NPIC6C4894

Power logic 12-bit shift register; open-drain outputs

Rev. 1 — 17 April 2014　　　　　　　　　　　　　　**Product data sheet**

1. General description

The NPIC6C4894 is a 12-stage serial shift register. It has a storage latch associated with each stage for strobing data from the serial input (D) to the parallel open-drain outputs (QP0 to QP11). Data is shifted on positive-going clock (CP) transitions. The data in each shift register stage is transferred to the storage register when the latch enable (LE) input is HIGH. Data in the storage register drives the gate of the output extended-drain NMOS transistor whenever the output enable input (OE) is HIGH. A LOW on OE causes the outputs to assume a high-impedance OFF-state. Operation of the OE input does not affect the state of the registers. Two serial outputs (QS1 and QS2) are available for cascading a number of NIC6C4894 devices. Serial data is available at QS1 on positive-going clock edges to allow high-speed operation in cascaded systems with a fast clock rise time. The same serial data is available at QS2 on the next negative going clock edge. It is used for cascading NPIC6C4894 devices when the clock has a slow rise time. The open-drain outputs are 33 V/100 mA continuous current extended-drain NMOS transistors designed for use in systems that require moderate load power such as LEDs. Integrated voltage clamps in the outputs, provide protection against inductive transients. This protection makes the device suitable for power driver applications such as relays, solenoids and other low-current or medium-voltage loads.

2. Features and benefits

- Specified from $-40\ ^{\circ}\text{C}$ to $+125\ ^{\circ}\text{C}$
- Low R_{DSon}
- 12 Power EDNMOS transistor outputs of 100 mA continuous current
- 250 mA current limit capability
- Output clamping voltage 33 V
- 30 mJ avalanche energy capability
- Low power consumption
- Latch-up performance exceeds 100 mA per JESD 78 Class II level A
- ESD protection:
  - ◆ HBM JS-2011 Class 2 exceeds 2500 V
  - ◆ CDM JESD22-C101E exceeds 1000 V

nexperia

3. Applications

- LED sign
- Graphic status panel
- Fault status indicator

4. Ordering information

Table 1. Ordering information

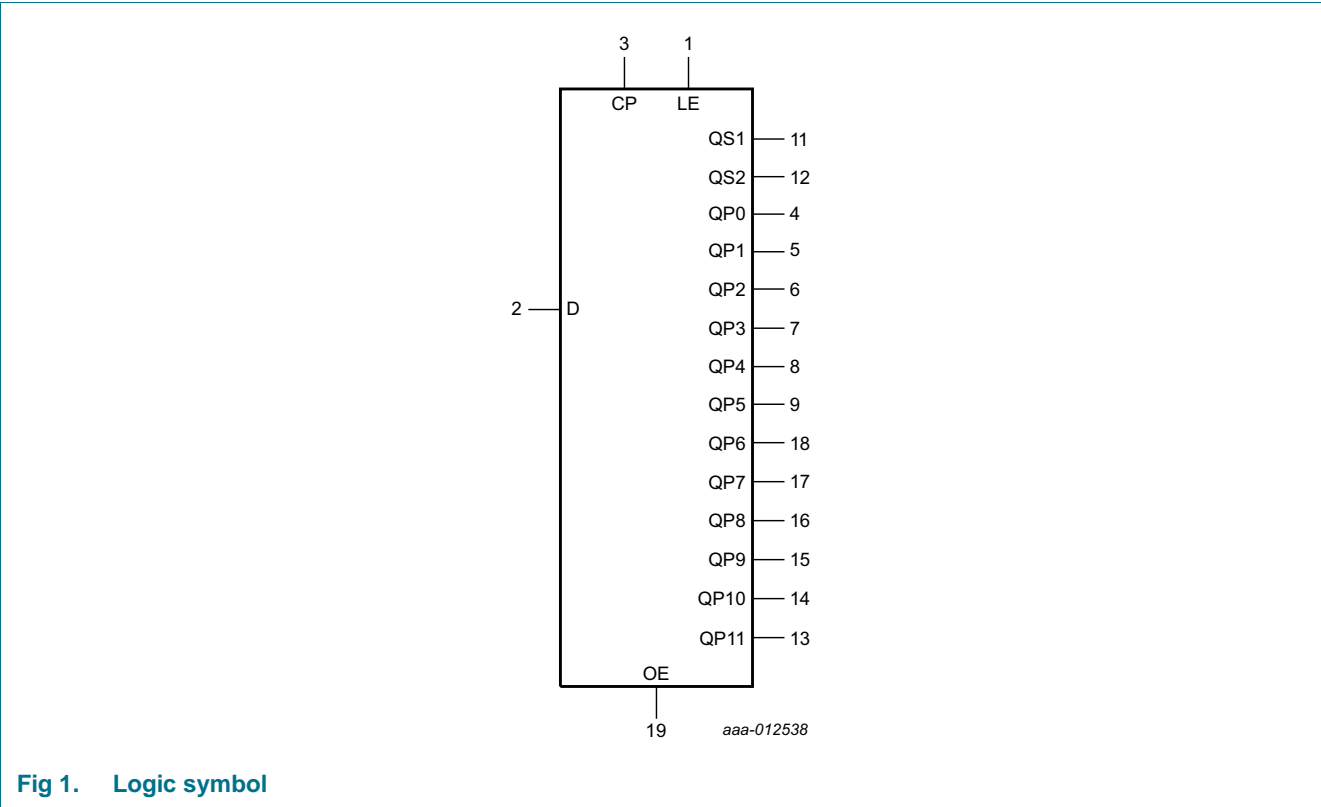| Type number	Package			
	Temperature range	Name	Description	Version
NPIC6C4894D	−40 °C to +125 °C	SO20	plastic small outline package; 20 leads; body width 7.5 mm	SOT163-1
NPIC6C4894PW	−40 °C to +125 °C	TSSOP20	plastic thin shrink small outline package; 20 leads; body width 4.4 mm	SOT360-1

