



**SOLID STATE INC.**

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**C106A1 THRU C106M1**

**SILICON CONTROLLED RECTIFIER  
(100V to 600V)**

**JEDEC TO-202 CASE**

DESCRIPTION

C106A1 Series are PNP Silicon Controlled Rectifiers designed for applications such as temperature, light, speed control, process and remote control, and warning systems where reliability of operation is important.

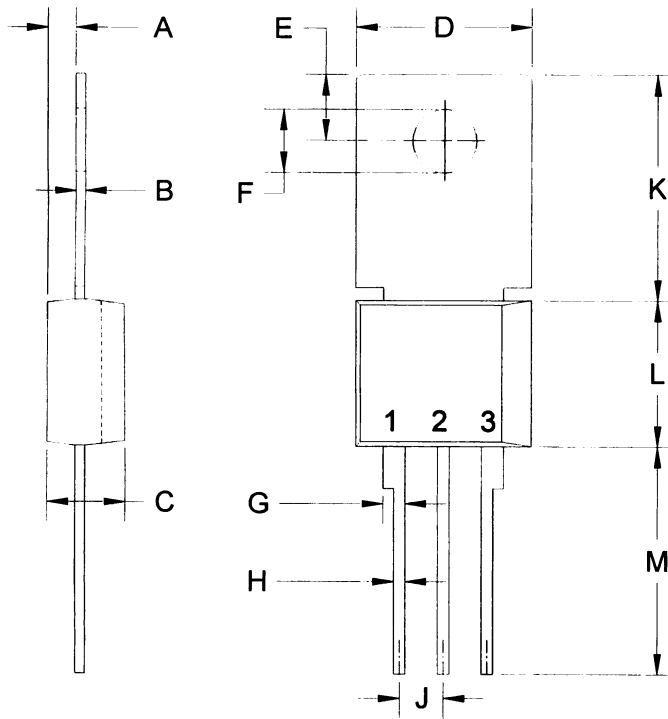
MAXIMUM RATINGS ( $T_C=25^\circ\text{C}$  unless otherwise noted)

	<u>SYMBOL</u>	<u>C106A1</u>	<u>C106B1</u>	<u>C106C1</u>	<u>C106D1</u>	<u>C106E1</u>	<u>C106M1</u>	<u>UNITS</u>
Peak Repetitive Off-State Voltage	$V_{DRM}, V_{RRM}$	100	200	300	400	500	600	V
RMS On-State Current	$I_T(\text{RMS})$			4.0				A
Peak One Cycle Surge (60Hz)	$I_{TSM}$			20				A
$I^2t$ Value for Fusing ( $t > 1.5\text{ms}$ )	$I^2t$			0.5				$\text{A}^2\text{s}$
Peak Gate Power	$P_{GM}$			0.5				W
Average Gate Power	$P_{G(AV)}$			0.1				W
Peak Forward Gate Current	$I_{GFM}$			0.2				A
Peak Reverse Gate Voltage	$V_{GRM}$			6.0				V
Storage Temperature	$T_{stg}$			-40 to +150				$^\circ\text{C}$
Junction Temperature	$T_J$			-40 to +110				$^\circ\text{C}$
Thermal Resistance (Case)	$\Theta_{J-C}$			3.0				$^\circ\text{C/W}$
Thermal Resistance	$\Theta_{J-A}$			75				$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ( $T_C=25^\circ\text{C}$  unless otherwise noted)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>TYP</u>	<u>MAX</u>	<u>UNITS</u>
$I_{DRM}, I_{RRM}$	Rated $V_{DRM}, V_{RRM}, R_{GK}=1\text{k}\Omega$			10	$\mu\text{A}$
$I_{DRM}, I_{RRM}$	Rated $V_{DRM}, V_{RRM}, R_{GK}=1\text{k}\Omega, T_C=110^\circ\text{C}$			100	$\mu\text{A}$
$V_{TM}$	$I_{FM}=4.0\text{A}$			2.2	V
$I_{GT}$	$V_{AK}=6.0\text{V}, R_L=100\Omega, R_{GK}=1\text{k}\Omega$			200	$\mu\text{A}$
$I_{GT}$	$V_{AK}=6.0\text{V}, R_L=100\Omega, R_{GK}=1\text{k}\Omega, T_C=-40^\circ\text{C}$			500	$\mu\text{A}$
$V_{GT}$	$V_{AK}=6.0\text{V}, R_L=100\Omega, R_{GK}=1\text{k}\Omega$	0.4		0.8	V
$V_{GT}$	$V_{AK}=6.0\text{V}, R_L=100\Omega, R_{GK}=1\text{k}\Omega, T_C=-40^\circ\text{C}$	0.5		1.0	V
$V_{GT}$	$V_{AK}=\text{Rated } V_{DRM}, R_L=3\text{k}\Omega, R_{GK}=1\text{k}\Omega, T_C=110^\circ\text{C}$	0.2			V
$I_{HX}$	$V_D=12\text{V}, R_{GK}=1\text{k}\Omega$	0.3		3.0	$\text{mA}$
$I_{HX}$	$V_D=12\text{V}, R_{GK}=1\text{k}\Omega, T_C=-40^\circ\text{C}$	0.4		6.0	$\text{mA}$
$I_{HX}$	$V_D=12\text{V}, R_{GK}=1\text{k}\Omega, T_C=110^\circ\text{C}$	0.14		2.0	$\text{mA}$
$I_{LX}$	$V_D=12\text{V}, R_{GK}=1\text{k}\Omega$	0.3		4.0	$\text{mA}$
$I_{LX}$	$V_D=12\text{V}, R_{GK}=1\text{k}\Omega, T_C=-40^\circ\text{C}$	0.4		8.0	$\text{mA}$
$dv/dt$	$V_D=\text{Rated } V_{DRM}, R_{GK}=1\text{k}\Omega, T_C=110^\circ\text{C}$		8.0		$\text{V}/\mu\text{s}$
$t_{gt}$ (turn-on time)			1.2		$\mu\text{s}$
$t_q$ (turn-off time)			40		$\mu\text{s}$

TO-202 PACKAGE - MECHANICAL OUTLINE



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.055	0.071	1.40	1.80
B	0.016	0.024	0.40	0.60
C	0.173	0.181	4.40	4.60
D	0.374	0.413	9.50	10.50
E	0.146	0.154	3.70	3.90
F (DIA)	0.123	0.127	3.60	3.80
G	0.033	0.055	1.00	1.40
H	0.024	0.034	0.60	0.80
J	0.094	0.106	2.39	2.69
K	0.492	0.551	12.50	14.00
L	0.297	0.346	8.30	8.80
M	0.492	0.531	12.50	13.50

TO-202

R1

Lead Code:

- 1) Cathode
- 2) Anode
- 3) Gate