

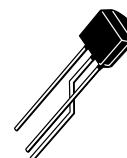
# Silicon Controlled Rectifiers

PNPN devices designed for high volume, line-powered consumer applications such as relay and lamp drivers, small motor controls, gate drivers for larger thyristors, and sensing and detection circuits. Supplied in an inexpensive TO-226AA (TO-92) package which is readily adaptable for use in automatic insertion equipment.

- Sensitive Gate Trigger Current — 200  $\mu$ A Maximum
- Low Reverse and Forward Blocking Current — 100  $\mu$ A Maximum,  $T_C = 125^\circ\text{C}$
- Low Holding Current — 5 mA Maximum
- Glass-Passivated Surface for Reliability and Uniformity

**BRY55-30\***  
**thru 600\***

**SCRs**  
**0.8 AMPERE RMS**  
**30 TO 600 VOLTS**



**CASE 29-04**  
**(TO-226AA)**  
**STYLE 3**  
**WITH TO-18 LEADFORM\***

## MAXIMUM RATINGS ( $T_J = 25^\circ\text{C}$ unless otherwise noted.)

Rating	Symbol	Value	Unit
Peak Repetitive Forward and Reverse Blocking Voltage <sup>(1)</sup> ( $R_{GK} = 1000 \Omega$ , $T_J = 25$ to $125^\circ\text{C}$ ) Marking: BRY55-1 ... BRY55-30 -2 ... BRY55-60 -3 ... BRY55-100 -4 ... BRY55-200 -6 ... BRY55-400 -7 ... BRY55-500 -8 ... BRY55-600	$V_{RRM}$ , $V_{DRM}$	30 60 100 200 400 500 600	Volts
Forward Current RMS (All Conduction Angles)	$I_T(\text{RMS})$	0.8	Amp
Peak Forward Surge Current, $T_A = 25^\circ\text{C}$ (1/2 Cycle, Sine Wave, 60 Hz)	$I_{TSM}$	8	Amps
Circuit Fusing Considerations, $T_A = 25^\circ\text{C}$ ( $t = 8.3$ ms)	$I^2t$	0.15	$\text{A}^2\text{s}$
Peak Gate Power — Forward, $T_A = 25^\circ\text{C}$	$P_{GM}$	0.1	Watt
Peak Gate Current Forward, $T_A = 25^\circ\text{C}$ (300 $\mu$ s, 120 PPS)	$I_{GFM}$	1	Amp
Peak Gate Voltage — Reverse	$V_{GRM}$	5	Volts
Operating Junction Temperature Range @ Rated $V_{RRM}$ and $V_{DRM}$	$T_J$	-40 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-40 to +150	$^\circ\text{C}$
Lead Solder Temperature (< 1.5 mm from case, 10 s max.)		+230	$^\circ\text{C}$

\*European part numbers only. Package is Case 29 with Leadform 18.

1.  $V_{DRM}$  and  $V_{RRM}$  for all types can be applied on a continuous basis. Ratings apply for zero or negative gate voltage; however, positive gate voltage shall not be applied concurrent with negative potential on the anode. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.

# BRY55-30 thru 600

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	75	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	$^{\circ}\text{C}/\text{W}$

## ELECTRICAL CHARACTERISTICS ( $T_C = 25^{\circ}\text{C}$ , $R_{GK} = 1000 \Omega$ unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
Peak Forward Blocking Current ( $V_D = \text{Rated } V_{DRM}$ @ $T_C = 125^{\circ}\text{C}$ )	$I_{DRM}$	—	100	$\mu\text{A}$
Peak Reverse Blocking Current ( $V_R = \text{Rated } V_{RRM}$ @ $T_C = 125^{\circ}\text{C}$ )	$I_{RRM}$	—	100	$\mu\text{A}$
Forward "On" Voltage <sup>(1)</sup> ( $I_{TM} = 1 \text{ A Peak}$ @ $T_A = 25^{\circ}\text{C}$ )	$V_{TM}$	—	1.7	Volts
Gate Trigger Current (Continuous dc) <sup>(2)</sup> (Anode Voltage = 7 Vdc, $R_L = 100 \text{ Ohms}$ )	$I_{GT}$	—	200	$\mu\text{A}$
Gate Trigger Voltage (Continuous dc) (Anode Voltage = 7 Vdc, $R_L = 100 \text{ Ohms}$ ) (Anode Voltage = Rated $V_{DRM}$ , $R_L = 100 \text{ Ohms}$ )	$V_{GT}$	— — 0.1	0.8 1.2 —	Volts
Holding Current (Anode Voltage = 7 Vdc, initiating current = 20 mA)	$I_H$	— —	5 10	mA

1. Forward current applied for 1 ms maximum duration, duty cycle  $\leq 1\%$ .

2.  $R_{GK}$  current is not included in measurement.

