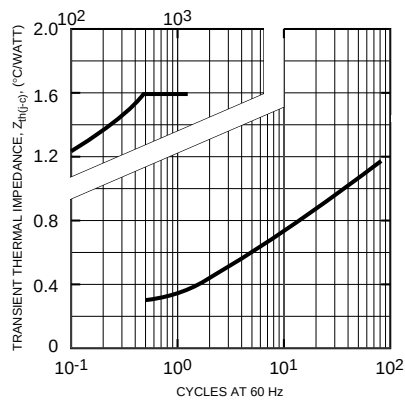
Isolated Triac

30 Ampere/600 Volts

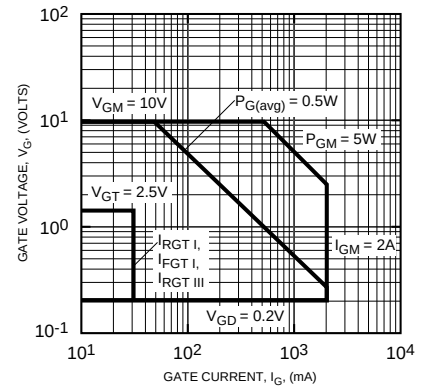
MAXIMUM ON-STATE CHARACTERISTICS



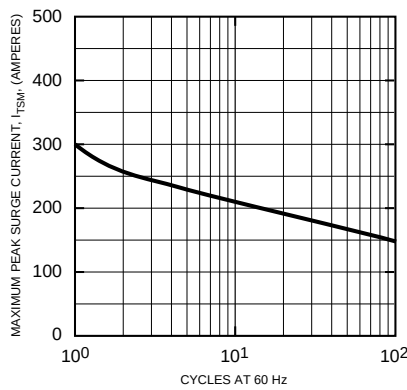
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS



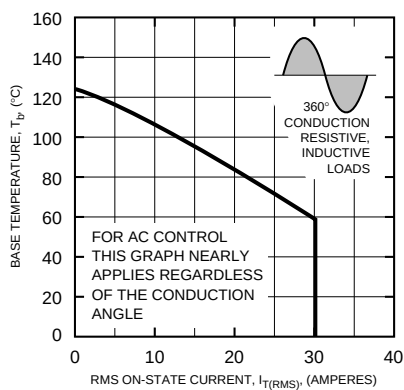
GATE CHARACTERISTICS (I, II, III)



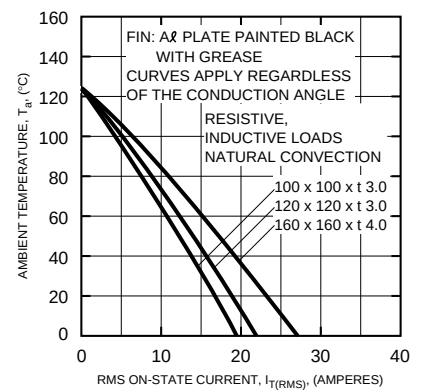
MAXIMUM SURGE CURRENT FOLLOWING RATED LOAD CONDITIONS



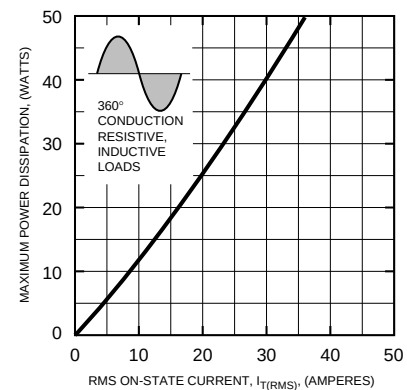
ALLOWABLE BASE TEMPERATURE VS. RMS ON-STATE CURRENT



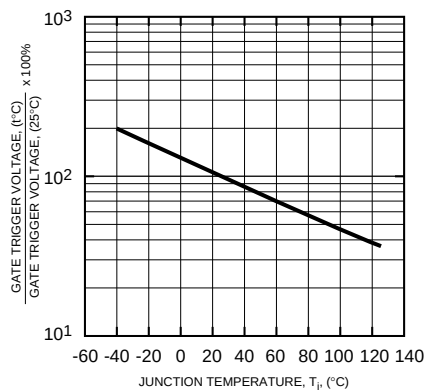
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



