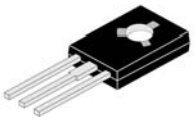
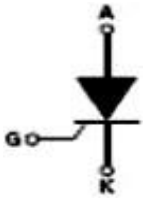
2.5 Amp SCR

C106M C106D



TO-126



TO-126 Leaded
Plastic Package
RoHS compliant

FEATURES:

1. High Blocking Voltage
2. Low On-State Voltage and high I_{TSM}
3. RoHS Compliant

APPLICATIONS

Applications in all Models of Control like Phase control, Heating Control, Voltage Regulation Circuits etc.

ABSOLUTE MAXIMUM RATINGS (Ta = 25 ℃ Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	VALUE		UNIT
			MIN	MAX	
Repetitive Peak Off-State Voltage	V_{DRM}	C106M	--	600	V
		C106D	--	400	
Repetitive Peak Reverse Voltage	V_{RRM}	C106M	--	600	V
		C106D	--	400	
Average On-State Current	$I_{T(AV)}$	Half Sine wave, Tamb ≤ 109°C	--	2.5	A
On-State RMS Current	$I_{T(RMS)}$	All Conduction Angles	--	4	A
Non-Repetitive Surge Peak On-state Current	I_{TSM}	Full Sine Wave, T_J=25°C,	--	40	A
	I^2t	t=10ms	--	6	A^2s
Repetitive Rate of Rise of On-State	di/dt	I_{TM}=20A, I_G=0.2A,	--	50	A/µs
Peak Gate Current	I_{GM}		--	0.5	A
Peak Gate Power	P_{GM}		--	1	W
Average Gate Power	$P_{G(AV)}$	over any 20ms period	--	0.2	W
Storage Temperature Range	T_{STG}		-40	150	°C
Operating Junction Temperature	T_J		--	125	°C

THERMAL RESISTANCE

PARAMETER	SYMBOL	VALUE			UNIT
		MIN	TYP	MAX	
Junction to Case (AC)	$R_{th(J-C)}$	--	--	3.0	K/W
Junction to Ambient	$R_{th(J-A)}$	--	75	--	K/W

ELECTRICAL CHARACTERISTICS at (Ta = 25 ℃ Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
Peak Repetitive Forward Blocking Current	I_{DRM}	$V_{DM}=V_{DRM(MAX)}$, $T_J=125°C$	--	0.1	0.5	mA
Peak Repetitive Reverse Blocking Current	I_{RRM}	$V_{RM}=V_{RRM(MAX)}$, $T_J=125°C$	--	0.1	0.5	mA
Peak On-State Voltage	V_{TM}	$I_{TM}=4A$	--	1.3	2.2	V
Gate Trigger Current	I_{GT}	$V_{DM}=12V$, $I_T=0.1A$	--	50	200	µA
Gate Trigger Voltage	V_{GT}	$V_{DM}=12V$, $I_T=0.1A$	--	0.4	1.5	V
Holding Current	I_H	$V_{DM}=12V$, $I_{GT}=0.1A$	--	0.3	6	mA
Latching Current	I_L	$V_{DM}=12V$, $I_{GT}=0.1A$	--	0.4	10	mA
Rise of Off-State Voltage	dV/dt	$V_{DM}=67\%V_{DRM(MAX)}$, $T_J=125°C$	50	100	--	V/µs
Gate Controlled Turn-On Time	tgt	$I_{TM}=40A$, $V_{DM}=V_{DRM(MAX)}$, $I_G=0.1A$, $dI_G/dt=5A/\mu s$	--	2	--	µs

