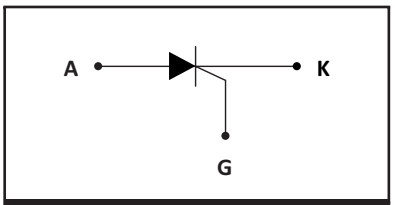
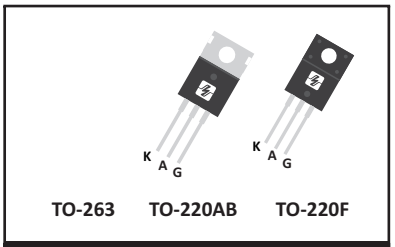
20A SERIES STANDARD
SILICON CONTROLLED RECTIFIERS



SCHEMATIC SYMBOL



PACKAGE

DESCRIPTION

The TYN820 SCR is suitable to fit modes of control found in applications such as voltage regulation circuits for motorbikes,over-voltage crowbar protection,motor control circuits in power tools and kitchen aids , inrush current limiting circuits ,capacitive discharge ignition. The insulated fullpack package allows a back toback configuration.

FEATURES

- Repetitive Peak Off-State Voltage : 800V
- R.M.S On-State Current ($I_{T(RMS)}$= 20 A)
- Low On-State Voltage (1.7V(Max.)@ I_{TM})
- RoHS Compliant

ABSOLUTE MAXIMUM RATINGS (T_J = 25°C UNLESS OTHERWISE SPECIFIED)

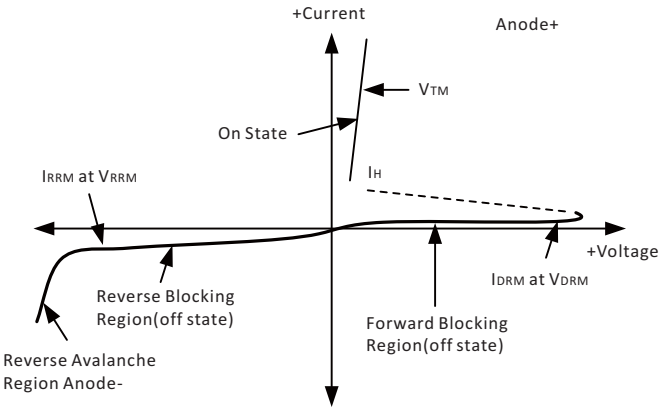
Symbol	Parameter			Value	Unit
V_{DRM}	Repetitive Peak off -State Voltage			800	V
V_{RRM}	Repetitive Peak Reverse Voltage			800	V
$I_{T(RMS)}$	RMS on-state current		Tc = 109°C	20	A
$I_{T(AV)}$	Average on-state current		Tc = 109°C	13	A
I_{TSM}	Non repetitive surge peak on-state current	tp = 8.3 ms	Tj = 25°C	200	A
		tp = 10 ms		220	
I^2t	I^2t Value for fusing	tp = 10 ms	Tj = 25°C	200	A^2S
dI/dt	Critical rate of rise of on-state current I_G = 2 x I_{GT}, tr≤100ns	F = 60 Hz	Tj = 125°C	50	A/μs
I_{GM}	Peak gate current	tp = 20 μs	Tj = 125°C	4	A
$P_{G(AV)}$	Average gate power dissipation		Tj = 125°C	1.0	W
T_{stg}	Storage junction temperature range			- 40 to + 150	°C
T_j	Operating junction temperature range			- 40 to + 125	

ELECTRICAL CHARACTERISTICS (TC = 25 °C UNLESS OTHERWISE NOTED)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_{GT}	V_D = 12 V R_L = 30ohm		3	-	25	mA
V_{GT}			-	-	1.3	V
V_{GD}	$V_D = V_{DRM}$ R_{GK} = 1.0 kohm	T_j = 125°C	0.2	-	-	V
I_H	I_T = 500 mA		-	-	40	mA
I_L	I_G = 1.2 I_{GT}		-	-	60	mA
dv/dt	V_D = 67 % V_{DRM} Gate open	T_j = 125°C	500	-	-	V/µs
V_{TM}	I_{TM} = 30 A t_p = 380 µs	T_j = 25°C	-	-	1.6	V
I_{DRM}	$V_D = V_{DRM}$ $V_R = V_{RRM}$	T_j = 25°C	-	-	5.0	µA
I_{RRM}		T_j = 125°C	-	-	2.0	mA

VOLTAGE CURRENT CHARACTERISTIC OF SCR

PARAMETER	SYMBOL
Peak Repetitive OffStat Forward Voltage	V_{DRM}
Peak Forward Blocking Current	I_{DRM}
Peak Repetitive OffState Reverse Voltage	V_{RRM}
Peak Reverse Blocking Current	I_{RRM}
Peak OnState Voltage	V_{TM}
HoldingCurrent	I_H