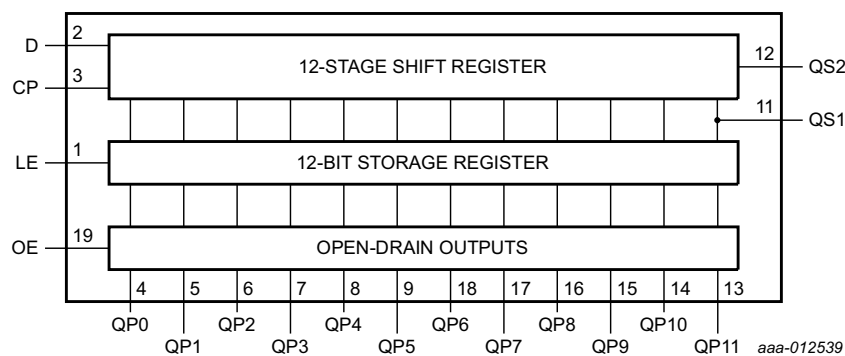## 5. Functional diagram
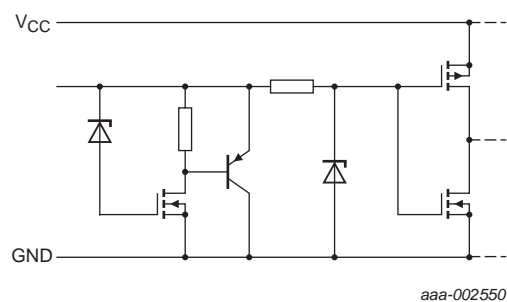

Fig 1. Logic symbol

Fig 2.   Functional diagram

Fig 3.   Schematic of all inputs
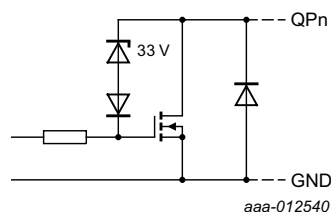

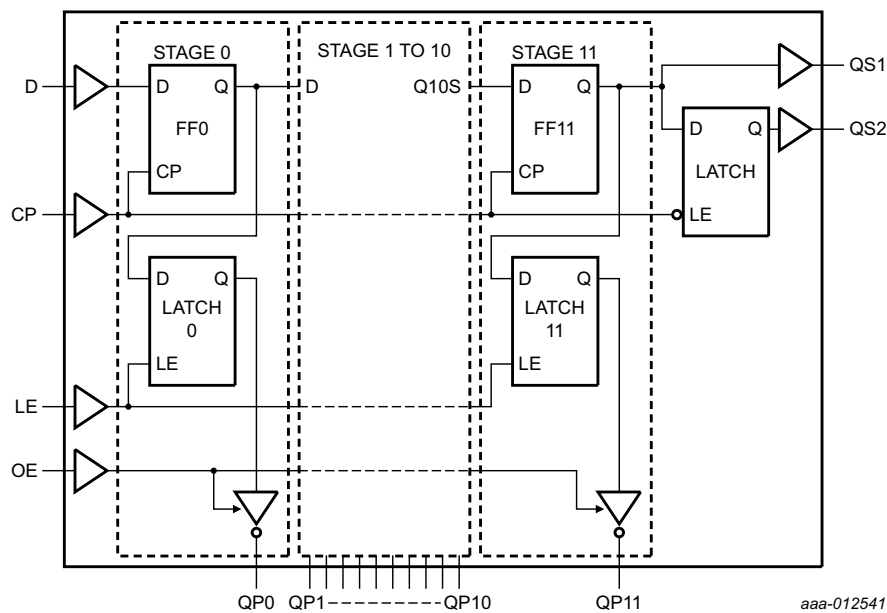**Fig 4.   Schematic of open-drain outputs (QPn)**

