

DIGITRON SEMICONDUCTORS

2N6236-2N6241

SILICON CONTROLLED RECTIFIERS

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 ($T_C = 110^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Repetitive peak forward and reverse blocking voltage ⁽¹⁾ (1/2 sine wave, $R_{GK} = 1000\Omega$, $T_C = -40$ to $+110^\circ\text{C}$) 2N6236 2N6237 2N6238 2N6239 2N6240 2N6241	V_{DRM} V_{RRM}	30 50 100 200 400 600	Volts
Non-repetitive peak reverse blocking voltage (1/2 sine wave, $R_{GK} = 1000\Omega$, $T_C = -40$ to $+110^\circ\text{C}$) 2N6236 2N6237 2N6238 2N6239 2N6240 2N6241	V_{RSM}	50 100 150 250 450 650	Volts
Average on-state current ($T_C = -40$ to $+90^\circ\text{C}$) ($T_C = 100^\circ\text{C}$)	$I_{T(AV)}$	2.6 1.6	Amps
Surge on-state current (1/2 sine wave, 60Hz, $T_C = 90^\circ\text{C}$) (1/2 sine wave, 1.5ms, $T_C = 90^\circ\text{C}$)	I_{TSM}	25 35	Amps
Circuit fusing ($T_C = -40$ to $+110^\circ\text{C}$, $t = 8.3\text{ms}$)	I^2t	2.6	A^2s
Peak gate power (pulse width = $10\mu\text{s}$, $T_C = 90^\circ\text{C}$)	P_{GM}	0.5	Watts
Average gate power ($t = 8.3\text{ms}$, $T_C = 90^\circ\text{C}$)	$P_{G(AV)}$	0.1	Watts
Peak forward gate current	I_{GM}	0.2	Amps
Peak reverse gate voltage	V_{RGM}	6	Volts
Operating junction temperature range	T_J	-40 to 110	$^\circ\text{C}$
Storage temperature range	T_{stg}	-40 to 150	$^\circ\text{C}$
Stud torque		6	In. lb.

Note 1: Ratings apply for zero or negative gate voltage. Devices shall not have a positive bias applied to the gate concurrently with a negative potential on the anode. Devices should not be tested with a constant source for forward or reverse blocking capability such that the voltage applied exceeds the rated blocking voltage.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal resistance, junction to case	$R_{\theta JC}$	3	$^\circ\text{C}/\text{W}$
Thermal resistance, junction to ambient	$R_{\theta JA}$	75	$^\circ\text{C}/\text{W}$

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

Characteristic	Symbol	Min	Typ	Max	Unit
Peak forward or reverse blocking current (Rated V_{DRM} or V_{RRM}) $T_C = 25^\circ\text{C}$ $T_C = 110^\circ\text{C}$	I_{DRM} , I_{RRM}	- -	- -	10 200	μA
Peak forward "on" voltage ($I_{TM} = 8.2\text{A}$ peak, pulse width = 1 to 2ms, 2% duty cycle)	V_{TM}	-	-	2.2	Volts

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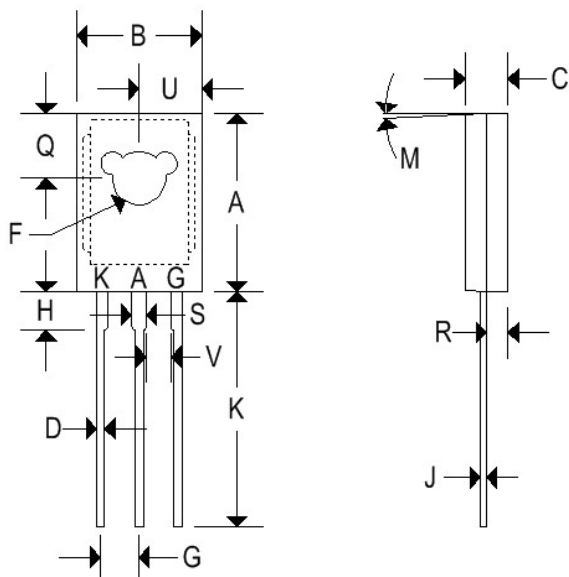
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Characteristic	Symbol	Min	Typ	Max	Unit
Gate trigger current (continuous dc) ($V_{AK} = 12V_{dc}$, $R_L = 24\Omega$) ($V_{AK} = 12V_{dc}$, $R_L = 24\Omega$, $T_C = -40^\circ C$)	I_{GT}	-	-	200 500	μA
Gate trigger voltage (continuous dc) (Source voltage = 12V, $R_S = 50\Omega$) ($V_{AK} = 12V_{dc}$, $R_L = 24\Omega$, $T_C = -40^\circ C$)	V_{GT}	-	-	1	Volts
Gate non-trigger voltage ($V_{AK} = \text{rated } V_{DRM}$, $R_L = 100\Omega$, $T_C = 110^\circ C$)	V_{GD}	0.2	-	-	Volts
Holding current ($V_{AK} = 12V_{dc}$, $I_{GT} = 2mA$) (initiating on state current = 200mA) $T_C = 25^\circ C$ $T_C = -40^\circ C$	I_H	-	-	5 10	mA
Total turn-on time (Source voltage = 12V, $R_S = 6k\Omega$) ($I_{TM} = 8.2A$, $I_{GT} = 2mA$, rated V_{DRM}) (Rise time = 20ns, pulse width = 10 μs)	t_{gt}	-	-	2	μs
Forward voltage application rate ($V_D = \text{Rated } V_{DRM}$, $T_C = 110^\circ C$)	dv/dt	-	10	-	V/ μs

MECHANICAL CHARACTERISTICS

Case	TO-126
Marking	Alpha-numeric
Pin out	See below



	TO-126			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.425	0.435	10.80	11.050
B	0.295	0.305	7.490	7.750
C	0.095	0.105	2.410	2.670
D	0.020	0.026	0.510	0.660
F	0.115	0.125	2.920	3.180
G	0.091	0.097	2.310	2.460
H	0.050	0.095	1.270	2.410
J	0.015	0.025	0.380	0.640
K	0.595	0.655	15.110	16.640
M	3° TYP		3° TYP	
Q	0.148	0.158	3.760	4.010
R	0.045	0.055	1.140	1.400
S	0.025	0.035	0.640	0.890
U	0.145	0.155	3.680	3.940
V	0.040	-	1.020	-

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FIGURE 1 – MAXIMUM CASE TEMPERATURE

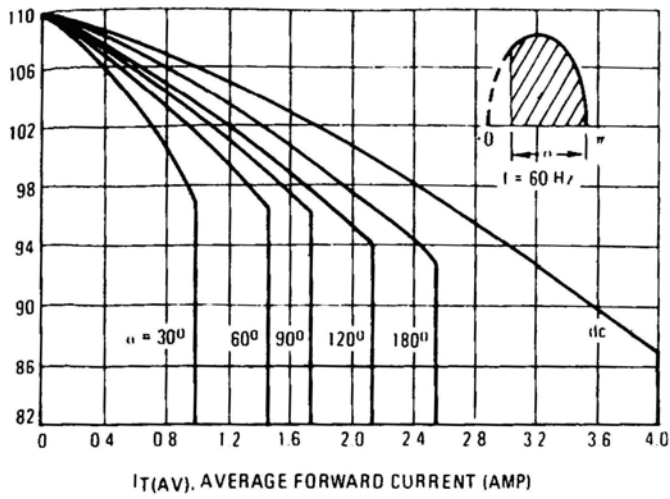


FIGURE 2 – MAXIMUM AMBIENT TEMPERATURE

