

SILICON SCHOTTKY BARRIER DIODES

**LL103A LL103B
LL103C**



**SOD - 80C
Mini MELF (LL- 34)
RoHS compliant**

SOD-80C
(Mini MELF)

GENERAL DESCRIPTION:

The LL103A, B, C is a metal on Silicon Schottky barrier device which is protected by a PN junction guard ring. The low forward voltage drop and fast switching make it ideal for protection of MOS devices, steering, biasing and coupling diodes for fast switching and low logic level applications. Other uses are for click suppression, efficient full wave bridges in telephone subsets, and as blocking diodes in rechargeable low voltage battery systems.

APPLICATION: For General Purpose Applications

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

PARAMETER	SYMBOL	VALUE			UNIT
		LL103A	LL103B	LL103C	
Peak Reverse Voltage	V_{RRM}	40	30	20	V
Power Dissipation (Infinite Heat Sink)	P_{tot}^*	400			mW
Single Cycle Surge 60Hz Sine Wave	I_{FSM}	15			A
Junction Temperature	T_j	125			°C
Storage Temperature Range	T_{stg}	-55 to +175			°C

* Valid Provided that Electrodes are Kept at Ambient Temperature

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

PARAMETER	SYMBOL	TEST CONDITION	VALUE		UNIT
			TYP	MAX	
Forward Voltage	V_F	$V_F=20mA$	--	0.37	V
		$V_F=200mA$	--	0.60	V
Leakage Current	LL103A	$V_R=30V$	--	5.0	μA
	LL103B	$V_R=20V$	--	5.0	μA
	LL103C	$V_R=10V$	--	5.0	μA
Junction Capacitance	C_{tot}	$V_R=0V, f=1MHz$	50	--	pF
Reverse Recovery Time	t_{rr}	at $I_F=I_R=5mA$ to 200mA,	10	--	ns

TYPICAL CHARACTERISTICS CURVES

Fig 1: Typical variation of fwd. current vs. forward voltage for primary conduction through the Schottky barrier

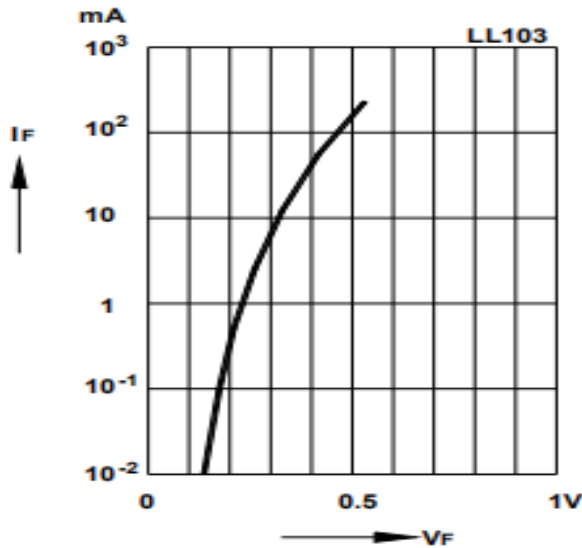


Fig 2: Typical high current forward conduction curve $t_p=300 \mu s$, duty cycle=2%

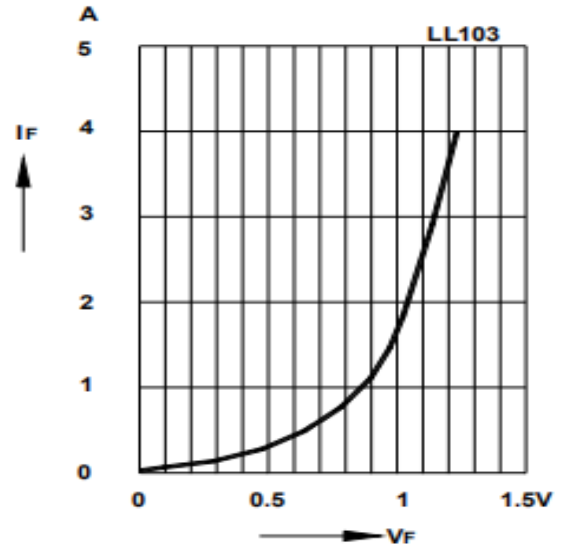


Fig 3: Typical non repetitive forward surge current versus pulse width Rectangular pulse