Fig 5.   Logic diagram

6. Pinning information

6.1 Pinning
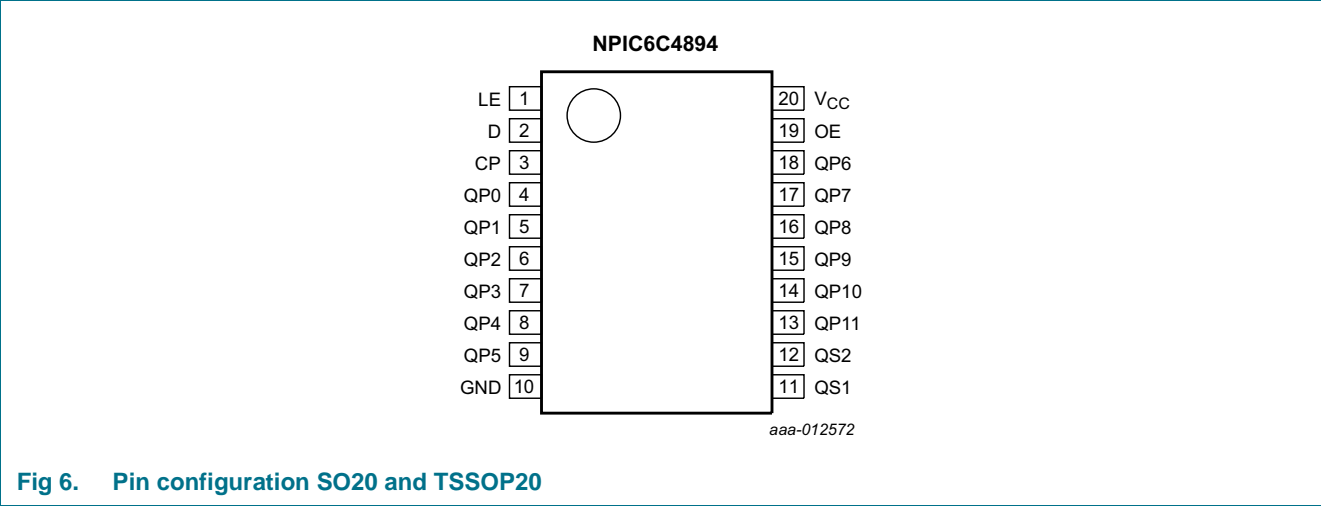
Fig 6.   Pin configuration SO20 and TSSOP20

6.2 Pin description

Table 2.   Pin description

Symbol	Pin	Description
LE	1	latch enable input
D	2	serial data input
CP	3	clock input
QP0 to QP11	4, 5, 6, 7, 8, 9, 18, 17, 16, 15, 14, 13	parallel output
GND	10	ground (0 V)
QS1	11	serial output
QS2	12	serial output
OE	19	output enable input
V_{CC}	20	supply voltage

NPIC6C4894

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet

Rev. 1 — 17 April 2014

4 of 21

7. Functional description

Table 3.   Function table[1]

At the positive clock edge, the information in the 10th register stage is transferred to the 11th register stage and the QS output
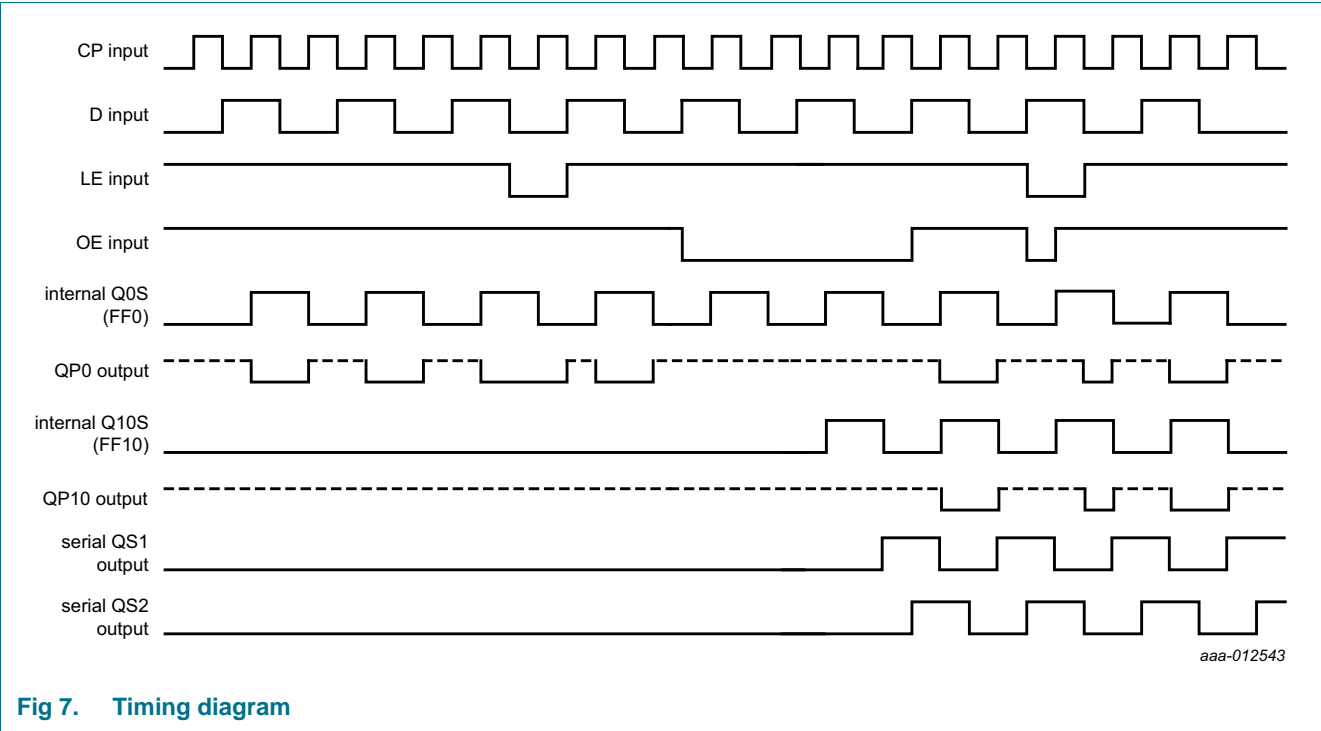
Control			Input	Parallel output		Serial output	
CP	OE	LE	D	QP0	QPn	QS1[2]	QS2[3]
↑	L	X	X	Z	Z	Q10S	no change
↓	L	X	X	Z	Z	no change	Q11S
↑	H	L	X	no change	no change	Q10S	no change
↑	H	H	L	Z	QPn−1	Q10S	no change
↑	H	H	H	L	QPn−1	Q10S	no change
↓	H	H	H	no change	no change	no change	Q11S

[1]   H = HIGH voltage level; L = LOW voltage level; X = don't care; ↑ = LOW-to-HIGH clock transition; ↓ = HIGH-to-LOW clock transition; Z = high-impedance OFF-state.

[2]   Q10S = the data in register stage 10 before the LOW to HIGH clock transition.

[3]   Q11S = the data in register stage 11 before the HIGH to LOW clock transition.

Fig 7.   Timing diagram

aaa-012543

NPIC6C4894

Product data sheet

Rev. 1 — 17 April 2014

5 of 21

8. Limiting values

Table 4. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134). Voltages are referenced to GND (ground = 0 V).

