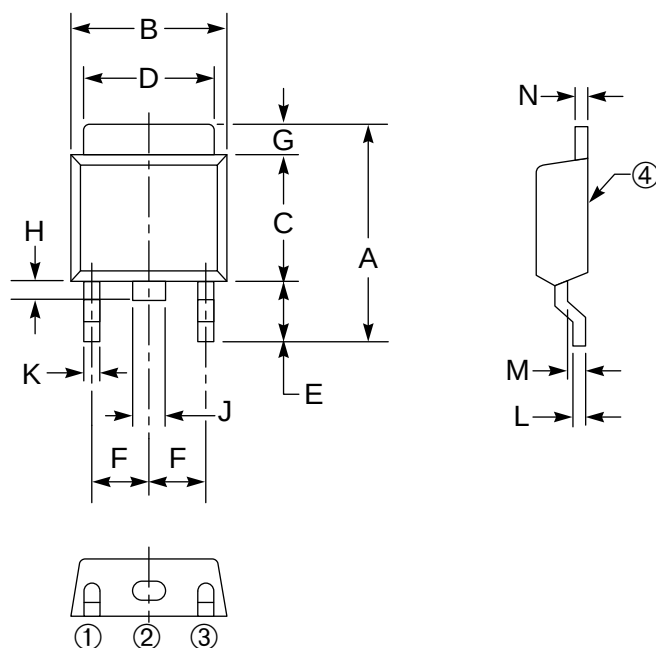


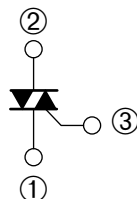
Surface Mount Triac 5 Amperes/400-600 Volts

OUTLINE DRAWING



CONNECTION DIAGRAM

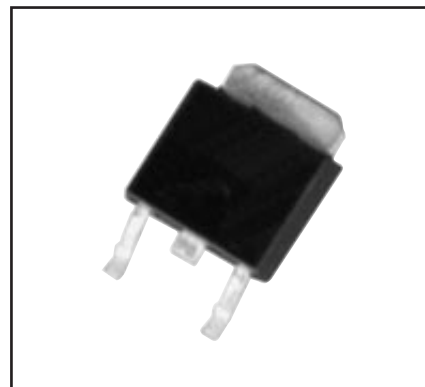
- ① T1 TERMINAL
- ② T2 TERMINAL
- ③ GATE TERMINAL
- ④ T2 TERMINAL



Outline Drawing (Conforms to MP-3)

Dimensions	Inches	Millimeters
A	0.39 Max.	10 Max.
B	0.26	6.5
C	0.22 ± 0.008	5.5 ± 0.2
D	0.20 ± 0.008	5.0 ± 0.2
E	0.9 Min.	2.3 Min.
F	0.9	2.3
G	0.06 ± 0.008	1.5 ± 0.2

Dimensions	Inches	Millimeters
H	0.040 Min.	1.0 Min.
J	0.040	1.0
K	0.4 Max.	0.9 Max.
L	0.03	0.8
M	0.020 ± 0.01	0.5 ± 0.2
N	0.020	0.5 ± 0.1



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:

- ☐ Surface Mount Type
- ☐ Glass Passivation
- ☐ Selected for Inductive Loads

Applications:

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

Ordering Information:

Example: Select the complete eight or nine digit part number you desire from the table - i.e. BCR5AS-8L is a 400 Volt, 5 Ampere Triac.

Type	V _{DRM} Volts	Code	Inductive Load
BCR5AS	400 600	-8 -12	L



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

BCR5AS

Surface Mount Triac

5 Amperes/400-600 Volts

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

Ratings	Symbol	BCR5AS-8L	BCR5AS-12L	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, $T_c = 103^{\circ}\text{C}$	$I_{\text{T(RMS)}}$	5	5	Amperes
Non-repetitive Peak Surge, One Cycle (60 Hz)	I_{TSM}	50	50	Amperes
I^2t for Fusing, $t = 8.3\text{ msec}$	I^2t	10.4	10.4	A^2sec
Peak Gate Power Dissipation, $20\text{ }\mu\text{sec}$	P_{GM}	3	3	Watts
Average Gate Power Dissipation	$P_{\text{G(avg)}}$	0.3	0.3	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	—	0.26	0.26	mg



