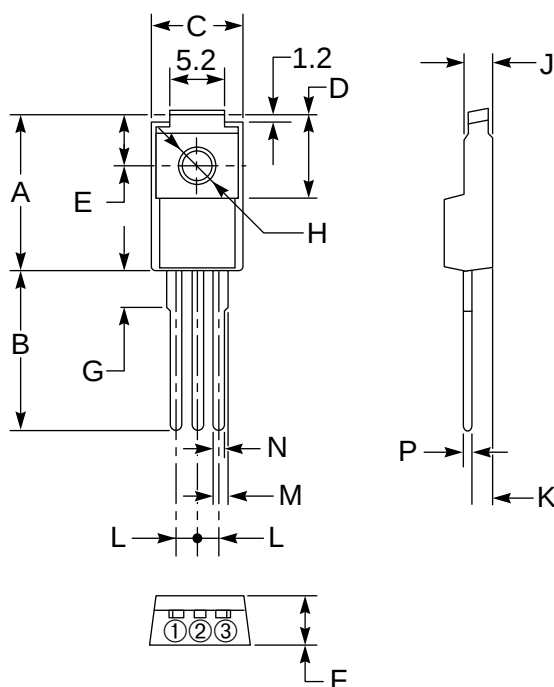


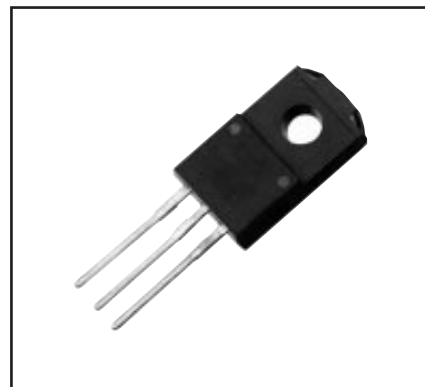
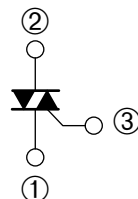
Isolated Triac 12 Amperes/400-600 Volts

OUTLINE DRAWING



CONNECTION DIAGRAM

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



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:

- ☐ Full Molded Isolation Package
- ☐ Glass Passivation
- ☐ 1500 V_{RMS} Isolation Voltage
- ☐ Selected for Inductive Loads
- ☐ UL Approved

Applications:

- ☐ AC Switch
- ☐ Motor Controls
- ☐ Lighting

Ordering Information:

Example: Select the complete eight, nine or ten digit part number you desire from the table - i.e. BCR12PM-8 is a 400 Volt, 12 Ampere Triac.

Outline Drawing (Conforms to TO-220F)

Dimensions	Inches	Millimeters
A	0.67	17.0
B	0.49 Min.	12.5 Min.
C	0.39	10.0
D	0.33	8.5
E	0.20	5.0
F	0.18	4.5
G	0.14	3.6

Dimensions	Inches	Millimeters
H	0.126 ±0.008 Dia.	3.2 ±0.2 Dia.
J	0.11	2.8
K	0.102	2.6
L	0.10	2.5
M	0.039	1.0
N	0.031	0.8
P	0.020	0.5

Type	V _{DRM} Volts	Code	Inductive Load*
BCR12PM	400	-8	L
	600	-12	

*For inductive load, add L.



Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272

BCR12PM

Isolated Triac

12 Amperes/400-600 Volts

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

Ratings	Symbol	BCR12PM-8	BCR12PM-12	Units
Repetitive Peak Off-state Voltage	V_{DRM}	400	600	Volts
Non-repetitive Peak Off-state Voltage	V_{DSM}	500	720	Volts
On-state Current, $T_c = 74^\circ\text{C}$	$I_{\text{T(RMS)}}$	12	12	Amperes
Non-repetitive Peak Surge, One Cycle (60 Hz)	I_{TSM}	120	120	Amperes
I^2t for Fusing, $t = 8.3$ msec	I^2t	60	60	A^2sec
Peak Gate Power Dissipation, 20 μsec	P_{GM}	5	5	Watts
Average Gate Power Dissipation	$P_{\text{G(avg)}}$	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	$^\circ\text{C}$
Isolation Voltage	V_{iso}	1500	1500	Volts
Weight	—	2	2	Grams