PACKAGE MECHANICAL DATA

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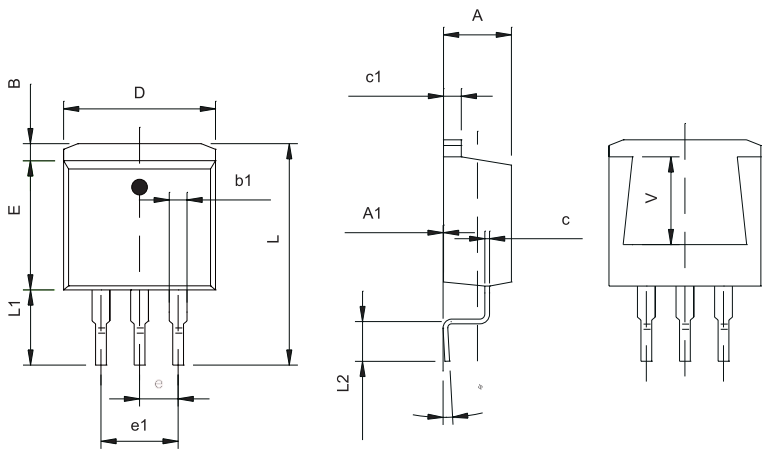

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.47	4.67	0.176	0.184
A1	0	0.15	0	0.006
B	1.12	1.42	0.044	0.056
b	0.71	0.91	0.028	0.036
b1	1.17	1.37	0.046	0.054
c	0.31	0.53	0.012	0.021
c1	1.17	1.37	0.046	0.054
D	10.01	10.31	0.394	0.406
E	8.5	8.9	0.335	0.350
e	2.54Typ		0.10Typ	
e1	4.98	5.18	0.196	0.204
L	14.94	15.5	0.588	0.610
L1	4.95	5.45	0.195	0.215
L2	2.34	2.74	0.092	0.108
F	0^O	8^O	0^O	8^o
V	5.60Ref.		0.22 Ref.	

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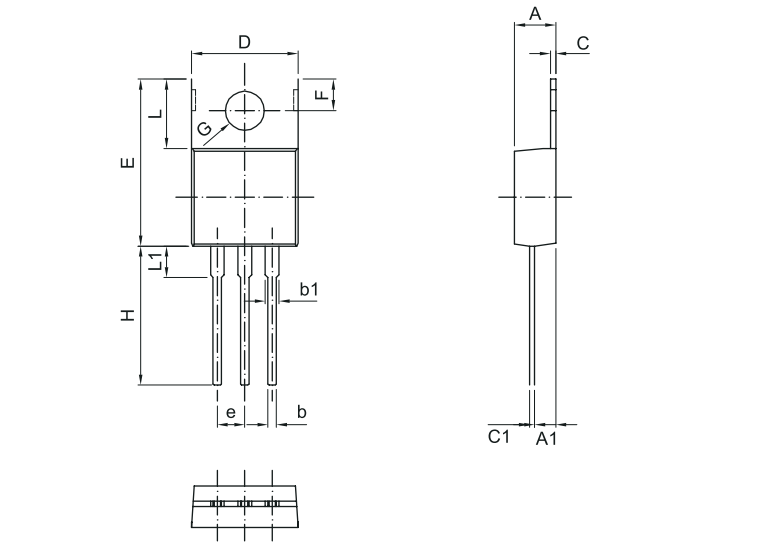
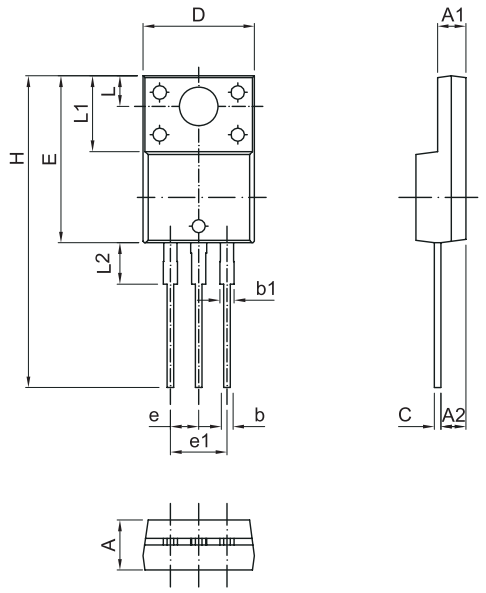


Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.56	4.83	0.140	0.190
A1	2.03	2.92	0.080	0.115
b	0.38	1.02	0.015	0.040
b1	1.14	1.78	0.045	0.070
C	0.51	1.40	0.020	0.055
C1	0.36	0.61	0.014	0.024
D	9.65	10.67	0.380	0.420
E	14.22	16.51	0.560	0.650
e	2.54BSC		0.10BSC	
F	2.54	3.05	0.100	0.120
G	3.53	3.90	0.139	0.154
H	12.70	14.73	0.500	0.580
L	5.84	6.86	0.230	0.270
L1	-	6.35	-	0.250

TO-220F



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
A1	2.60	2.80	0.102	0.110
A2	2.45	2.55	0.096	0.100
b	0.50	0.75	0.020	0.030
b1	1.10	1.40	0.043	0.055
C	0.50	0.70	0.020	0.028
D	9.70	10.30	0.382	0.406
E	14.70	15.30	0.579	0.602
e	2.54TYP		0.10TYP	
e1	4.88	5.28	0.192	0.208
H	27.40	28.60	1.079	1.126
L	2.50	3.00	0.098	0.118
L1	6.70	6.90	0.264	0.272
L2	3.60	3.80	0.142	0.150

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