Symbol	Parameter	Conditions		Min	Max	Unit
V_{CC}	supply voltage			−0.5	+7.0	V
V_I	input voltage			−0.3	+7.0	V
V_{DS}	drain-source voltage	QPn	[1]	-	+33	V
V_O	output voltage	QSn		−0.5	+7.0	V
I_{IK}	input clamping current	$V_I < 0.5$ V or $V_I > V_{CC} + 0.5$ V		-	±50	mA
I_{OK}	output clamping current	QSn; $V_O < 0.5$ V or $V_O > V_{CC} + 0.5$ V		-	±100	mA
$I_{d(SD)}$	source-drain diode current	continuous		-	250	mA
		pulsed	[2]	-	500	mA
I_D	drain current	$T_{amb} = 25\ °C$				
		continuous; each output; all outputs on		-	100	mA
		pulsed; each output; all outputs on	[2]	-	250	mA
I_{DM}	peak drain current	single output; $T_{amb} = 25\ °C$	[2]	-	250	mA
E_{AS}	non-repetitive avalanche energy	single pulse; see Figure 8 and Figure 16	[3]	-	30	mJ
I_{AL}	avalanche current	see Figure 8 and Figure 16	[3]	-	200	mA
T_{stg}	storage temperature			−65	+150	°C
P_{tot}	total power dissipation	$T_{amb} = 25\ °C$	[4]			
		SO20		-	1500	mW
		TSSOP20		-	1250	mW
		$T_{amb} = 125\ °C$	[4]			
		SO20		-	300	mW
		TSSOP20		-	250	mW

[1] Each power EDNMOS source is internally connected to GND.

[2] Pulse duration ≤ 100 μs and duty cycle ≤ 2 %.

[3] $V_{DS} = 15$ V; starting junction temperature (T_j) = 25 °C; L = 1.5 H; avalanche current (I_{AL}) = 200 mA.

[4] For SO20 package: above 25 °C the value of P_{tot} derates linearly with 12 mW/°C.
For TSSOP20 package: above 25 °C the value of P_{tot} derates linearly with 10 mW/°C.

8.1 Test circuit and waveform

(1) The word generator has the following characteristics: t_r, $t_f \leq 10$ ns; $Z_O = 50\ \Omega$.

(2) The input pulse duration (t_W) is increased until peak current $I_{AL} = 200$ mA. Energy test level is defined as:
$E_{AS} = I_{AL} \times V_{(BR)DSS} \times t_{AL}/2 = 30$ mJ.

Fig 8.   Test circuit and waveform for measuring single-pulse avalanche energy
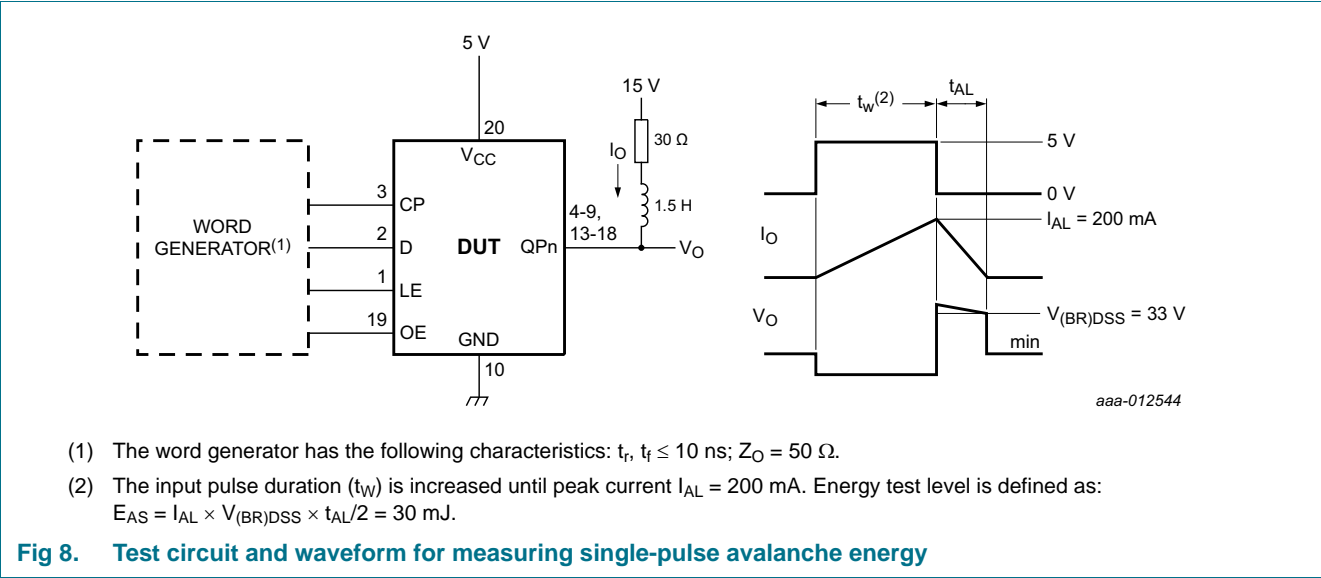
9.   Recommended operating conditions

Table 5.   Recommended operating conditions

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_{CC}	supply voltage			4.5	5.0	5.5	V
V_I	input voltage			0	-	5.5	V
I_D	drain current	pulsed drain output current; $V_{CC} = 5$ V; $T_{amb} = 25\ °C$; all outputs on	[1][2]	-	-	250	mA
T_{amb}	ambient temperature			−40	-	+125	°C

[1]   Pulse duration $\leq 100\ \mu s$ and duty cycle ≤ 2 %.

[2]   Technique should limit $T_j - T_{amb}$ to 10 °C maximum.

NPIC6C4894

All information provided in this document is subject to legal disclaimers.