TYPICAL CHARACTERISTICS CURVES

Fig 1: Average Current Derating

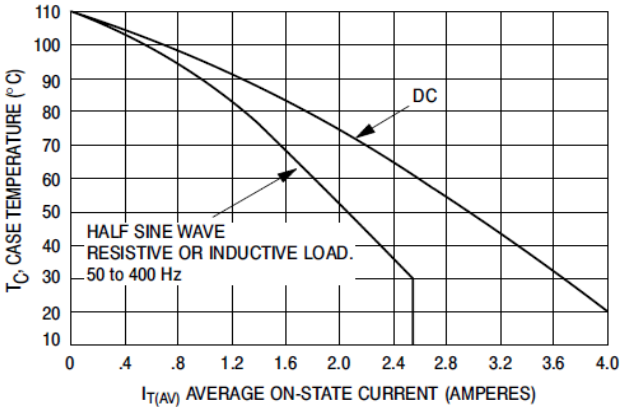


Fig 2:Maximum On−State Power Dissipation

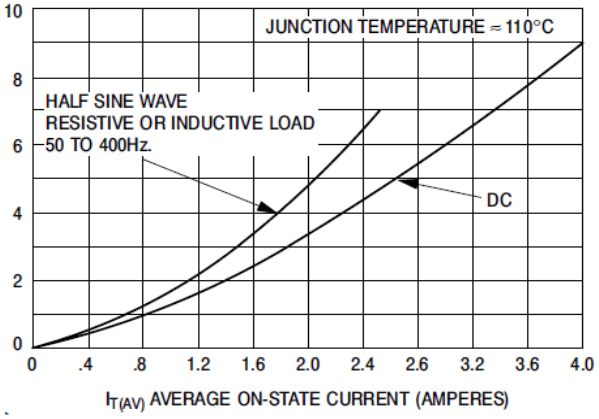


Fig 3: Typical Gate Trigger Voltage versus Junction Temperature

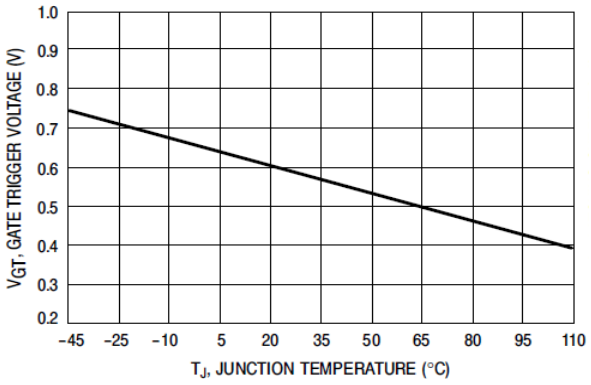


Fig 4: Typical Latching Current versus Junction Temperature

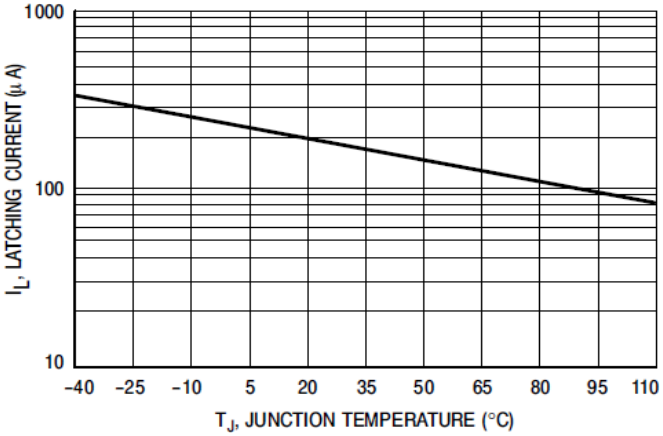


Fig 5: Typical Gate Trigger Current versus Junction Temperature

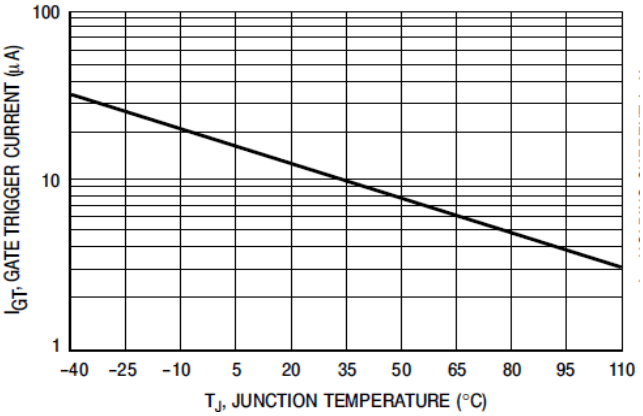
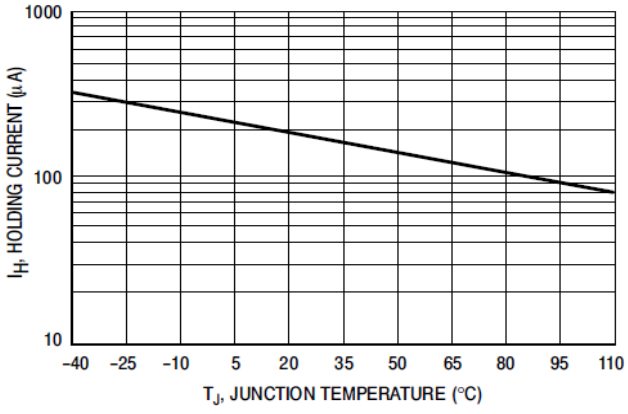
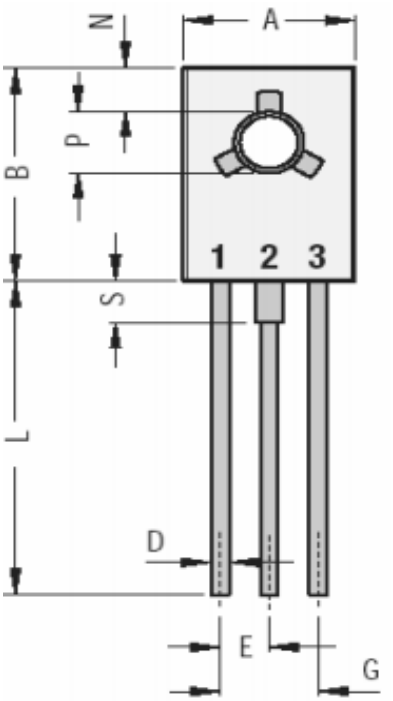


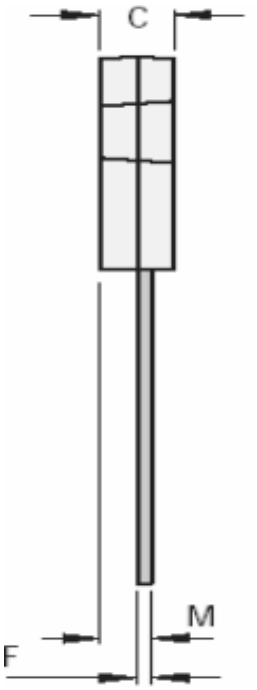
Fig 6: Typical Holding Current versus Junction Temperature



PACKAGE DETAILS

TO-126 Leaded Plastic Package





DIM.	MIN.	TYP.	MAX.
A	7.4		7.8
B	10.5		10.8
C	2.5		2.7
D	0.64		0.88
E		2.25	
F	0.39		0.63
G		4.5	
L		15.7	
M		1.27	
N		3.75	
P	2.9		3.2
S		2.5	

All dimensions in mm

PIN CONFIGURATION

1: CATHODE
2: ANODE
3: GATE

Recommended Product Storage Environment for Discrete Semiconductor Devices

This storage environment assumes that the Diodes and transistors are packed properly inside the original packing supplied by CDIL.

- Temperature 5 °C to 30 °C
- Humidity between 40 to 70 %RH
- Air should be clean.
- Avoid harmful gas or dust.
- Avoid outdoor exposure or storage in areas subject to rain or water spraying .
- Avoid storage in areas subject to corrosive gas or dust. Product shall not be stored in areas exposed to direct sunlight.