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BCR5AS

Surface Mount Triac

5 Amperes/400-600 Volts

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

Characteristics	Symbol	Test Conditions (Trigger Mode)				BCR5AS			
		V _D	R _L	R _G	T _j	Min.	Typ.	Max.	Units
Gate Parameters									
DC Gate Trigger Current									
MT2+ Gate+	I _{GT}	6V	6Ω	330Ω	25°C	–	–	30	mA
MT2+ Gate–		6V	6Ω	330Ω	25°C	–	–	30	mA
MT2– Gate–		6V	6Ω	330Ω	25°C	–	–	30	mA
DC Gate Trigger Voltage									
MT2+ Gate+	V _{GT}	6V	6Ω	330Ω	25°C	–	–	1.5	Volts
MT2+ Gate–		6V	6Ω	330Ω	25°C	–	–	1.5	Volts
MT2– Gate–		6V	6Ω	330Ω	25°C	–	–	1.5	Volts
DC Gate Non-trigger Voltage									
All	V _{GD}	1/2 V	–	–	125°C	0.2	–	–	Volts

BCR5AS

Surface Mount Triac

5 Amperes/400-600 Volts

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	$R_{th(j-c)}$	—	—	—	3.0	$^\circ\text{C/W}$
Voltage – Blocking State Repetitive Off-state Current	I_{DRM}	V_{DRM} = Maximum Allowable Repetitive Off-state Voltage Rating, Gate Open Circuited, $T_j = 125^\circ\text{C}$	—	—	2.0	mA
Current – Conducting State Peak On-state Current	V_{TM}	$T_c = 25^\circ\text{C}$, 8.3ms Pulsewidth Duty Cycle < 2%, $I_{TM} = 7\text{A}$	—	—	1.8	Volts
Critical Rate-of-rise of Commutating Off-state Voltage (Commutating dv/dt) ▲ for Inductive Load (Switching)	$(dv/dt)_C$	—	—	—	—	$\text{V}/\mu\text{s}$

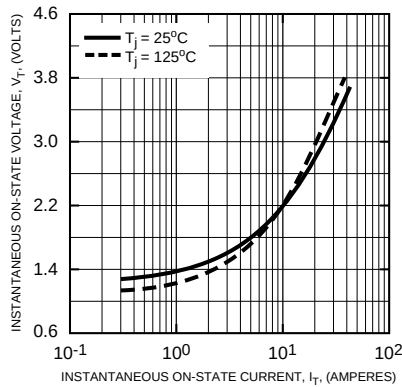
Δ Part Number	V_{DRM} (Volts)	Commutating dv/dt , $(dv/dt)_C$ ($\text{V}/\mu\text{sec}$)		Test Condition	Commutating Voltage & Current Waveform (Inductive Load)
		Load Type	Minimum		
BCR5AS-8L	400	L	5	$T_j = 125^\circ\text{C}$,	
BCR5AS-12L	600	L	5	Rate of Decay On-state Commutating Current $(di/dt)_C = -2.5\text{A/msec}$; Peak Off-state Voltage $V_D = 400\text{V}$	