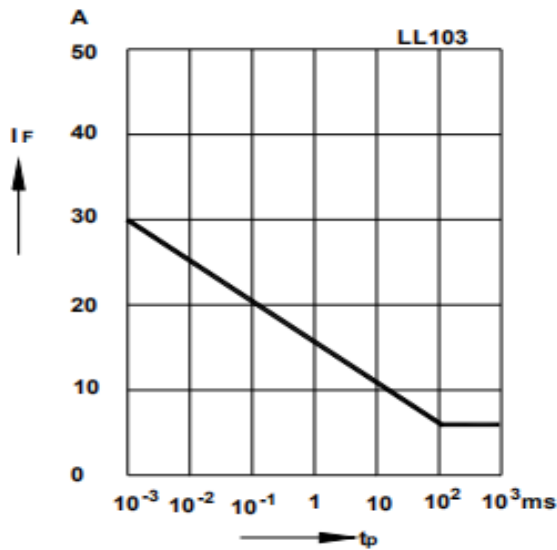
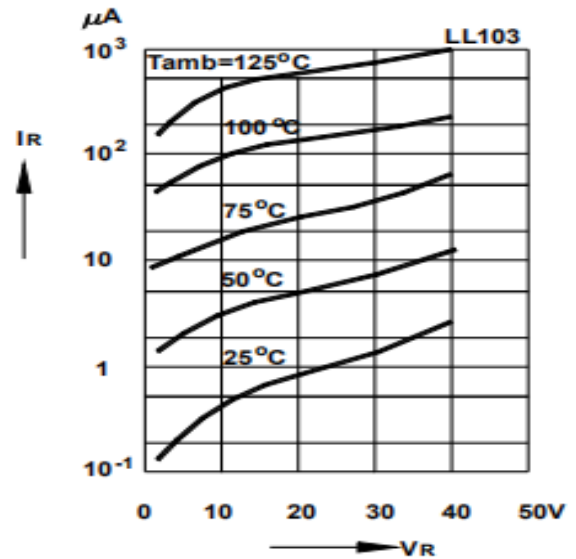


Fig 4: Typical variation of reverse current at various temperatures



TYPICAL CHARACTERISTICS CURVES

Fig 5: Blocking voltage deration versus temperature at various average forward currents

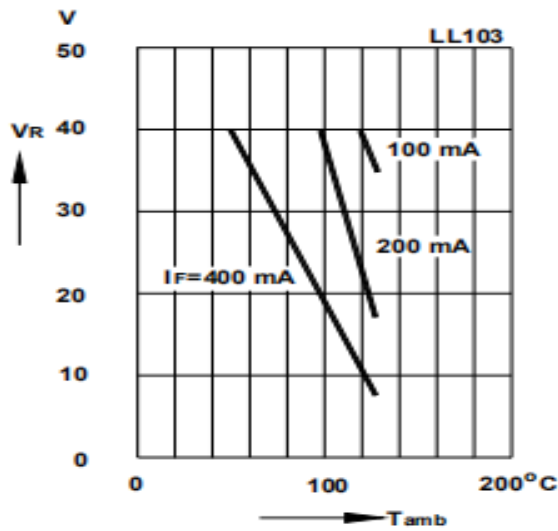
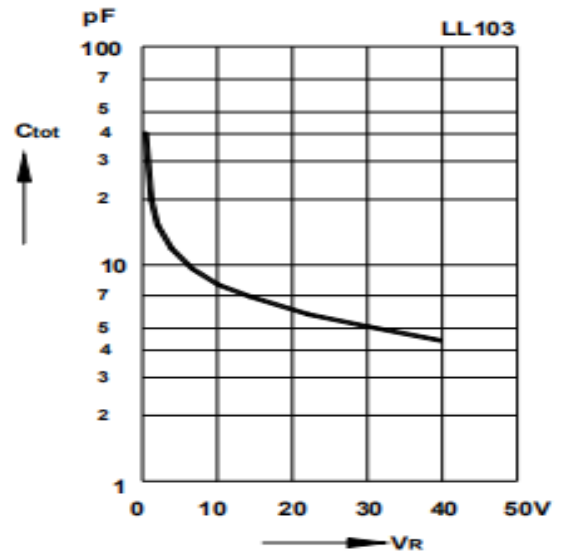