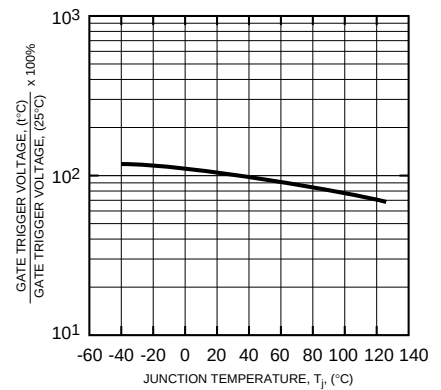
MAXIMUM ON-STATE POWER DISSIPATION



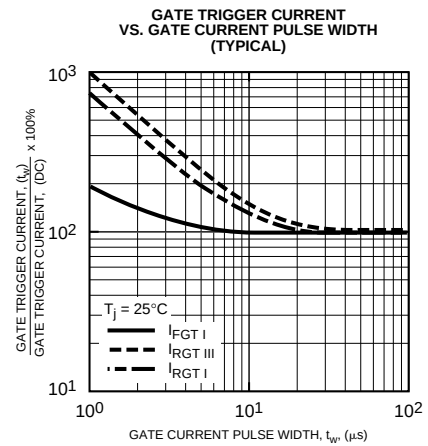
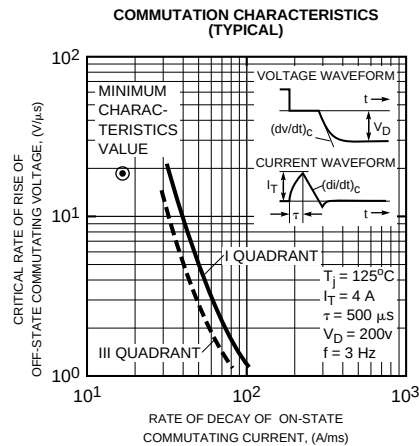
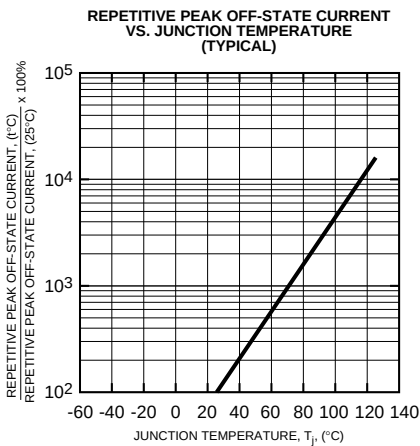
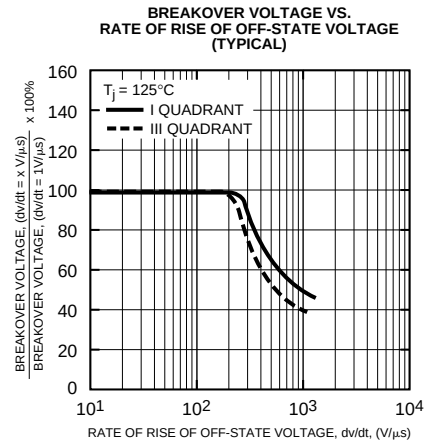
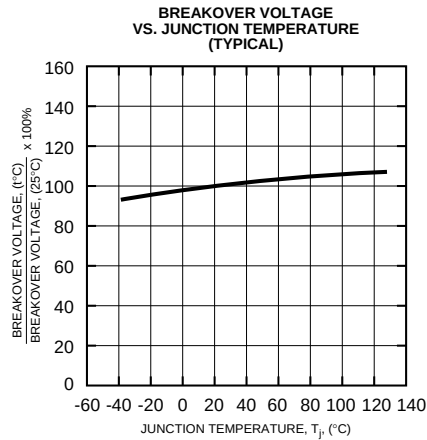
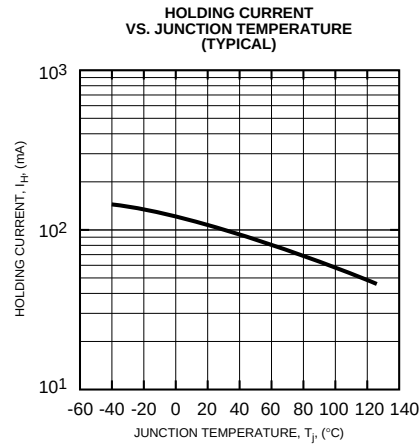
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



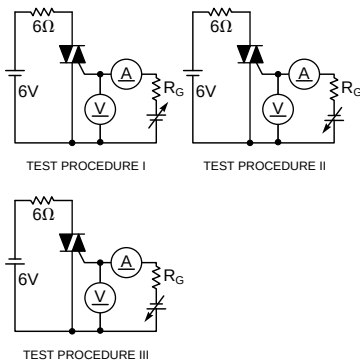
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)



BCR30GM
Isolated Triac
 30 Ampere/600 Volts



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS



Δ Part Number	V _{DRM} (Volts)	Commutating dv/dt, (dv/dt) _c (V/μsec)		Test Condition	Commutating Voltage & Current Waveform (Inductive Load)
		Minimum	Maximum		
BCR30GM-12L	400	20		T _J = 125°C, Rate of Decay On-state Commutating Current (di/dt) _c = -016A/msec, Peak Off-state Voltage V _D = 400V	