DIGITRON™
Semiconductors

High-reliability discrete products and engineering services since 1977

BRY55 SERIES

SILICON CONTROLLED RECTIFIER

FEATURES

- Available as “HR” (high reliability) screened per MIL-PRF-19500, JANTX level. Add “HR” suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding “-PBF” suffix.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak repetitive forward and reverse blocking voltage(1) (R_{GK} = 1000Ω, T_J = 25-125°C)	V_{RRM}, V_{DRM}		Volts
BRY55-30		30	
BRY55-60		60	
BRY55-100		100	
BRY55-200		200	
BRY55-400		400	
BRY55-500		500	
BRY55-600		600	
Forward current RMS (all conduction angles)	$I_{T(RMS)}$	0.8	Amps
Peak forward surge current, T_A = 25°C (1/2 cycle, sine wave, 60Hz)	I_{TSM}	8	Amps
Circuit fusing considerations, T_A = 25°C (t = 8.3ms)	I^2t	0.15	A^2s
Forward peak gate power, T_A = 25°C	P_{GM}	0.1	Watts
Forward peak gate current , T_A = 25°C (300µs, 120 PPS)	I_{GFM}	1	Amps
Operating junction temperature range @ rated V_{RRM} and V_{DRM}	T_J	-40 to +125	°C
Storage temperature range	T_{stg}	-40 to +150	°C
Lead solder temperature (<1.5mm from case, 10s max)		+230	°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	°C/W
Thermal resistance, junction to ambient	$R_{\theta JA}$	200	°C/W

ELECTRICAL CHARACTERISTICS (T_C 25°C, R_{GK} = 1000Ω unless otherwise noted)

Characteristic	Symbol	Min.	Max.	Unit
Peak forward blocking current (V_D = rated V_{DRM} @ T_C = 125°C)	I_{DRM}	-	100	µA
Peak reverse blocking current (V_R = rated V_{RRM} @ T_C = 125°C)	I_{RRM}	-	100	µA
Forward “on” voltage(2) I_{TM} = 1A peak @ T_A = 25°C)	V_{TM}	-	1.7	Volts
Gate trigger current (continuous dc)(3) (Anode voltage = 7Vdc, R_L = 100 Ω)	I_{GT}	-	200	µA

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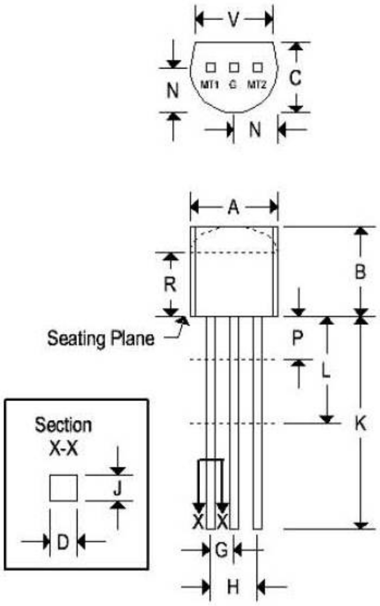
ELECTRICAL CHARACTERISTICS (T_C 25°C, R_{GK} = 1000Ω unless otherwise noted)

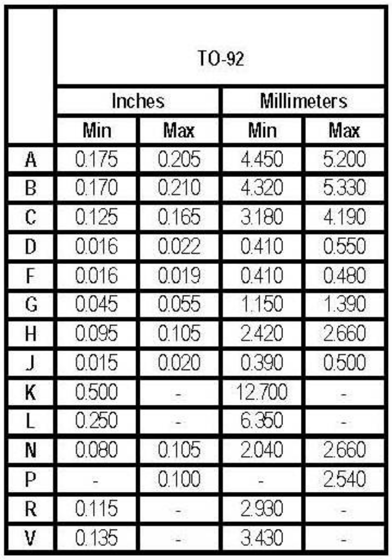
Characteristic	Symbol	Min.	Max.	Unit
Gate trigger voltage (continuous dc) (Anode voltage = 7Vdc, R_L = 100 Ω) (Anode voltage = rated V_{DRM}, R_L = 100 Ω)	V_{GT}			Volts
T_C = 25°C		-	0.8	
T_C = -40°C		-	1.2	
T_C = 125°C		0.1	-	
Holding current (Anode voltage = 7Vdc, initiating current = 20mA)	I_H			mA
T_C = 25°C		-	5	
T_C = -40°C		-	10	

Note 2: Forward current applied for 1ms maximum duration, duty cycle ≤ 1%.
Note 3: R_{GK} current is not included in measurement.

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)

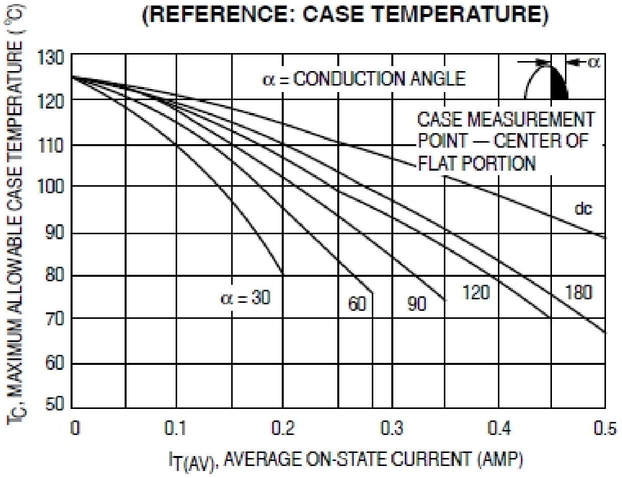


FIGURE 2 — CURRENT DERATING
(REFERENCE: AMBIENT TEMPERATURE)