

Datasheet

Features

- 2.7V to 5.5V operation
- Dual touch detection
- Touch pressure measurement
- Automatic power down and touch detection
- I2C compatible serial interface
- Available in QFN-16 packages
- Contact HBM 8KV ESD on touch interface

Applications

- Touch screen monitors
- MP4 players
- Point-of-sale terminals
- Personal navigation devices
- Mobile internet devices

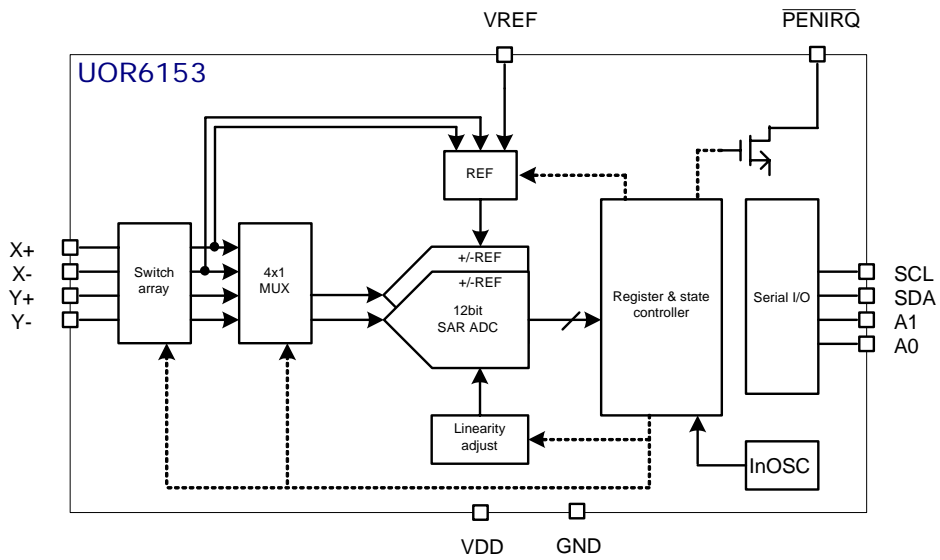
General Description

UOR6153 is a low power, low cost touch screen controller which is applicable for 4-wire R-type touch screen. It is equipped with a high performance 12bit analog-to-digital converter. It can be supplied by single 2.7V to 5.5V power supply.

Especially, it provides the ability of dual touch detection. Also, UOR6153 is equipped with a linearity adjustment mechanism to further increase the linearity of dual touch detection.

UOR6153 is available in QFN-16 3x3mm package. They are specified in -40°C to 85 °C temperature range.

Functional Block Diagram



Electrical Characteristics

VDD= 2.7V; T=25 °C; I2C clock=400KHz; unless otherwise noted

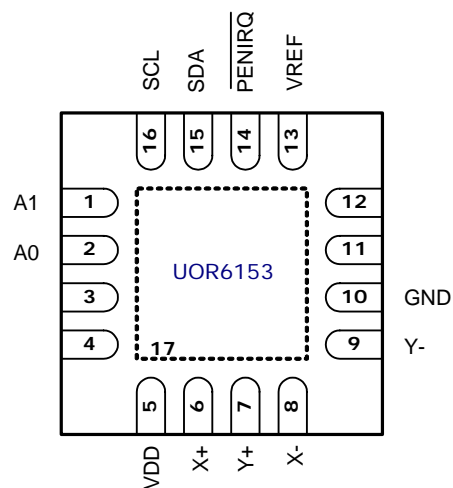
Parameter	Symbol	Condition	MIN	TYP	MAX	Unit
DC Accuracy						
Resolution	B		11*1	12		Bits
Integral Nonlinearity	INL				+/-2	LSB
Differential Nonlinearity	DNL				T.B.D.	LSB
Offset Error		VDD=3.0V			+/-6	LSB
Gain Error					+/-4	LSB
Power Supply Rejection	PSR			70		dB
Switch Array						
On-resistance	Ron	X+ Y+		5		Ω
		X- Y-		5		Ω
Analog Input						
Input Range	Vin		0		Vref	V
DC Leakage	Iin			+/-0.1		uA
Input Capacitance	Cin			25		pF
Reference Input						
Input Range	Vref		1		VDD	V
DC Leakage	Iref			+/-0.1		uA
Input Impedance	Rref			5		GΩ
Conversion Rate						
SCL clock	fSCL	Standard mode		100		KHz
		Fast mode		400		KHz
Throughput Rate	Fthp			2		KSPS
Digital I/O						
Input High Voltage	Vih		2.5			V
Input Low Voltage	Vil				0.4	V
Input Capacitance	Cid				10	pF
Output High Voltage	Voh		VDD-0.2			V
Output Low Voltage	Vol				0.4	V
PENIRQ Low Voltage	Vpirq				0.4	V
Power Requirements						
Power Supply	VDD		2.7		5.5	V
Power supply ramp*2			1			V/ms
Supply Current	Icc	fCLK=400KHz			300	uA
		Power down mode			1	uA

