General Description

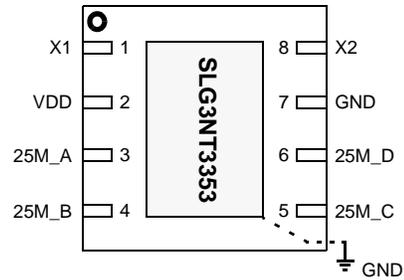The SLG3NT3353 uses a 25 MHz Reference Crystal to provide four 25 MHz clock outputs.

Features

- Improved performance over temperature
- Supports Industrial temperature range
- Smaller package and layout foot print
- 8-pin TDFN: 2 x 2 x 0.75 mm, 0.5 mm pitch
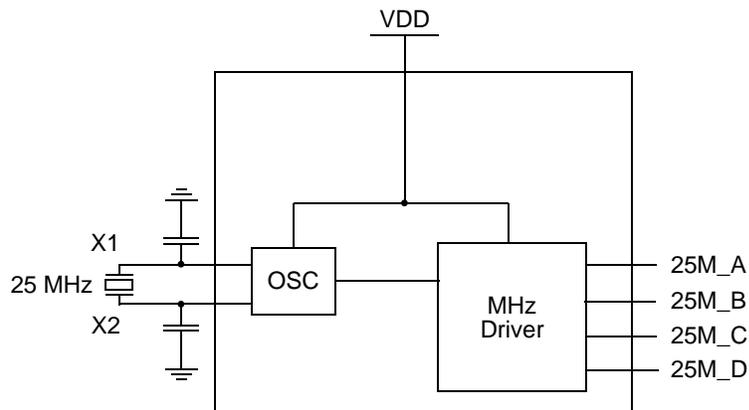- Pb-Free / Halogen-Free / RoHS compliant

Output Summary

- 4x 25 MHz clock outputs (2.0 mA)

Pin Configuration

8-pin TDFN
(Top View)

Block Diagram

Pin Description

Pin #	Pin Name	Type[1]	Pin Description[2]
1	X1	I	**Crystal Interface:** 25 MHz, OSC input
2	VDD	PWR	**Power Supply:** 3.3 V for normal operation
3	25M_A	O, SE	**Clock Output:** 25 MHz output
4	25M_B	O, SE	**Clock Output:** 25 MHz output
5	25M_C	O, SE	**Clock Output:** 25 MHz output
6	25M_D	O, SE	**Clock Output:** 25 MHz output
7	GND	GND	**Ground**
8	X2	O, SE	**Crystal Interface:** 25 MHz, OSC output
Exposed Bottom Pad	GND	GND	**Ground**

Notes:
1. Type Definitions
  • PWR: power
  • GND: ground
  • I: input
  • O: output
  • SE: single ended signal
2. It is recommended that all Power Supply pins have a decoupling capacitor attached (0.1 μF minimum).			

Absolute Maximum Ratings

Parameter	Description	Min.	Max.	Unit
V_{DD}	Voltage on VDD pin relative to GND	-0.3	4.2	V
T_S	Storage Temperature	-65	150	°C
ESD_{HBM}	ESD Protection (Human Body Model)	2000	--	V
MSL	Moisture Sensitivity Level	1		

Note: Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

Recommended Operating Temperature

Parameter	Description	Min.	Max.	Unit
T_O	Operating Temperature	-40	85	°C

Recommended 25 MHz Reference Crystal Specifications

Description	Conditions	Min	Typ	Max	Unit
Initial Frequency		--	25	--	MHz
Frequency Tolerance	@ 25 °C	--	--	±10	ppm
Frequency Stability over Operating Temperature Range	@ -40 °C to 85 °C	--	--	±10	ppm
Frequency Aging	per year	--	--	±1[1]	ppm
Drive Level		--	--	100	μW
Crystal Load Capacitance	Parallel Resonance		8		pF
Fundamental Mode AT Cut Crystal		--	--	--	

Notes:
1. Vendor Specific: Frequency aging may be different per crystal used. Check with crystal vendor for specific value. SLG3NT3353 outputs will track the crystal frequency aging as stated in other sections of this datasheet.