Product data sheet **Rev. 1 — 17 April 2014** **7 of 21**

10. Static characteristics

Table 6.   **Static characteristics**

At recommended operating conditions unless otherwise specified; Voltages are referenced to GND (ground = 0 V).

Symbol	Parameter	Conditions	T_{amb} = 25 °C			T_{amb} = −40 °C to 125 °C			Unit
			Min	Typ	Max	Min	Typ	Max	
V_{IH}	HIGH-level input voltage		$0.85V_{CC}$	-	-	-	-	-	V
V_{IL}	LOW-level input voltage		-	-	$0.15V_{CC}$	-	-	-	V
V_{OH}	HIGH-level output voltage	QSn; V_I = V_{IH} or V_{IL}							
		I_O = −20 μA; V_{CC} = 4.5 V	4.4	4.49	-	-	-	-	V
		I_O = −4 mA; V_{CC} = 4.5 V	4.0	4.2	-	-	-	-	V
V_{OL}	LOW-level output voltage	QSn; V_I = V_{IH} or V_{IL}							
		I_O = 20 μA; V_{CC} = 4.5 V	-	0.005	0.1	-	-	-	V
		I_O = 4 mA; V_{CC} = 4.5 V	-	0.3	0.5	-	-	-	V
I_I	input leakage current	V_{CC} = 5.5 V; V_I = V_{CC} or GND	-	-	±1	-	-	-	μA
$V_{(BR)DSS}$	drain-source breakdown voltage	QPn; I_O = 1 mA	33	37	-	-	-	-	V
V_{SD}	source-drain voltage	QPn; I_O = 100 mA	−1.2	−0.85	-	-	-	-	V
I_{CC}	supply current	V_{CC} = 5.5 V; V_I = V_{CC} or GND							
		OE = LOW	-	0.006	200	-	-	-	μA
		OE = HIGH	-	0.01	500	-	-	-	μA
		OE = LOW; CP = 5 MHz; see Figure 15 and Figure 17	-	1	5	-	-	-	mA
I_O	output current	QPn; V_O = 0.5 V [1][2][3]	-	140	-	-	-	-	mA
I_{OZ}	OFF-state output current	QPn; V_{CC} = 5.5 V; V_{DS} = 30 V	-	0.002	0.2	-	0.15	0.3	μA
R_{DSon}	drain-source on-state resistance	see Figure 18 and Figure 19 [1][2]							
		V_{CC} = 4.5 V; I_O = 50 mA	-	2.7	9	-	4.3	12	Ω
		V_{CC} = 4.5 V; I_O = 100 mA	-	2.8	10	-	-	-	Ω

[1] Technique should limit T_j − T_{amb} to 10 °C maximum.

[2] These parameters are measured with voltage-sensing contacts separate from the current-carrying contacts.

[3] The output current is defined for a consistent comparison between devices from different sources. It is the current that produces a voltage drop of 0.5 V.

11. Dynamic characteristics

Table 7.   Dynamic characteristics

At recommended operating conditions unless otherwise specified; Voltages are referenced to GND (ground = 0 V); For test circuit, see Figure 15.

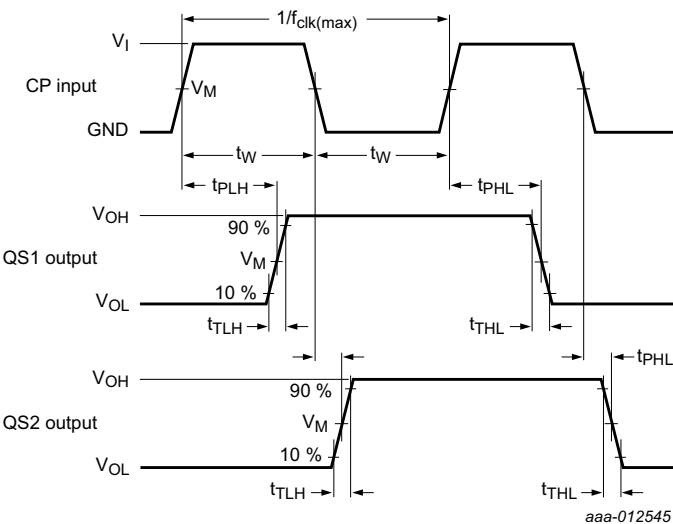| Symbol	Parameter	Conditions		T_{amb} = 25 °C			Unit
				Min	**Typ**	**Max**	
t_{pd}	propagation delay	CP to QSn; see Figure 9	[1]	-	5	-	ns
t_{TLH}	LOW to HIGH output transition time	QPn; see Figure 12		-	60	-	ns
		QSn; see Figure 9		-	6	-	ns
t_{THL}	HIGH to LOW output transition time	QPn; see Figure 12		-	18	-	ns
		QSn; see Figure 9		-	6	-	ns
t_{PLZ}	LOW to OFF-state propagation delay	CP, LE and OE to QPn; I_O = 75 mA; see Figure 10, Figure 11, Figure 12 and Figure 20		-	105	-	ns
t_{PZL}	OFF-state to LOW propagation delay	CP, LE and OE to QPn; I_O = 75 mA; see Figure 10, Figure 11, Figure 12 and Figure 20		-	10	-	ns
$f_{clk(max)}$	maximum clock frequency	CP; see Figure 9	[2]	10	-	-	MHz
t_{su}	set-up time	D to CP; see Figure 13		20	-	-	ns
t_h	hold time	D to CP; see Figure 13		20	-	-	ns
t_W	pulse width	CP, LE; see Figure 9 and Figure 11		40	-	-	ns
t_{rr}	reverse recovery time	I_O = −100 mA; dI/dt = 10 A/μs; see Figure 14	[3][4]	-	120	-	ns
t_a	reverse recovery current rise time	I_O = −100 mA; dI/dt = 10 A/μs; see Figure 14	[3][4]	-	100	-	ns

[1] t_{pd} is the same as t_{PLH} and t_{PHL}.

