

# DIGITRON SEMICONDUCTORS

2N4212-2N4216, 2N4219

SILICON CONTROLLED RECTIFIERS  
1.6 AMPS RMS, 25-400 VOLTS

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
<b>Peak repetitive forward and reverse blocking voltage</b> <sup>(1)</sup> 2N4212 2N4213 2N4214 2N4216 2N4219	$V_{DRM}$ or $V_{RRM}$	25 50 100 200 400	Volts
<b>Forward current RMS</b> (All conduction angles)	$I_{T(RMS)}$	1.6	Amps
<b>Peak surge current</b> (One cycle, 60Hz) No repetition until thermal equilibrium is restored	$I_{TSM}$	15	Amps
<b>Forward peak gate power</b>	$P_{GFM}$	0.1	Watt
<b>Forward average gate power</b>	$P_{GF(AV)}$	0.01	Watt
<b>Forward peak gate current</b>	$I_{GFM}$	0.1	Amp
<b>Forward peak gate voltage</b>	$V_{GFM}$	6	Volts
<b>Reverse peak gate voltage</b>	$V_{GRM}$	6	Volts
<b>Operating junction temperature range</b>	$T_J$	-65 to 125	°C
<b>Storage temperature range</b>	$T_{stg}$	-65 to 150	°C
<b>Lead solder temperature</b> (> 1/16" from case, 10 s max.)	-	230	°C

Note 1:  $V_{DRM}$  and  $V_{RRM}$  can be applied for all types on a continuous dc basis without incurring damage.

## ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise noted, $R_{GK} = 1000\text{ohms}$ )<sup>(1)</sup>

Characteristic		Symbol	Min	Max	Unit
<b>Peak forward or reverse blocking current</b> (Rated $V_{DRM}$ or $V_{RRM}$ , gate open)	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	$I_{DRM}, I_{RRM}$	- -	10 200	$\mu\text{A}$
<b>Forward "on" voltage</b> ( $I_{TM} = 1\text{A}$ dc peak)		$V_{TM}$	-	1.5	Volts
<b>Gate trigger current (continuous dc)</b> <sup>(2)</sup> ( $V_D = 7\text{V}$ , $R_L = 100\text{ohms}$ )	( $T_C = 25^\circ\text{C}$ ) ( $T_C = -65^\circ\text{C}$ )	$I_{GT}$	- -	100 300	$\mu\text{A}$ dc
<b>Gate trigger voltage (continuous dc)</b> ( $V_D = 7\text{V}$ , $R_L = 100\text{ohms}$ , $T_C = 25^\circ\text{C}$ ) ( $V_D = 7\text{V}$ , $R_L = 100\text{ohms}$ , $T_C = -65^\circ\text{C}$ ) ( $V_D = \text{rated } V_{DRM}$ , $R_L = 100\text{ohms}$ , $T_J = 125^\circ\text{C}$ )		$V_{GT}$	- - 0.1	0.8 1 -	Volts
<b>Holding current</b> ( $V_D = 7\text{V}$ )	$T_C = 25^\circ\text{C}$ $T_C = -65^\circ\text{C}$	$I_{HX}$	- -	3 7	mA

Note 1: Thyristor devices shall not be tested with a constant current source for forward or reverse blocking capability such that the voltage applied exceeds the rated blocking voltage. Thyristor devices shall not have a positive bias applied to the gate concurrently with a negative potential applied to the anode.

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

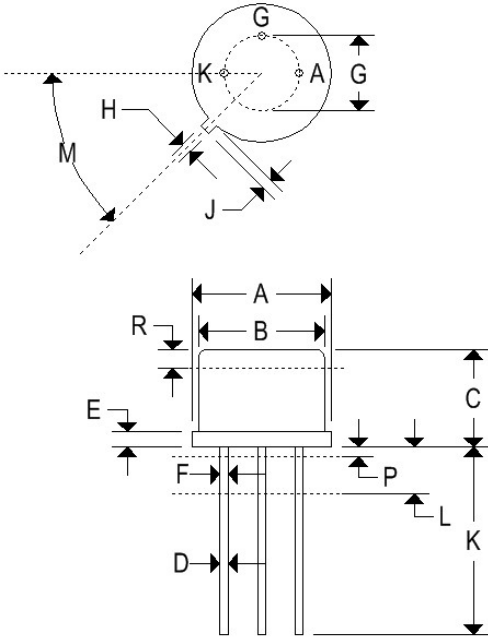
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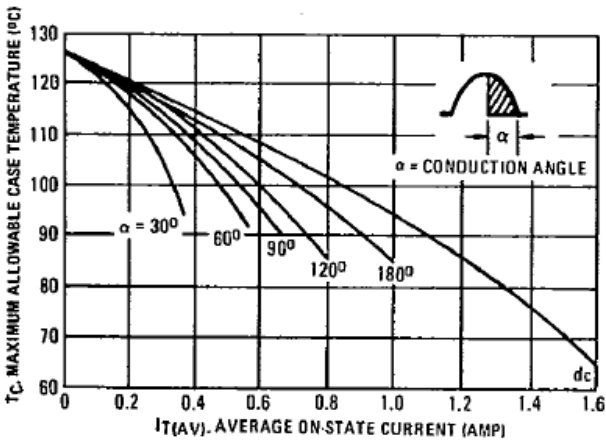
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## MECHANICAL CHARACTERISTICS

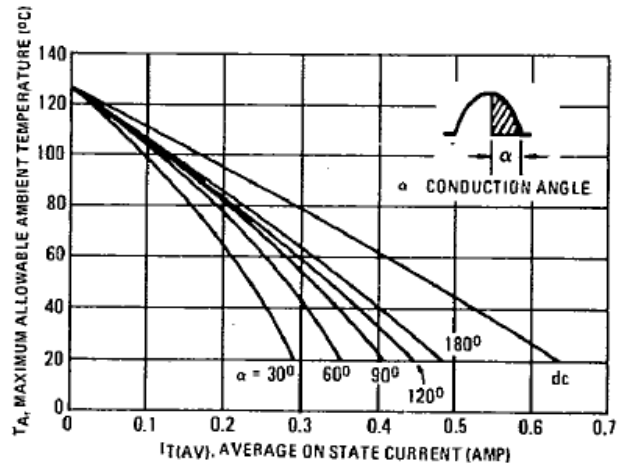
Case	TO-39
Marking	Alpha-numeric
Pin out	See below



	TO-39			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.335	0.370	8.510	9.390
B	0.305	0.335	7.750	8.500
C	0.240	0.260	6.100	6.600
D	0.016	0.021	0.410	0.530
E	0.009	0.041	0.230	1.040
F	0.016	0.019	0.410	0.480
G	0.200 BSC		5.080 BSC	
H	0.028	0.034	0.720	0.860
J	0.029	0.045	0.740	1.140
K	0.500	0.750	12.700	19.050
L	0.250	-	6.350	-
M	45°C BSC		45°C BSC	
P	-	0.050	-	1.270
R	0.100	-	2.540	-



CASE TEMPERATURE VS. CURRENT



AMBIENT TEMPERATURE VS. CURRENT