25 MHz Clock Output Characteristics

T_A = 25 °C, V_{DD} = 3.3 V (unless otherwise stated)

Symbol	Description	Conditions	Min	Typ	Max	Unit
F_{INI}	Initial Frequency		--	25	--	MHz
F_{ERRI}	Frequency Error at Room Temperature	@ 25 °C	Reference Crystal[1]			ppm
F_{ERRT}	Frequency Error over Operating Temperature Range	@ -40 °C to 85 °C	Reference Crystal[1]			ppm
F_{AGE}	Frequency Aging	per year	Reference Crystal[1]			ppm
DC	Duty Cycle	0.5 x $V_{DDIO\_24M\_A}$	45	50	55	%
V_{OH}	Output Voltage HIGH	I_{OH} = 1 mA	2.6	--	--	V
V_{OL}	Output Voltage LOW	I_{OL} = -1 mA	--	--	0.7	V

Notes:
1. This parameter tracks Reference Crystal characteristics.

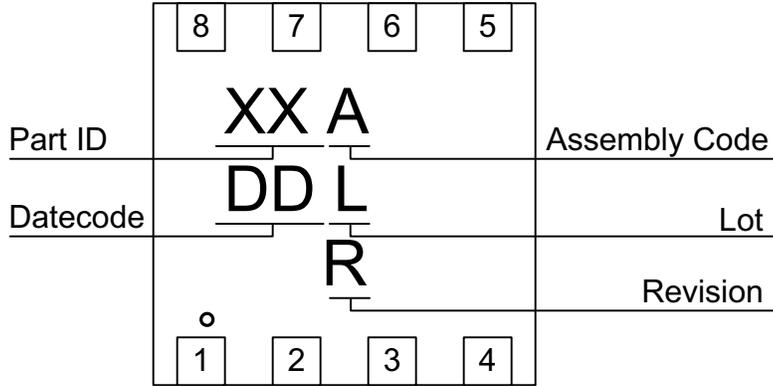## Power Supply Electrical Specifications (VDD)

T_A = 25 °C

Symbol	Description	Conditions	Min	Typ	Max	Unit
V_{DD}	Operating Voltage for VDD		3.0	3.3	3.6	V
I_{VDD}[1]	V_{DD} current consumption in normal operation	V_{DD} = 3.3 V, No Load	--	2.0	--	mA

Notes:
1. Average current depends on application and output load.
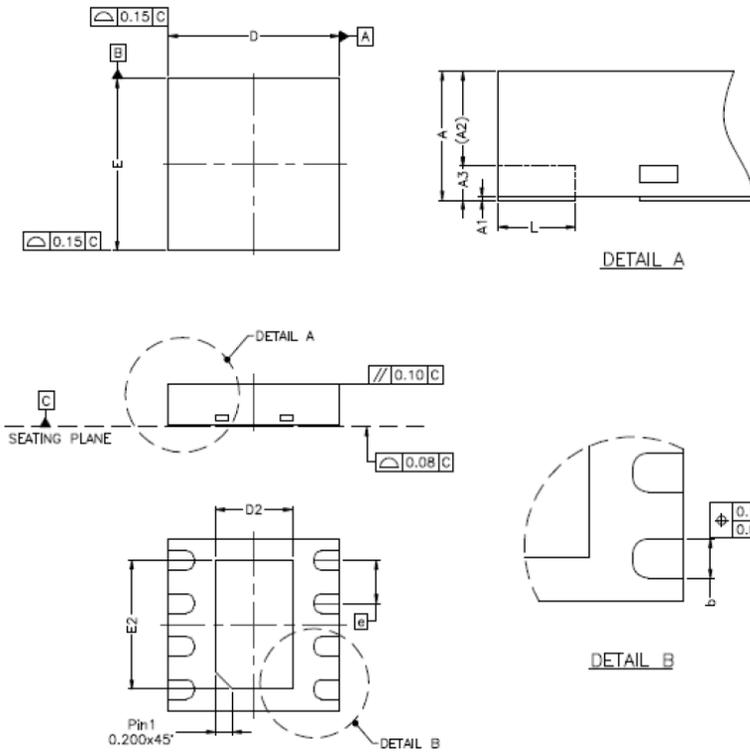
Package Top Marking System Definition

XX – Part ID Field: identifies the specific device configuration
A – Assembly Code Field: Assembly Location of the device.
DD – Date Code Field: Coded date of manufacture
L – Lot Code: Designates Lot #
R – Revision Code: Device Revision

Package Drawing and Dimensions

8 Lead TDFN Package
JEDEC MO-229, Variation WCCD

SYMBOL	DIMENSION (MM)			DIMENSION (MIL)		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.70	0.75	0.80	28	30	31
A1	0.00	0.02	0.05	0	1	2
A2	0	0.55	0.80	0	22	31
A3	–	0.20	–	–	8	–
b	0.18	0.25	0.30	7	10	12
D	1.90	2.00	2.10	74	79	83
D1		–			–	
D2	0.75	0.90	1.05	30	35	41
E	1.90	2.00	2.10	75	79	83
E1		–			–	
E2	1.50	1.65	1.70	53	59	65
e		0.50 BSC			20 BSC	
L	0.25	0.30	0.35	10	12	14

