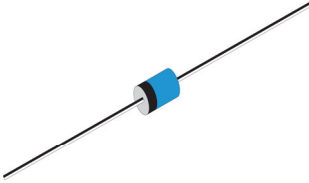


## HIGH SPEED SILICON SWITCHING DIODE

CT 40 ~ CT 59

CT 70 ~ CT 79



**DO-35 Glass Axial  
Leaded Package  
RoHS compliant**

### DO-35 FEATURES:

1. General Purpose Hermetically Sealed Glass Package Switching Diode

### ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C Unless otherwise specified)

PARAMETER	SYMBOL	VALUE	UNIT
Average Rectified Current	$I_{F(AV)}$	75	mA
Peak Rectified Current	$I_{FRM}$	200	mA
Power Dissipation At $T_A=25^\circ\text{C}$	$P_{TA}$	500	mW
Derating Factor		2.86	mW/°C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	-65 to +200	°C

### ELECTRICAL CHARACTERISTICS at (Ta = 25 °C Unless otherwise specified)

Device	Peak Inverse Voltage PIV (V)	Min Forward Current $I_F @ 1V$ (mA)	Max Reverse Current $I_R @ V_R$ ( $\mu\text{A}$ )	Reverse Voltage ( $V_R$ ) (V)
CT40	25	10	0.1	20
CT41	40	10	0.1	30
CT42	50	10	0.1	40
CT43	75	10	5.0	50
CT44	100	10	5.0	75
CT45	25	20	0.1	20
CT46	40	20	0.1	30
CT47	50	20	0.1	40
CT48	75	20	5.0	50
CT49	100	20	5.0	75
CT50	25	10	0.1	20
CT51	40	10	0.1	30
CT52	50	10	0.1	40
CT53	75	10	5.0	50
CT54	100	10	5.0	75
CT55	25	20	0.1	20



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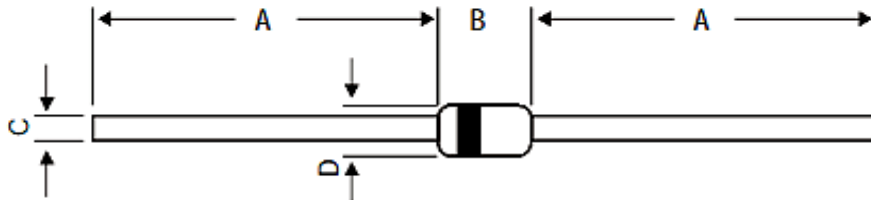
**ELECTRICAL CHARACTERISTICS at** (Ta = 25 °C Unless otherwise specified)

Device	Peak Inverse Voltage PIV (V)	Min Forward Current I <sub>F</sub> @ 1V (mA)	Max Reverse Current I <sub>R</sub> @ V <sub>R</sub> (µA)	Reverse Voltage (V <sub>R</sub> ) (V)
CT56	40	20	0.1	30
CT57	50	20	0.1	40
CT58	75	20	5.0	50
CT59	100	20	5.0	75
CT70	25	50	0.1	20
CT71	40	50	0.1	30
CT72	50	50	0.1	40
CT73	75	50	5.0	50
CT74	100	50	5.0	75
CT75	25	100	0.1	20
CT76	40	100	0.1	30
CT77	50	100	0.1	40
CT78	75	100	5.0	50
CT79	100	100	5.0	75

PARAMETER	SYMBOL	TEST CONDITION	VALUE		UNIT
			MIN	MAX	
Diode Capacitance	C <sub>d</sub>	V <sub>R</sub> =0, f=1MHz			
		CT 40 TO CT 49	--	4	pF
		CT 50 TO CT 79	--	2	pF
Reverse Recovery Time	t <sub>rr</sub>	I <sub>R</sub> =10mA, V <sub>R</sub> =6V, R <sub>L</sub> =100Ω	--	4	ns