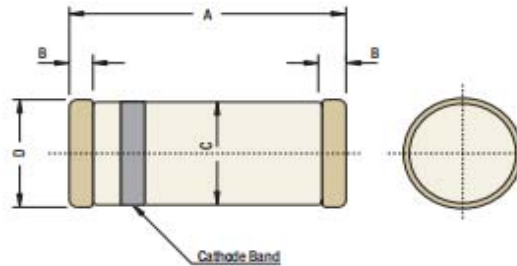
Fig 6: Typical capacitance versus reverse voltage



Package Details

SOD - 80C Mini MELF

SOD-80C/LL-34
 (Mini MELF)
 Hermetically Sealed
 SMD Glass Package



DIM	Min	Max
A	3.30	3.70
B	0.20	0.40
C	1.375	1.425
D	1.40	1.54

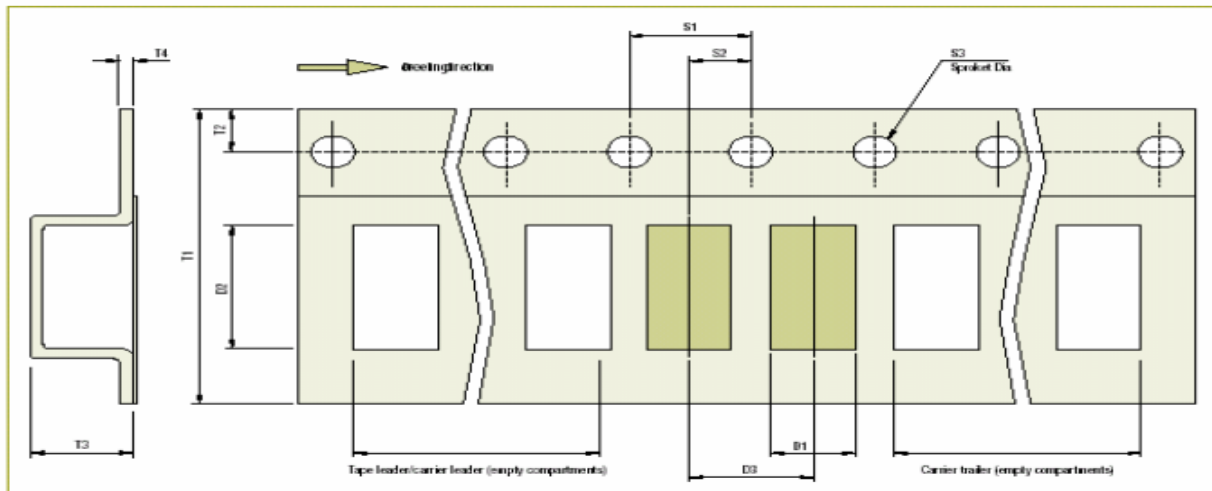
Cathode is marked by a Band

Packaging Specifications ...

T & A: Tape and Ammo Pack; T & R: Tape and Reel; Bulk: Loose in Poly Bags; Tube: Tube and Carton; K: 1,000

Package / Case Type	Packaging Type	Inner Carton				Outer Carton		
		Qty	Qty	Size L x W x H (cm)	Gross Weight (Kg)	Qty	Size L x W x H (cm)	Gross Weight (Kg)
SMD Glass/Plastic Packages								
SOD-80C (Mini MELF)	T & R	2,500	10K	19 x 19 x 8	0.1	40K	23 x 23 x 23	2.3
	T & R	10,000	10K	33 x 33 x 1.2	0.6	320K	48 x 48 x 51	18.9