*1: no missing code.

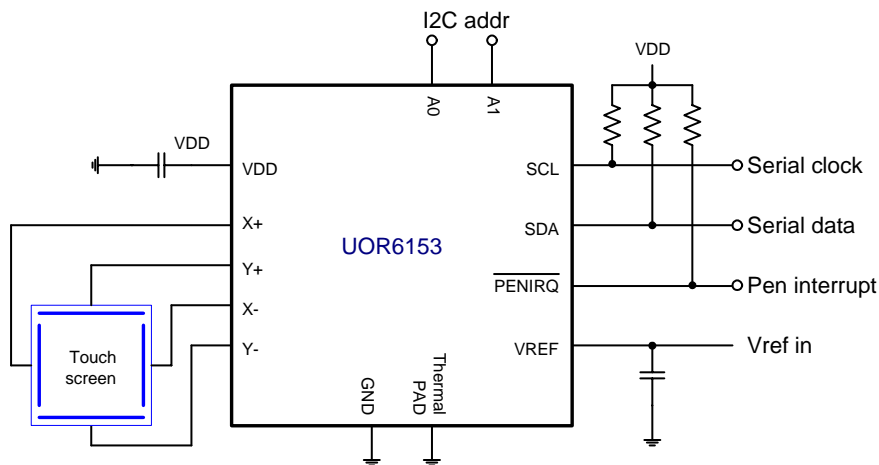
*2: When VDD switching, it should be ramp down to less than 0.2V to ensure the internal state machine can be reset to correct state while VDD ramp up again.

Pin Assignment and Package

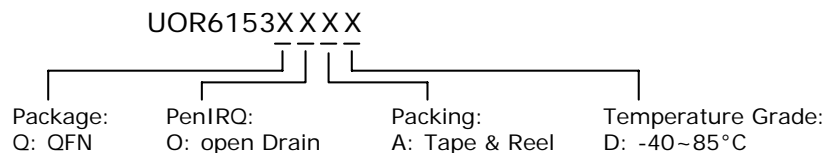
Pin no.	Symbol	Descriptions
1	A1	I2C bus address input A1
2	A0	I2C bus address input A0
3	N.C.	
4	N.C.	
5	VDD	Power supply
6	X+	X+ position input
7	Y+	Y+ position input
8	X-	X- position input
9	Y-	Y- position input
10	GND	Ground
11	N.C.	
12	N.C.	
13	VREF	Reference voltage input
14	/PENIRQ	Pen interrupt, open drain output
15	SDA	Serial data
16	SCL	Serial clock
17	GND	Thermal PAD