BCR5AS

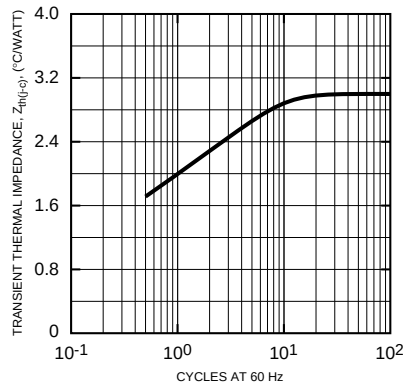
Surface Mount Triac

5 Amperes/400-600 Volts

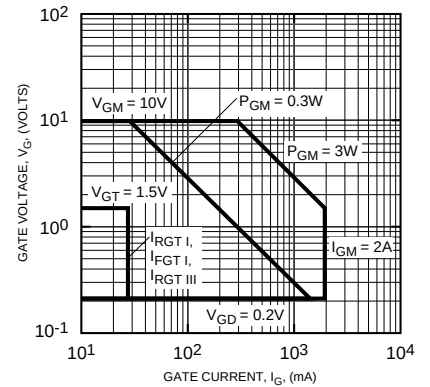
MAXIMUM ON-STATE CHARACTERISTICS



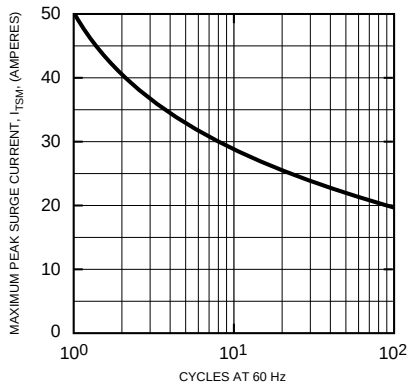
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION-TO-CASE)



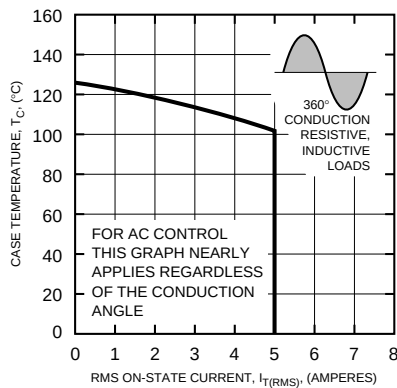
GATE CHARACTERISTICS (I, II, III)



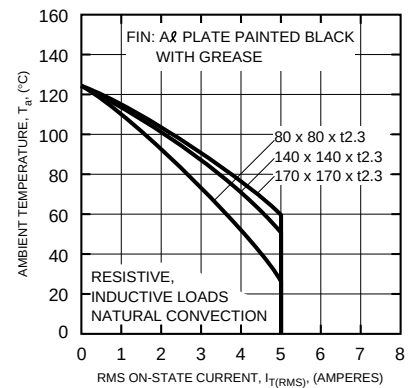
MAXIMUM SURGE CURRENT FOLLOWING RATED LOAD CONDITIONS



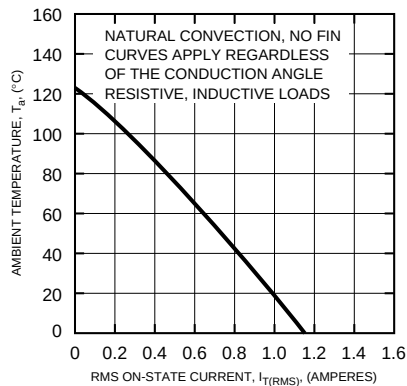
ALLOWABLE CASE TEMPERATURE VS. RMS ON-STATE CURRENT



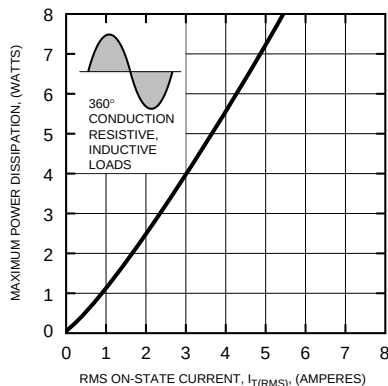
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



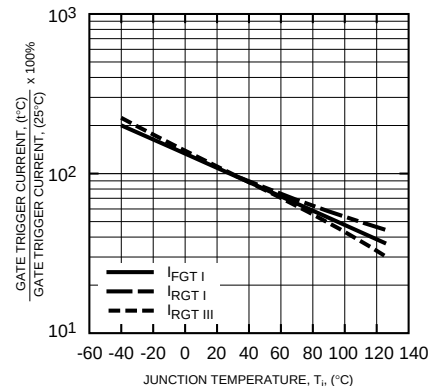
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



MAXIMUM ON-STATE POWER DISSIPATION



GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



BCR5AS

Surface Mount Triac

5 Amperes/400-600 Volts