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BCR12PM

Isolated Triac

12 Amperes/400-600 Volts

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

Characteristics	Symbol	Test Conditions (Trigger Mode)			BCR12PM			
		V _D	R _L	T _j	Min.	Typ.	Max.	Units
Gate Parameters								
DC Gate Trigger Current								
MT2+ Gate+	I _{GT}	6V	6Ω	25°C	–	–	30	mA
MT2+ Gate–		6V	6Ω	25°C	–	–	30	mA
MT2– Gate–		6V	6Ω	25°C	–	–	30	mA
DC Gate Trigger Voltage								
MT2+ Gate+	V _{GT}	6V	6Ω	25°C	–	–	1.5	Volts
MT2+ Gate–		6V	6Ω	25°C	–	–	1.5	Volts
MT2– Gate–		6V	6Ω	25°C	–	–	1.5	Volts
DC Gate Non-trigger Voltage								
All	V _{GD}	1/2 V _{DRM}	–	125°C	0.2	–	–	Volts

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

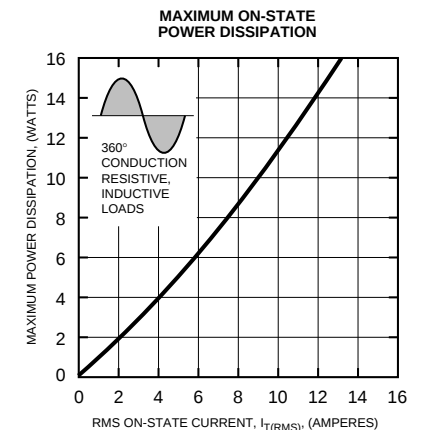
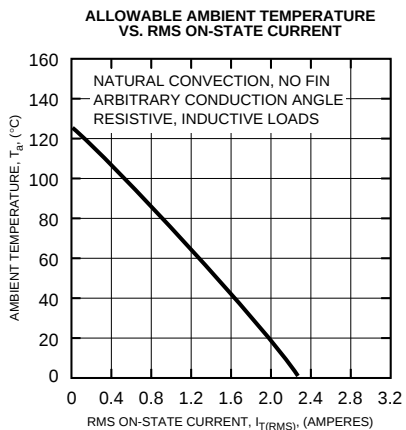
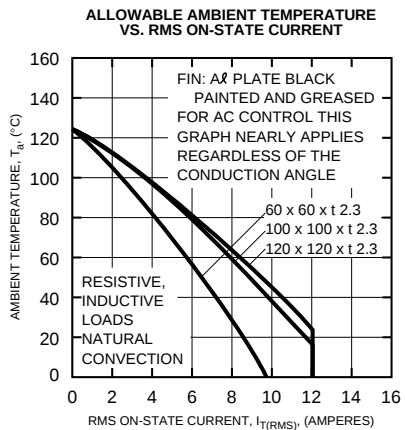
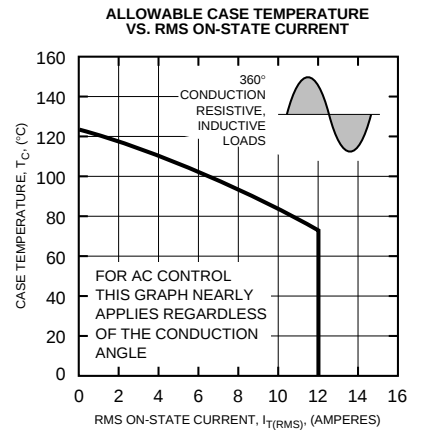
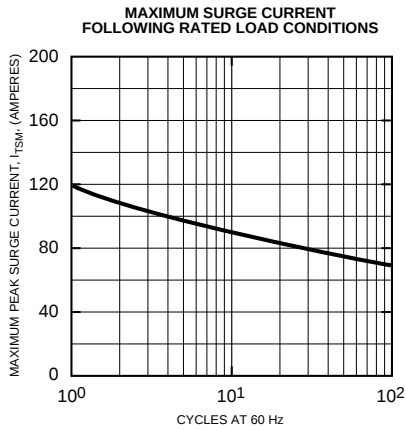
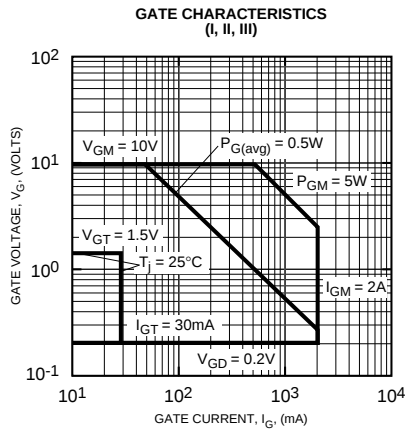
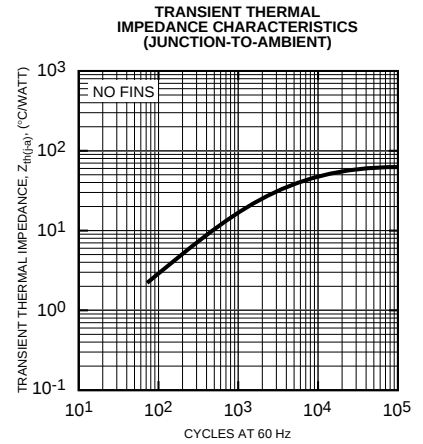
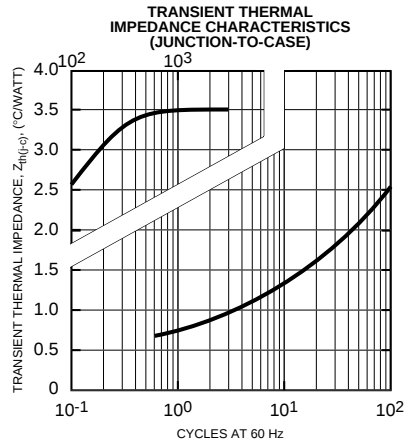
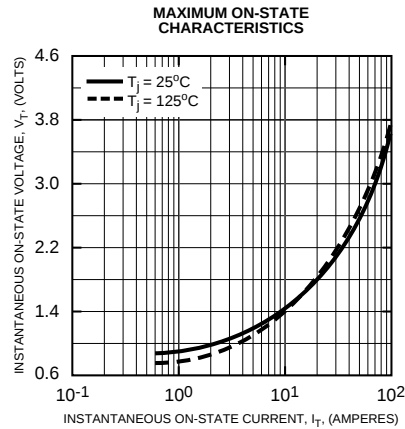
Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction-to-case	$R_{th(j-c)}$	—	—	—	3.5	$^\circ\text{C/W}$
Steady State Thermal Resistance, Junction-to-ambient	$R_{th(j-a)}$	—	—	—	60	$^\circ\text{C/W}$
Voltage – Blocking State Repetitive Off-state Current	I_{DRM}	Gate Open Circuited, $V_D = V_{DRM}$, $T_j = 125^\circ\text{C}$	—	—	2	mA
Current – Conducting State Peak On-state voltage	V_{TM}	$T_c = 25^\circ\text{C}$, $I_{TM} = 20\text{A}$	—	—	1.6	Volts
Critical Rate-of-rise of Commutating Off-state Voltage (Commutating dv/dt) ▲ for inductive load (L) (Switching)	$(dv/dt)_c$	—	—	—	—	$\text{V}/\mu\text{s}$

Δ Part Number	V_{DRM} (Volts)	Commutating dv/dt , $(dv/dt)_c$ ($\text{V}/\mu\text{sec}$)		Test Condition	Commutating Voltage & Current Waveform (Inductive Load)
		Load Type	Minimum		
BCR12PM-8L	400	L	10	$T_j = 125^\circ\text{C}$,	
BCR12PM-12L	600	L	10	Rate of Decay On-state Commutating Current $(di/dt)_c = -6\text{A/msec}$; Peak Off-state Voltage $V_D = 400\text{V}$	

BCR12PM

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12 Amperes/400-600 Volts



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