C106 Series

勝 特 力 材 料 886-3-5753170 胜特力电子(上海) 86-21-54151736 胜特力电子(深圳) 86-755-83298787 Http://www.100y.com.tw

Preferred Devices

Sensitive Gate Silicon Controlled Rectifiers

Reverse Blocking Thyristors

Glassivated PNPN devices designed for high volume consumer applications such as temperature, light, and speed control; process and remote control, and warning systems where reliability of operation is important.

- Glassivated Surface for Reliability and Uniformity
- Power Rated at Economical Prices
- Practical Level Triggering and Holding Characteristics
- Flat, Rugged, Thermopad Construction for Low Thermal Resistance, High Heat Dissipation and Durability
- Sensitive Gate Triggering
- Device Marking: Device Type, e.g., C106B, Date Code

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

Rating	Symbol	Value	Unit
$\begin{array}{l} \mbox{Peak Repetitive Off-State Voltage (Note 1)} \\ \mbox{(Sine Wave, 50-60 Hz, R_{GK} = 1 k\Omega,} \\ \mbox{T}_{C} = -40^{\circ} \mbox{ to } 110^{\circ}\mbox{C}) \\ \mbox{C106B} \\ \mbox{C106D1} \\ \mbox{C106M1} \end{array}$	V _{DRM} , V _{RRM}	200 400 600	Volts
On-State RMS Current (180° Conduction Angles, T _C = 80°C)	I _{T(RMS)}	4.0	Amps
Average On–State Current (180° Conduction Angles, T _C = 80°C)	I _{T(AV)}	2.55	Amps
Peak Non-Repetitive Surge Current (1/2 Cycle, Sine Wave, 60 Hz, $T_J = +110^{\circ}C$)	I _{TSM}	20	Amps
Circuit Fusing Considerations (t = 8.3 ms)	l ² t	1.65	A ² s
Forward Peak Gate Power (Pulse Width \leq 1.0 µsec, T _C = 80°C)	P _{GM}	0.5	Watt
Forward Average Gate Power (Pulse Width \leq 1.0 µsec, T _C = 80°C)	P _{G(AV)}	0.1	Watt
Forward Peak Gate Current (Pulse Width \leq 1.0 µsec, T _C = 80°C)	I _{GM}	0.2	Amp
Operating Junction Temperature Range	TJ	-40 to +110	°C
Storage Temperature Range	T _{stg}	-40 to +150	°C
Mounting Torque (Note 2)	N -	6.0	in. lb.

 V_{DRM} and V_{RRM} for all types can be applied on a continuous basis. Ratings apply for zero or negative gate voltage; however, positive gate voltage shall not be applied concurrent with negative potential on the anode. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.

 Torque rating applies with use of compression washer (B52200F006). Mounting torque in excess of 6 in. lb. does not appreciably lower case-to-sink thermal resistance. Anode lead and heatsink contact pad are common.



ON Semiconductor®

SCRs 4 AMPERES RMS 200 thru 600 VOLTS





TO-225AA (formerly TO-126) CASE 077 STYLE 2

V.CO	PIN ASSIGNMENT
1 CC	Cathode
2	Anode
3	Gate
1	

ORDERING INFORMATION

Device	Package	Shipping
C106B	TO225AA	500/Box
C106D	TO225AA	500/Box
C106D1	TO225AA	500/Box
C106M	TO225AA	500/Box
C106M1	TO225AA	500/Box

Preferred devices are recommended choices for future use and best overall value.