[2]   This is the maximum serial clock frequency assuming cascaded operation where serial data is passed from one stage to a second stage. The clock period allows for CP → QSn propagation delay and setup time plus some timing margin.

[3]   Technique should limit $T_j − T_{amb}$ to 10 °C maximum.

[4]   These parameters are measured with voltage-sensing contacts separate from the current-carrying contacts.

NPIC6C4894

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet

Rev. 1 — 17 April 2014
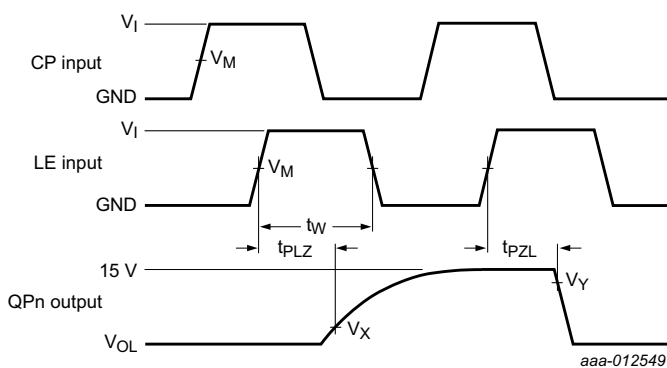
9 of 21

11.1 Waveforms and test circuits

Measurement points are given in Table 8.

V_{OL} and V_{OH} are typical output voltage levels that occur with the output load.

Fig 9. **Propagation delay clock (CP) to output (QS1, QS2), clock pulse width, maximum clock frequency and output transition time**
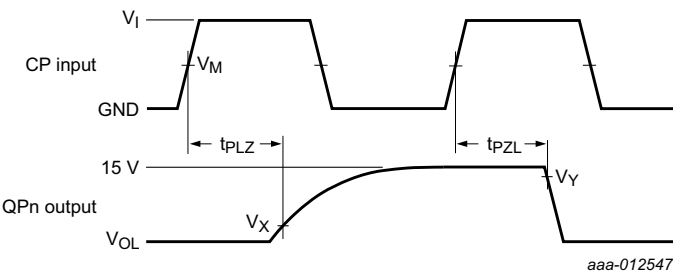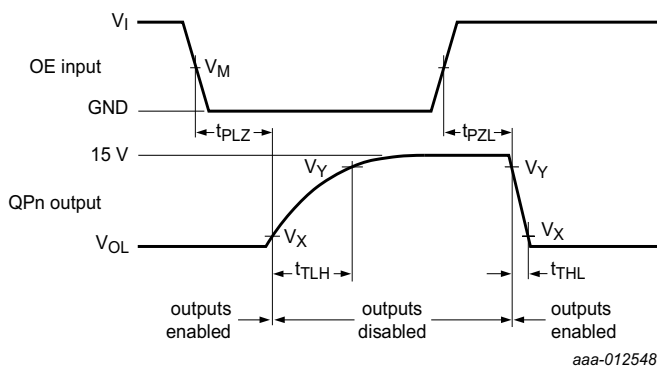

Measurement points are given in Table 8.

V_{OL} and V_{OH} are typical output voltage levels that occur with the output load.

Fig 10. **Propagation delay clock (CP) to output (QPn)**

NPIC6C4894

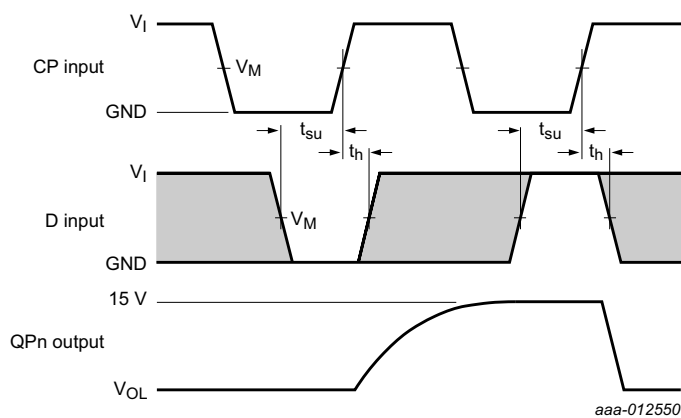**Product data sheet** **Rev. 1 — 17 April 2014** 10 of 21

Measurement points are given in Table 8.

V_{OL} is the typical output voltage level that occurs with the output load.

Fig 11.   Latch enable (LE) to output (QPn) propagation delays and the latch enable pulse width

Measurement points are given in Table 8.

V_{OL} is the typical output voltage level that occurs with the output load.

**Fig 12.   Output enable (OE) to output (QPn) and output transition time**

aaa-012550

Measurement points are given in Table 8.

The shaded areas indicate when the input is permitted to change for predictable output performance.