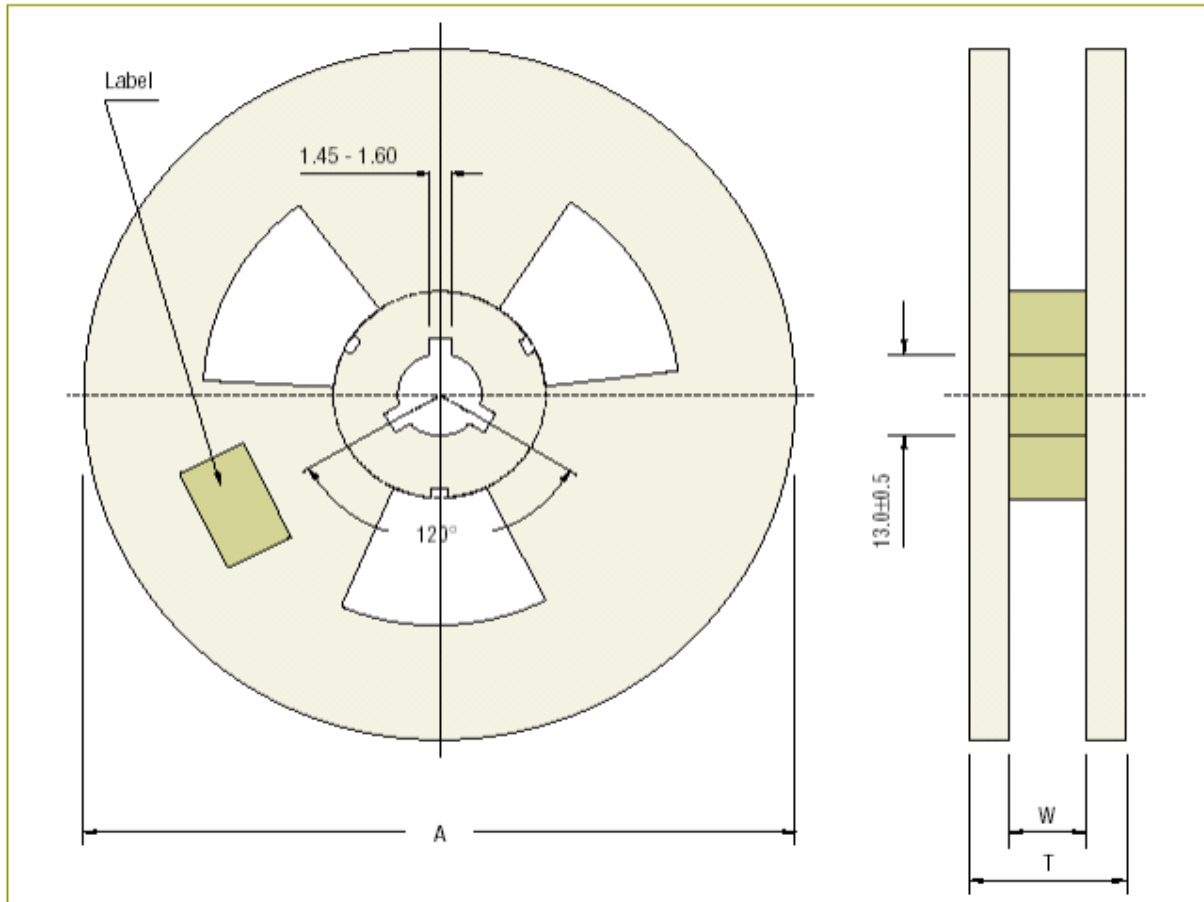
Packaging Tape Specifications for SMD Packages



SMD Tape Specifications (8-12 mm)

Device	D1	D2	D3	T1	T2	T3	T4	S1	S2	S3
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
SOD-80C (Mini MELF)	2.0±0.2	4.0±0.2	4.0±0.1	8.0±0.3	1.75±0.1	2.50	0.30	4.0±0.1	2.0±0.1	1.5±0.1

Reel Specifications for SMD Packages



Reel Specifications

Package	Tape Width	Reel Dia. A - Max	Devices per Reel and MOQ	Inside Thickness W	Reel Thickness T - Max
SOD-80C (Mini MELF)	8	180	2,500	8.4±2	14.4
	8	330	10,000	8.4±2	14.4



Continental Device India Pvt. Limited

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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/s upport 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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