

DIGITRON SEMICONDUCTORS

BRY55 SERIES

SILICON CONTROLLED RECTIFIER

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak repetitive forward and reverse blocking voltage⁽¹⁾ ($R_{GK} = 1000\Omega$, $T_J = 25-125^\circ\text{C}$) BRY55-30 BRY55-60 BRY55-100 BRY55-200 BRY55-400 BRY55-500 BRY55-600	V_{RRM}, V_{DRM}	30 60 100 200 400 500 600	Volts
Forward current RMS (all conduction angles)	$I_{T(RMS)}$	0.8	Amps
Peak forward surge current , $T_A = 25^\circ\text{C}$ (1/2 cycle, sine wave, 60Hz)	I_{TSM}	8	Amps
Circuit fusing considerations , $T_A = 25^\circ\text{C}$ ($t = 8.3\text{ms}$)	I^2t	0.15	A^2s
Forward peak gate power , $T_A = 25^\circ\text{C}$	P_{GM}	0.1	Watts
Forward peak gate current , $T_A = 25^\circ\text{C}$ (300 μs , 120 PPS)	I_{GFM}	1	Amps
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 (<1.5mm from case, 10s max)		+230	$^\circ\text{C}$

Note 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.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Maximum	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	μA
Peak reverse blocking current ($V_R = \text{rated } V_{RRM} @ T_C = 125^\circ\text{C}$)	I_{RRM}	-	100	μA
Forward "on" voltage⁽²⁾ $I_{TM} = 1\text{A peak } @ T_A = 25^\circ\text{C}$	V_{TM}	-	1.7	Volts
Gate trigger current (continuous dc)⁽³⁾ (Anode voltage = 7Vdc, $R_L = 100\Omega$)	I_{GT}	-	200	μA
Gate trigger voltage (continuous dc) (Anode voltage = 7Vdc, $R_L = 100\Omega$) (Anode voltage = rated V_{DRM} , $R_L = 100\Omega$) $T_C = 25^\circ\text{C}$ $T_C = -40^\circ\text{C}$ $T_C = 125^\circ\text{C}$	V_{GT}	- - 0.1	0.8 1.2 -	Volts
Holding current (Anode voltage = 7Vdc, initiating current = 20mA) $T_C = 25^\circ\text{C}$ $T_C = -40^\circ\text{C}$	I_H	- -	5 10	mA

Note 2: Forward current applied for 1ms maximum duration, duty cycle $\leq 1\%$.

Note 3: R_{GK} current is not included in measurement.

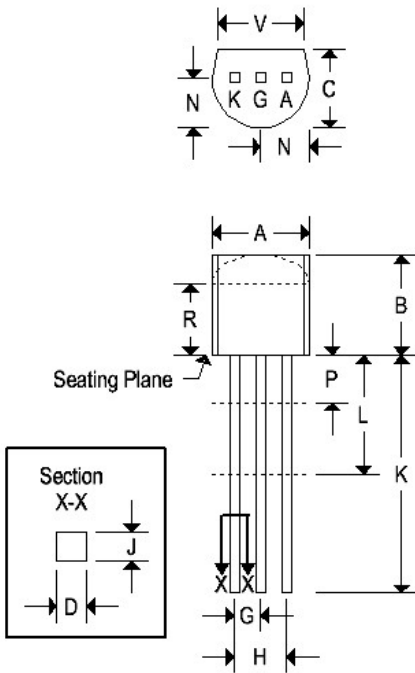
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MECHANICAL CHARACTERISTICS

Case	TO-92
Marking	Body painted, alpha-numeric
Pin out	See below



	TO-92			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.175	0.205	4.450	5.200
B	0.170	0.210	4.320	5.330
C	0.125	0.165	3.180	4.190
D	0.016	0.022	0.410	0.550
F	0.016	0.019	0.410	0.480
G	0.045	0.055	1.150	1.390
H	0.095	0.105	2.420	2.660
J	0.015	0.020	0.390	0.500
K	0.500	-	12.700	-
L	0.250	-	6.350	-
N	0.080	0.105	2.040	2.660
P	-	0.100	-	2.540
R	0.115	-	2.930	-
V	0.135	-	3.430	-

FIGURE 1 — CURRENT DERATING
(REFERENCE: CASE TEMPERATURE)

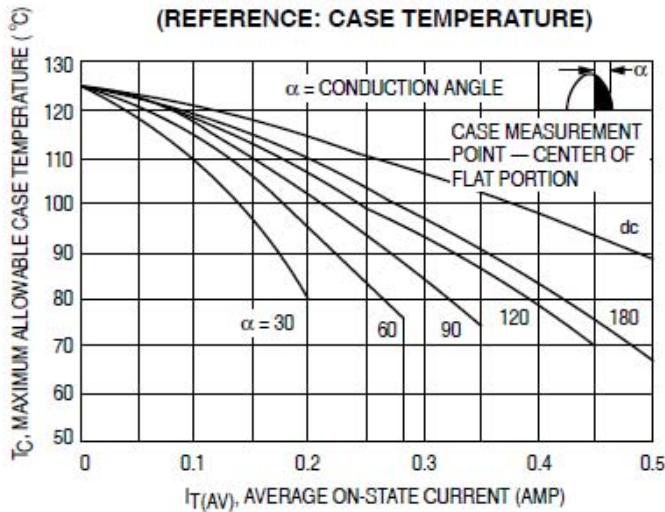


FIGURE 2 — CURRENT DERATING
(REFERENCE: AMBIENT TEMPERATURE)