V_{OL} is the typical output voltage level that occurs with the output load.
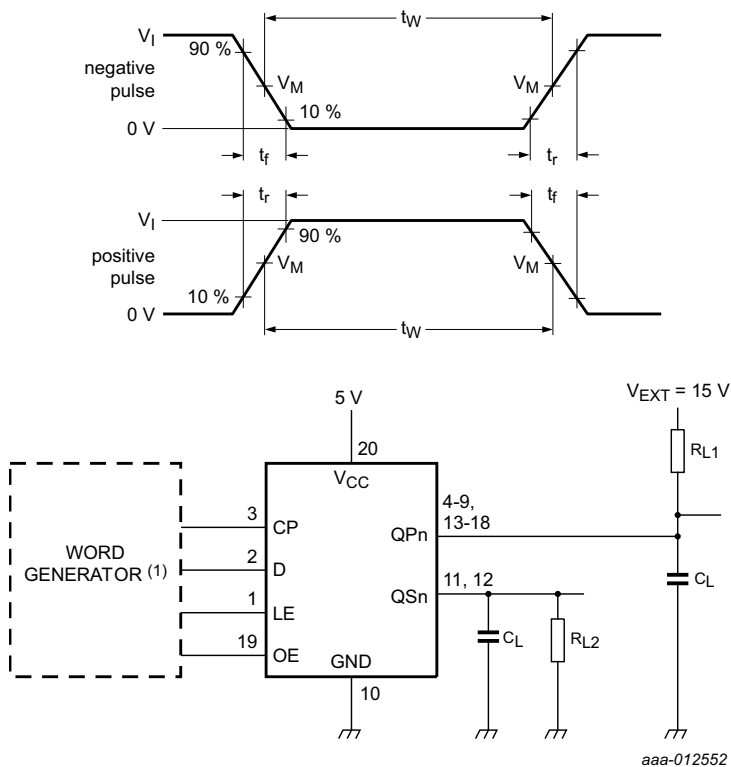
Fig 13. Set-up and hold times

Table 8.   Measurement points

Supply voltage	Input	Output		
V_{CC}	V_M	V_M	V_X	V_Y
5 V	$0.5V_{CC}$	$0.5V_{DS}$	$0.1V_{DS}$	$0.9V_{DS}$

aaa-012551
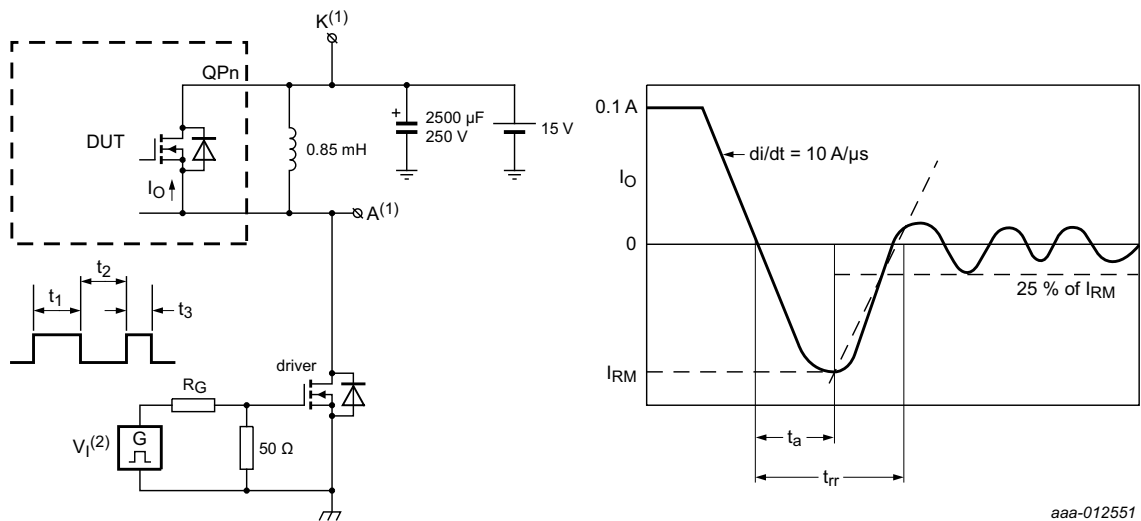
(1) The open-drain QPn terminal under test is connected to testpoint K. All other terminals are connected together and connected to testpoint A.

(2) The V_I amplitude and R_G are adjusted for dI/dt = 10 A/µs. A V_I double-pulse train is used to set I_O = 0.1 A, where t_1 = 10 µs, t_2 = 7 µs and t_3 = 3 µs.

Fig 14. Test circuit and waveform for measuring reverse recovery current

NPIC6C4894

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

**Product data sheet**   **Rev. 1 — 17 April 2014**   **12 of 21**

(1) The word generator has the following characteristics: t_r, $t_f \leq 10$ ns; $t_W = 300$ ns; pulsed repetition rate (PRR) = 5 kHz; $Z_O = 50 \ \Omega$.

(2) C_L includes probe and jig capacitance.

Test data is given in Table 9. Definitions for test circuit:

V_{EXT} = External voltage for measuring switching times.

R_L = Load resistance.

C_L = Load capacitance including jig and probe capacitance.

Fig 15. Test circuit for measuring switching times

Table 9.   Test data

Supply voltage	Input			Load		
	V_I	t_r, t_f	V_M	C_L	R_{L1}	R_{L2}[1]
5 V	5 V	≤ 10 ns	50%	30 pF	200 Ω	2 kΩ

[1] Do not connect R_{L2} when measuring the supply current (I_{CC}).

aaa-002562
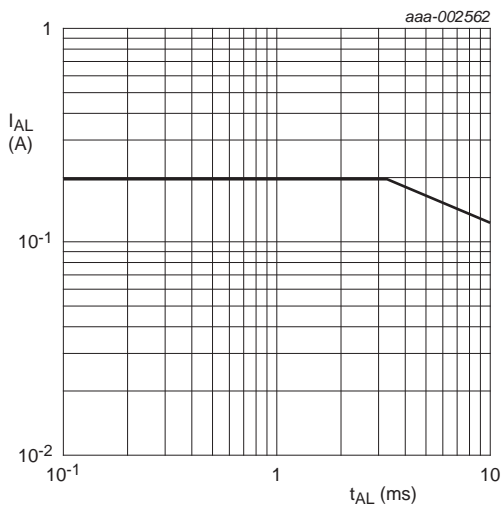
T_{amb} = 25 °C; V_{CC} = 5 V.