## PACKAGE DETAIL

### DO-35 Glass Axial Package

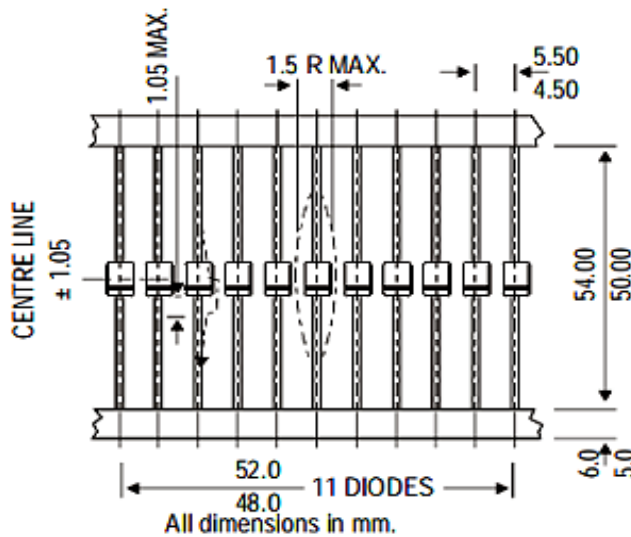


DIM	MIN	MAX
A	25.40	--
B	3.03	4.44
C	0.46	0.56
D	1.52	2.29

#### NOTES:

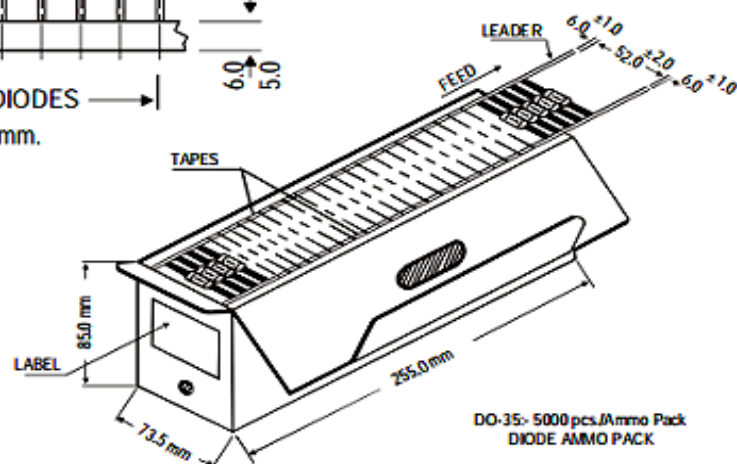
1. Cathode is marked by Band.
2. All dimensions are in mm.

### DO-35, 52mm Taping Specification



#### 52 mm Taping Specification

1. T & A Indicates Axial Tape & Ammo packing (52 mm Tape Spacing).
2. 300 mm (min) leader tape on every spool.
3. No. of empty places allowed 0.25% without consecutive empty places.
4. Ends of leads shall preferably not protrude beyond the tapes.
5. Components shall be held sufficiently in the tape or tapes so that they can not come free in normal handling.



On request also available in 26 mm Tape and Ammo Pack

### Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
DO-35 T&A	5K/Ammo box	0.88 kg/5K pcs	10' x 3.5' x 3.5'	5K	12.7' x 12.7' x 20'	125K	25 kgs

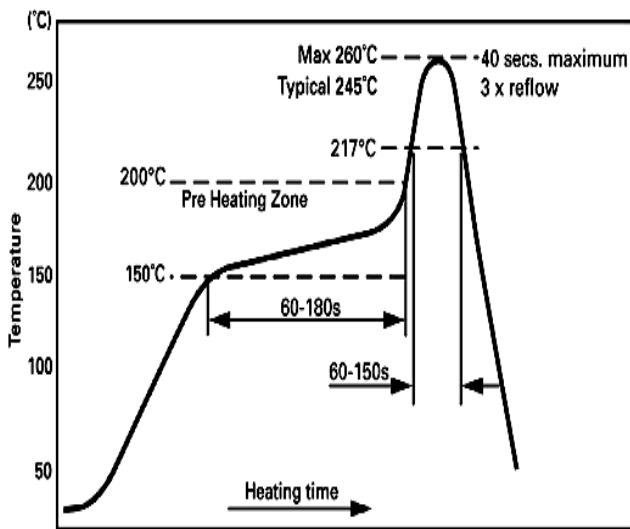
### Recommended Reflow Solder Profiles

The recommended reflow solder profiles for Pb and Pb-free devices are shown below.

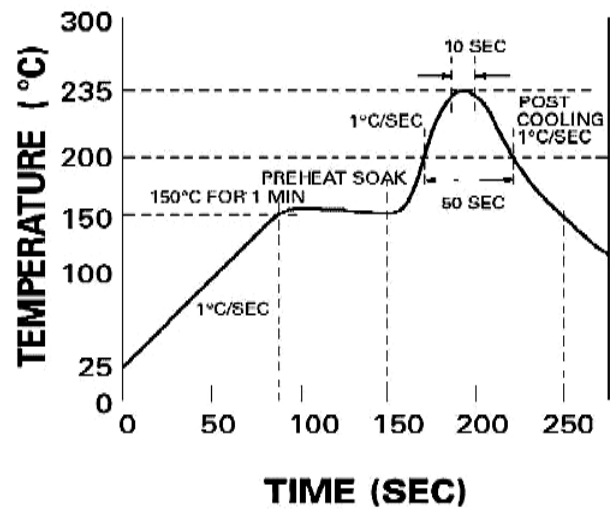
Figure 1 shows the recommended solder profile for devices that have Pb-free terminal plating, and where a Pb-free solder is used.