3. MARKING: BRY55-30 = BRY55-1

BRY55-60 = BRY55-2

BRY55-100 = BRY55-3

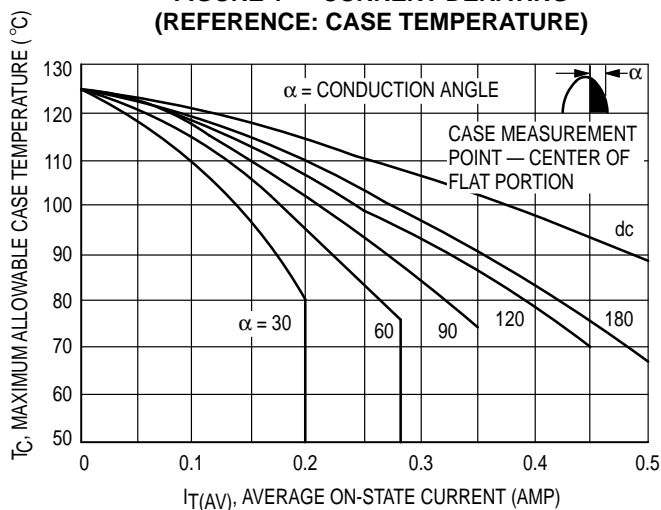
BRY55-200 = BRY55-4

BRY55-400 = BRY55-6

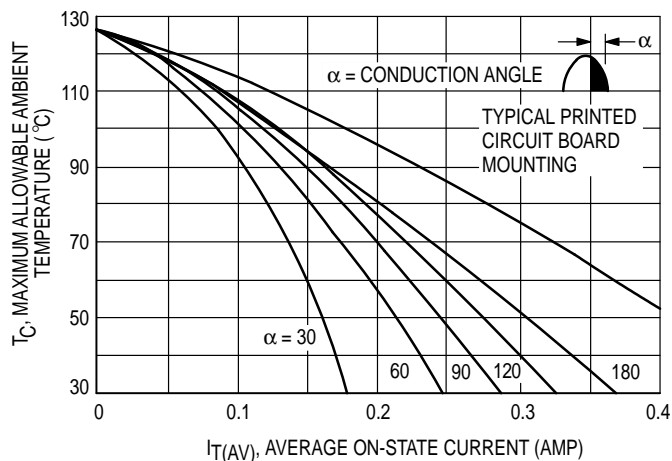
BRY55-500 = BRY55-7

BRY55-600 = BRY55-8

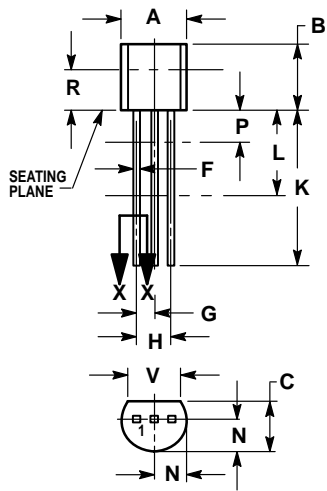
**FIGURE 1 — CURRENT DERATING  
(REFERENCE: CASE TEMPERATURE)**



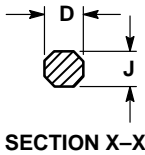
**FIGURE 2 — CURRENT DERATING  
(REFERENCE: AMBIENT TEMPERATURE)**



PACKAGE DIMENSIONS




STYLE 3:  
PIN 1. ANODE  
2. ANODE  
3. CATHODE



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
  2. CONTROLLING DIMENSION: INCH.
  3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
  4. DIMENSION F APPLIES BETWEEN P AND L. DIMENSION D AND J APPLY BETWEEN L AND K MINIMUM. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.022	0.41	0.55
F	0.016	0.019	0.41	0.48
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	—	12.70	—
L	0.250	—	6.35	—
N	0.080	0.105	2.04	2.66
P	—	0.100	—	2.54
R	0.115	—	2.93	—
V	0.135	—	3.43	—

CASE 029-04  
(TO-226AA)

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