THERMAL CHARACTERISTICS (T _C = 25°C unless o	C106 Serie	es	勝 胜 胜	特力电子 特力电子 特力电子 Http://	材 科 88 ⁴ (上海) 86 ⁴ (深圳) 86 /www.10	6–3–575 5–21–541 5–755–83 00y. com.	53170 51736 298787 tw
Characteristic	WTS	WWY	Syn	nbol	Max		Unit
Thermal Resistance, Junction to Case	Wn	WW	Re	JC	3.0	N (°C/W
Thermal Resistance, Junction to Ambient	ONL.L	100	R	A	75	N C	°C/W
Maximum Lead Temperature for Soldering Purposes 1/8"	from Case for 10 Se	econds	N	700	260		°C
ELECTRICAL CHARACTERISTICS (T _C = 25°C unles	ss otherwise noted.)		N.100 .	COM		
Characteristic	. M.T.W	Symbo)	Min	Тур	Max	Unit
OFF CHARACTERISTICS	Y.COMITW		W V	10	N.C.	M.T.W	
Peak Repetitive Forward or Reverse Blocking Current (V_{AK} = Rated V_{DRM} or V_{RRM} , R_{GK} = 1000 Ohms)	T _J = 25°C T _J = 110°C	I _{DRM} , I _{RI}	RM	WAN	07.C	10 100	μΑ μΑ
ON CHARACTERISTICS	100Y.CO.	IN	1	N.N.	100%.	M	N
Peak Forward On–State Voltage (Note 3) (I _{TM} = 4 A)	V.100Y.COM	VTM		M DAN	N.100Y	2.2	Volts
Gate Trigger Current (Continuous dc) (Note 4) (V _{AK} = 6 Vdc, R _L = 100 Ohms)	$T_J = 25^{\circ}C$ $T_J = -40^{\circ}C$	I _{GT}	[414	15 35	200 500	μA
Peak Reverse Gate Voltage (I _{GR} = 10 μA)	N.1001.2	V _{GRM}	-1		1.17	6.0	Volts
Gate Trigger Voltage (Continuous dc) (Note 4) (V _{AK} = 6 Vdc, R _L = 100 Ohms)	$T_J = 25^{\circ}C$ $T_J = -40^{\circ}C$	V _{GT}	N N	0.4 0.5	0.60 0.75	0.8 1.0	Volts
Gate Non–Trigger Voltage (Continuous dc) (Note 4) $(V_{AK} = 12 \text{ V}, \text{ R}_{L} = 100 \text{ Ohms}, \text{ T}_{J} = 110^{\circ}\text{C})$	WWW.100	V _{GD}	TW	0.2	NN.	N.1 9 01	Volts
Latching Current (V_{AK} = 12 V, I _G = 20 mA)	T _J = 25°C T _J = -40°C	07.CQ	M.I	_ W_	0.20 0.35	5.0 7.0	mA
Holding Current (V _D = 12 Vdc) (Initiating Current = 20 mA, Gate Open)	$T_{J} = 25^{\circ}C$ $T_{J} = -40^{\circ}C$ $T_{J} = +110^{\circ}C$	100X [!] HC	707 0 <u>1</u> 07	127.	0.19 0.33 0.07	3.0 6.0 2.0	mA

DTNAMIC CHARACTERISTICS						
Critical Rate–of–Rise of Off–State Voltage (V_{AK} = Rated V _{DRM} , Exponential Waveform, R _{GK} = 1000 Ohms, T _J = 110°C)	dv/dt	OM.T	8.0	MA D	V/µs	
 Pulse Test: Pulse Width ≤ 2.0 ms, Duty Cycle ≤ 2%. R_{GK} is not included in measurement. 	WWW.100Y	Y.COM.	TW WT	4	VWW.10	

. 2 %. NY 1001.CON 3. Pulse Test: Pulse Width \leq 2.0 ms, Duty Cycle \leq 2%.

4. R_{GK} is not included in measurement. WWW.100Y.COM.TW





C106 Series



0.3

0.2

-45

-25 -10 20

35

TJ, JUNCTION TEMPERATURE (°C)

Figure 5. Typical Gate Trigger Voltage versus **Junction Temperature**

50

5

65

95

110

80



10

-40 -25 -10

5

20

35

T.J. JUNCTION TEMPERATURE (°C)

Figure 6. Typical Latching Current versus

Junction Temperature

50

65

80

95

110 OM.T

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C106 Series

Package Interchangeability

The dimensional diagrams below compare the critical dimensions of the ON Semiconductor C-106 package with competitive devices. It has been demonstrated that the smaller dimensions of the ON Semiconductor package make it compatible in most lead-mount and chassis-mount applications. The user is advised to compare all critical dimensions for mounting compatibility.





ON Semiconductor C-106 Package



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WWW.100Y.CC TO-225AA (formerly TO-126) CASE 077-09 **ISSUE W**



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	ROLLING DIMENSI			I.
ым	MIN	MAX	MIN	MAY
A	0.425	0.435	10.80	11.04
B	0.295	0.305	7.50	7.74
С	0.095	0.105	2.42	2.66
D	0.020	0.026	0.51	0.66
F	0.115	0.130	2.93	3.30
G	0.094 BSC		2.39	BSC
H	0.050	0.095	1.27	2.41
J	0.015	0.025	0.39	0.63
Κ	0.575	0.655	14.61	16.63
M	<u>0.575 0.655</u> 5° TYP		5°	TYP
Q	0.148	0.158	3.76	4.01
R	0.045	0.065	1.15	1.65
S	0.025	0.035	0.64	0.88
U	0.145	0.155	3.69	3.93
V	0.040		1.02	

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