Figure 2 shows the recommended solder profile for devices with Pb-free terminal plating used with leaded solder, or for devices with leaded terminal plating used with a leaded solder.

**Figure 1**



**Figure 2**

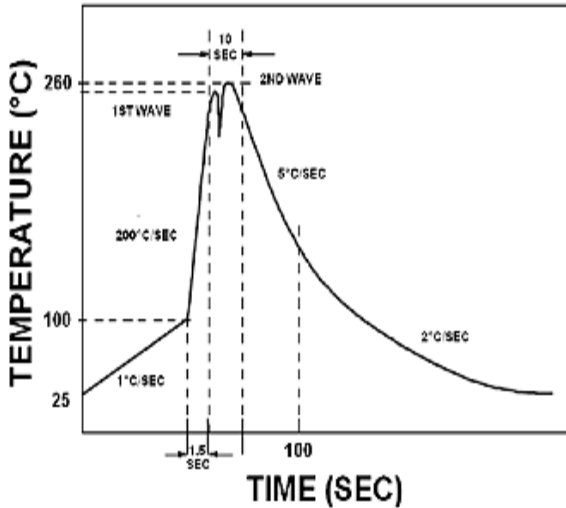


#### Reflow profiles in tabular form

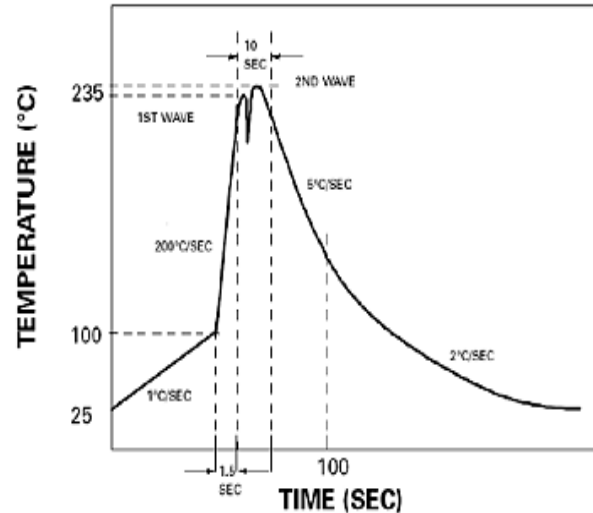
Profile Feature	Sn-Pb System	Pb-Free System
Average Ramp-Up Rate	~3°C/second	~3°C/second
<b>Preheat</b>		
– Temperature Range	150-170°C	150-200°C
– Time	60-180 seconds	60-180 seconds
Time maintained above:		
– Temperature	200°C	217°C
– Time	30-50 seconds	60-150 seconds
Peak Temperature	235°C	260°C max.
Time within +0 -5°C of actual P	10 seconds	40 seconds
Ramp-Down Rate	3°C/second max.	6°C/second max.

### Recommended Wave Solder Profiles

The Recommended solder Profile For Devices with Pb-free terminal plating where a Pb-free solder is used



The Recommended solder Profile For Devices with Pb-free terminal plating used with leaded solder, or for devices with leaded terminal plating used with leaded solder



### Wave Profiles in Tabular Form

Profile Feature	Sn-Pb System	Pb-Free System
Average Ramp-Up Rate	~200°C/second	~200°C/second
Heating rate during preheat	Typical 1-2, Max 4°C/sec	Typical 1-2, Max 4°C/Sec
Final preheat Temperature	Within 125°C of Solder Temp	Within 125°C of Solder Temp
Peak Temperature	235°C	260°C max.
Time within +0 -5°C of actual Peak	10 seconds	10 seconds
Ramp-Down Rate	5°C/second max.	5°C/second max



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## 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



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## 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.



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**Continental Device India Pvt. Limited**

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone +91-11-2579 6150, 4141 1112 Fax +91-11-2579 5290, 4141 1119

email@cdil.com www.cdil.com

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