DETAIL A

DETAIL B

SEATING PLANE

NOTE :

1. REFER TO JEDEC STD: MO–229.
2. DIMENSION "b" APPLIES TO METALLIZED TERMINAL AND IS MEASURED BETWEEN 0.15MM AND 0.30MM FROM THE TERMINAL TIP. IF THE TERMINAL HAS OPTIONAL RADIUS ON THE OTHER END OF THE TERMINAL, THE DIMENSION B SHOULD NOT BE MEASURED IN THAT RADIUS AREA.

Tape and Reel Specifications

Package Type	# of Pins	Nominal Package Size [mm]	Max Units		Reel & Hub Size [mm]	Leader (min)		Trailer (min)		Tape Width [mm]	Part Pitch [mm]
			per Reel	per Box		Pockets	Length [mm]	Pockets	Length [mm]		
TDFN 8L Green	8	2 x 2 x 0.75	3,000	3,000	178 / 60	42	400	42	400	8	4

Carrier Tape Drawing and Dimensions

Package Type	Pocket BTM Length	Pocket BTM Width	Pocket Depth	Index Hole Pitch	Pocket Pitch	Index Hole Diameter	Index Hole to Tape Edge	Index Hole to Pocket Center	Tape Width
	A0	B0	K0	P0	P1	D0	E	F	W
TDFN 8L Green	2.3	2.3	1.05	4	4	1.55	1.75	3.5	8
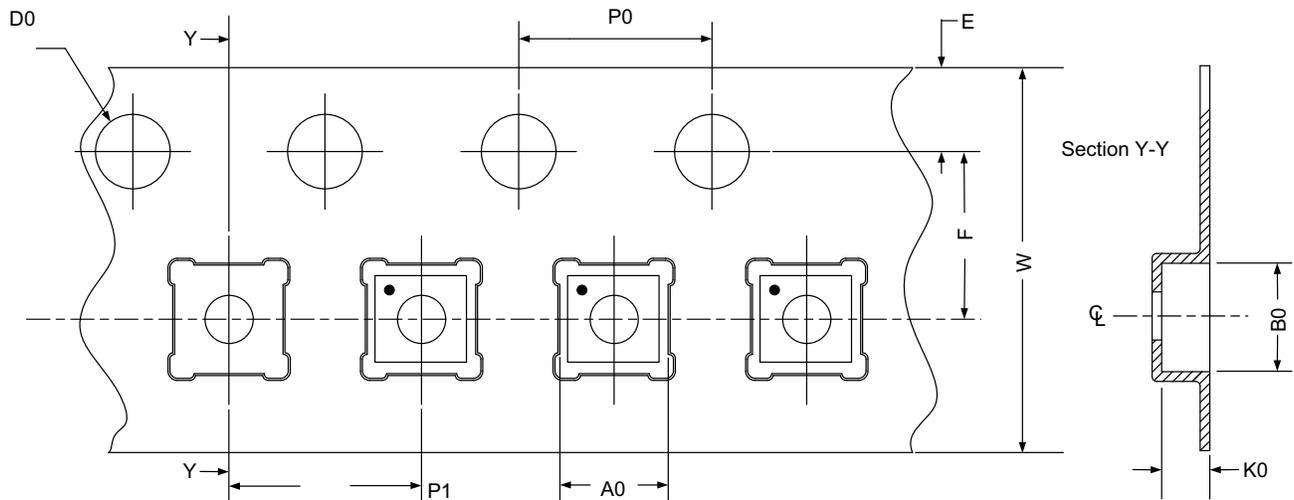
Refer to EIA-481 specification

Recommended Reflow Soldering Profile

Please see IPC/JEDEC J-STD-020: latest revision for reflow profile based on package volume of 3.00 mm^3 (nominal). More information can be found at www.jedec.org.

Silego Website & Support

Silego Technology Website

Silego Technology provides online support via our website at http://www.silego.com/.This website is used as a means to make files and information easily available to customers.

For more information regarding Silego Green products, please visit:

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http://greenpak2.silego.com/	http://greenfet2.silego.com/	http://greenclk2.silego.com/
http://greenpak3.silego.com/	http://greenfet3.silego.com/	http://greenclk3.silego.com/

Products are also available for purchase directly from Silego at the Silego Online Store at http://store.silego.com/.

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