Typical Application Circuits

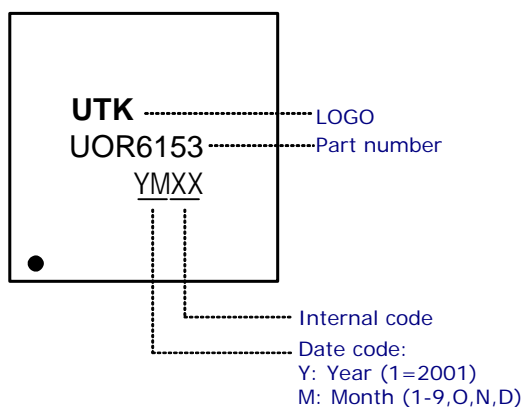


Ordering Information



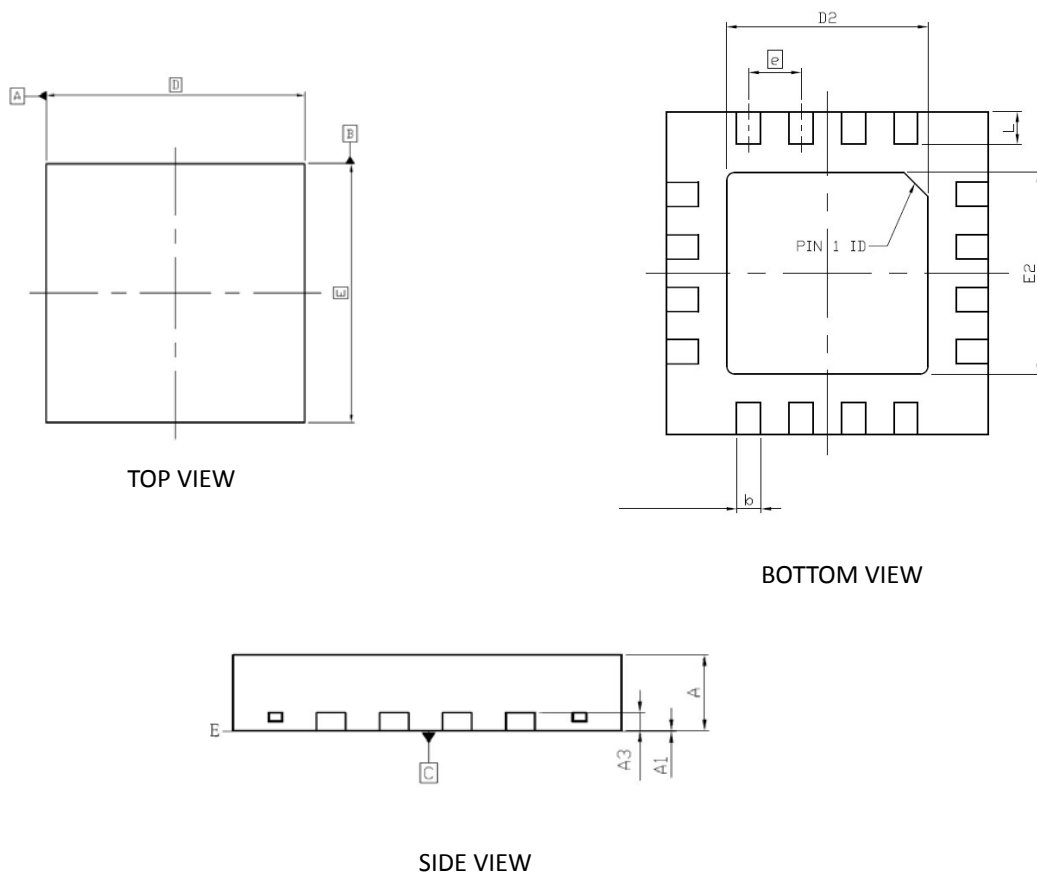
Marking Information

QFN-16



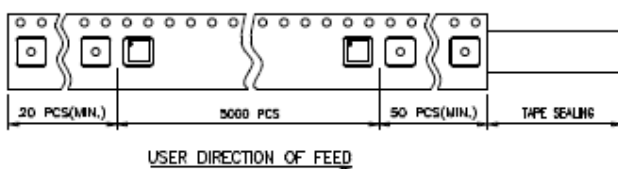
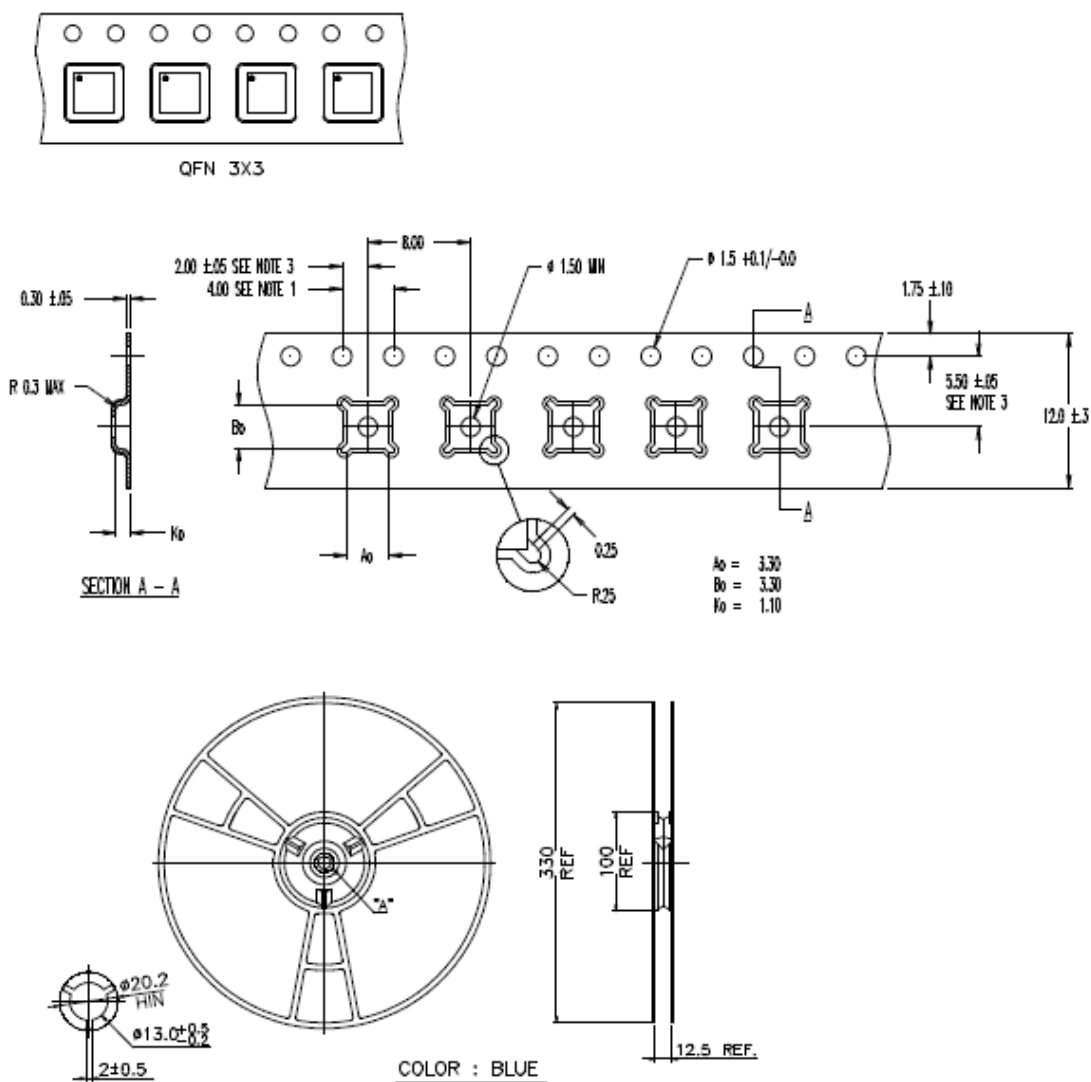
R-type Dual-touch Controller UOR6153

Package information



SYMBOL	DIMENSION (mm)			DIMENSION (mil)		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.70	0.75	0.80	27.6	29.5	31.5
A1	0.00	0.02	0.05	0.0	0.8	2.0
A3	0.20 REF			7.9 REF		
b	0.18	0.25	0.30	7.1	9.8	11.8
D	3.00 BSC			118.1 BSC		
D2	1.60	1.70	1.75	63.0	66.9	68.9
E	3.00 BSC			118.1 BSC		
E2	1.60	1.70	1.75	63.0	66.9	68.9
e	0.50 BSC			19.7 BSC		
L	0.30	0.35	0.40	11.8	13.8	15.7

Tap and reel specifications



- Reel packing quantity: 3,000 pcs/reel
- 1 reel/box

Notes

- V1.7 add tape and reel specifications
- V1.6 separate datasheet and application note
- V1.5 add UMO2470 and UMO2123 in application circuits
- V1.4 add pin17, thermal pad
- V1.3 add VDD ramp spec and note
- V1.2 modify device symbol in suggested application circuit
- V1.1 update company information
- V1.0 release