- Avoid rapid change of temperature.
- Avoid condensation.
- Mechanical stress such as vibration and impact shall be avoided.
- The product shall not be placed directly on the floor.
- The product shall be stored on a plane area. They should not be turned upside down. They should not be placed against the wall.

Shelf Life of CDIL Products

The shelf life of products is the period from product manufacture to shipment to customers. The product can be unconditionally shipped within this period. The period is defined as 2 years.
If products are stored longer than the shelf life of 2 years the products shall be subjected to quality check as per CDIL quality procedure.
The products are further warranted for another one year after the date of shipment subject to the above conditions in CDIL original packing.

Floor Life of CDIL Products and MSL Level

When the products are opened from the original packing, the floor life will start.
For this, the following JEDEC table may be referred:

JEDEC MSL Level		
Level	**Time**	**Condition**
1	Unlimited	≤30 °C / 85% RH
2	1 Year	≤30 °C / 60% RH
2a	4 Weeks	≤30 °C / 60% RH
3	168 Hours	≤30 °C / 60% RH
4	72 Hours	≤30 °C / 60% RH
5	48 Hours	≤30 °C / 60% RH
5a	24 Hours	≤30 °C / 60% RH
6	Time on Label(TOL)	≤30 °C / 60% RH

Customer Notes

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).
CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.