DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

2N6236-2N6241

SILICON CONTROLLED RECTIFIERS

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
Repetitive peak forward and reverse blocking voltage [1]			
(1/2 sine wave, R_{GK} = 1000Ω, T_C = -40 to +110°C)			
2N6236		30	
2N6237	V_{DRM}	50	Volts
2N6238	V_{RRM}	100	
2N6239		200	
2N6240		400	
2N6241		600	
Non-repetitive peak reverse blocking voltage			
(1/2 sine wave, R_{GK} = 1000Ω, T_C = -40 to +110°C)			
2N6236		50	
2N6237	V_{RSM}	100	Volts
2N6238		150	
2N6239		250	
2N6240		450	
2N6241		650	
Average on-state current			
(T_C = -40 to +90°C)	$I_{T(AV)}$	2.6	Amps
(T_C = 100°C)		1.6	
Surge on-state current			
(1/2 sine wave, 60Hz, T_C = 90°C)	I_{TSM}	25	Amps
(1/2 sine wave, 1.5ms, T_C = 90°C)		35	
Circuit fusing (T_C = -40 to +110°C, t = 8.3ms)	I^2t	2.6	A^2s
Peak gate power (pulse width = 10µs, T_C = 90°C)	P_{GM}	0.5	Watts
Average gate power (t = 8.3ms, T_C = 90°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	°C
Storage temperature range	T_{stg}	-40 to 150	°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	°C/W
Thermal resistance, junction to ambient	$R_{\Theta JA}$	75	°C/W

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

Characteristic	Symbol	Min	Typ	Max	Unit
Peak forward or reverse blocking current					
(Rated V_{DRM} or V_{RRM})					
T_C = 25°C	I_{DRM}, I_{RRM}	-	-	10	µA
T_C = 110°C		-	-	200	
Peak forward "on" voltage	V_{TM}				Volts
(I_{TM} = 8.2A peak, pulse width = 1 to 2ms, 2% duty cycle)		-	-	2.2	
Gate trigger current (continuous dc)	I_{GT}				µA
(V_{AK} = 12Vdc, R_L = 24Ω)		-	-	200	
(V_{AK} = 12Vdc, R_L = 24Ω, T_C = -40°C)		-	-	500	
Gate trigger voltage (continuous dc)	V_{GT}				Volts
(Source voltage = 12V, R_S = 50Ω)		-	-	1	
(V_{AK} = 12Vdc, R_L = 24Ω, T_C = -40°C)					
Gate non-trigger voltage	V_{GD}				Volts
(V_{AK} = rated V_{DRM}, R_L = 100Ω, T_C = 110°C)		0.2	-	-	
Holding current	I_H				mA
(V_{AK} = 12Vdc, I_{GT} = 2mA)					
(initiating on state current = 200mA)					
T_C = 25°C		-	-	5	
T_C = -40°C		-	-	10	
Total turn-on time	t_{gt}				µs
(Source voltage = 12V, R_S = 6kΩ)		-	-	2	
(I_{TM} = 8.2A, I_{GT} = 2mA, rated V_{DRM})					
(Rise time = 20ns, pulse width = 10µs)					
Forward voltage application rate	dv/dt				V/µs
(V_D = Rated V_{DRM}, T_C = 110°C)		-	10	-	

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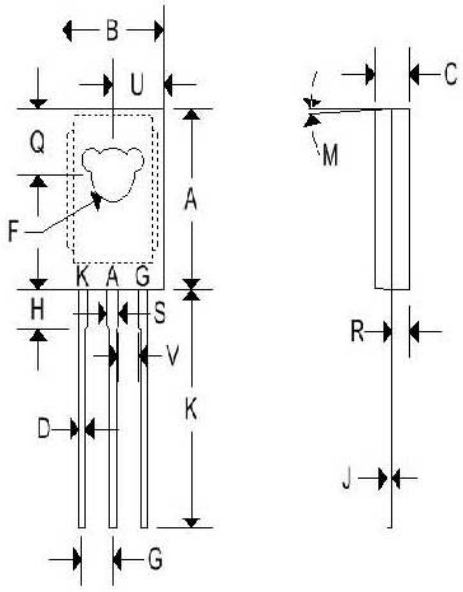
MECHANICAL CHARACTERISTICS

Case:	TO-126
Marking:	Body painted, 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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SILICON CONTROLLED RECTIFIERS

FIGURE 1 – MAXIMUM CASE TEMPERATURE

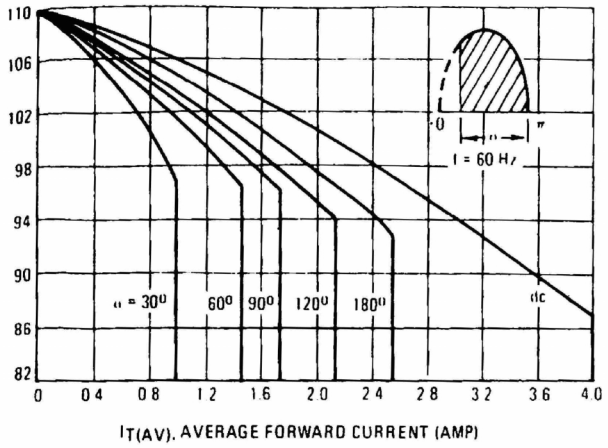

FIGURE 2 – MAXIMUM AMBIENT TEMPERATURE