Fig 16. Avalanche current (peak) versus time duration of avalanche

aaa-012554
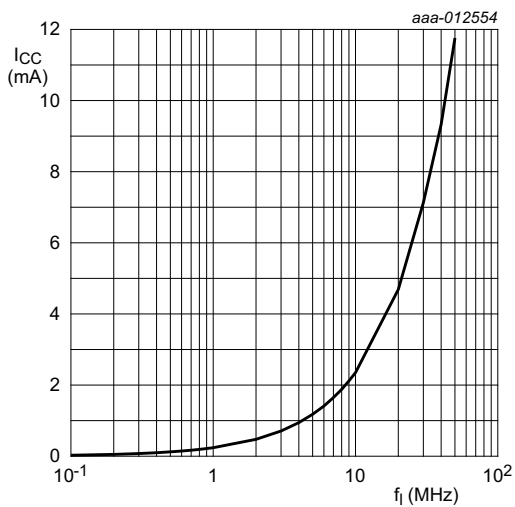
T_{amb} = −40 °C to 125 °C; V_{CC} = 5 V.

Fig 17. Supply current versus frequency

aaa-012553
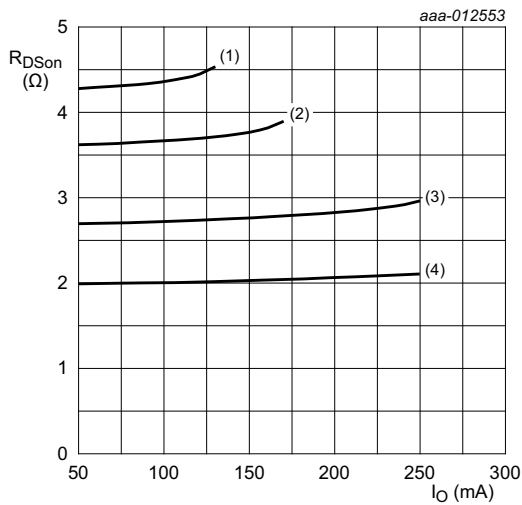
V_{CC} = 4.5 V; V_I = V_{CC} or GND.

(1) T_{amb} = 125 °C
(2) T_{amb} = 85 °C
(3) T_{amb} = 25 °C
(4) T_{amb} = −40 °C

Fig 18. Drain-source on-state resistance versus drain current

aaa-002565
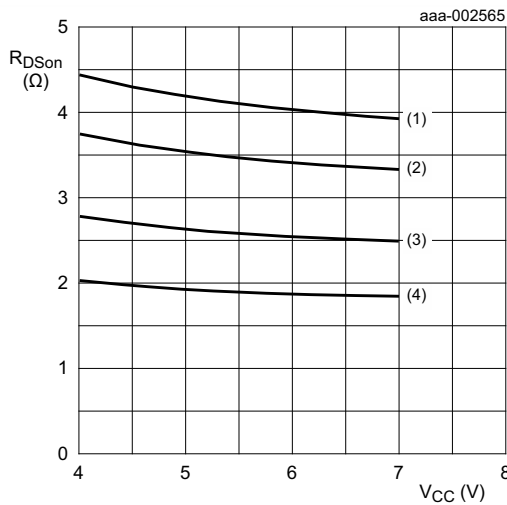
V_I = V_{CC} or GND; I_O = 50 mA.

(1) T_{amb} = 125 °C
(2) T_{amb} = 85 °C
(3) T_{amb} = 25 °C
(4) T_{amb} = −40 °C

Fig 19. Static drain-source on-state resistance versus supply voltage
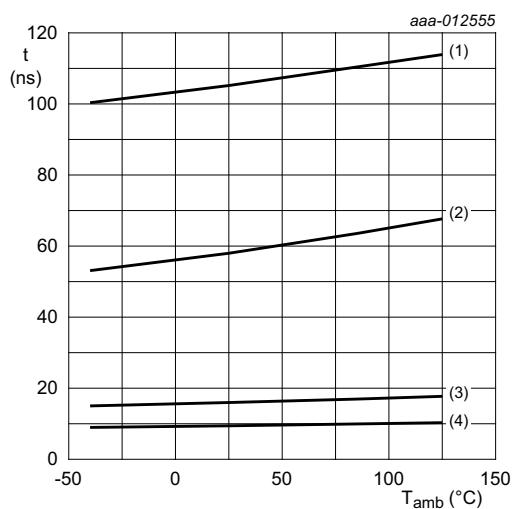
V_{CC} = 5 V; I_O = 75 mA, this technique should limit $T_j - T_{amb}$ to 10 °C maximum.

(1) t_{PLZ}.

(2) t_{TLH}.

(3) t_{THL}.

(4) t_{PZL}.

Fig 20. Switching time versus temperature

12. Package outline

SO20: plastic small outline package; 20 leads; body width 7.5 mm   **SOT163-1**

DIMENSIONS (inch dimensions are derived from the original mm dimensions)

UNIT	A max.	A₁	A₂	A₃	bₚ	c	D[1]	E[1]	e	Hₑ	L	Lₚ	Q	v	w	y	Z[1]	θ
mm	2.65	0.3 0.1	2.45 2.25	0.25	0.49 0.36	0.32 0.23	13.0 12.6	7.6 7.4	1.27	10.65 10.00	1.4	1.1 0.4	1.1 1.0	0.25	0.25	0.1	0.9 0.4	8° 0°
inches	0.1	0.012 0.004	0.096 0.089	0.01	0.019 0.014	0.013 0.009	0.51 0.49	0.30 0.29	0.05	0.419 0.394	0.055	0.043 0.016	0.043 0.039	0.01	0.01	0.004	0.035 0.016	

Note

1. Plastic or metal protrusions of 0.15 mm (0.006 inch) maximum per side are not included.

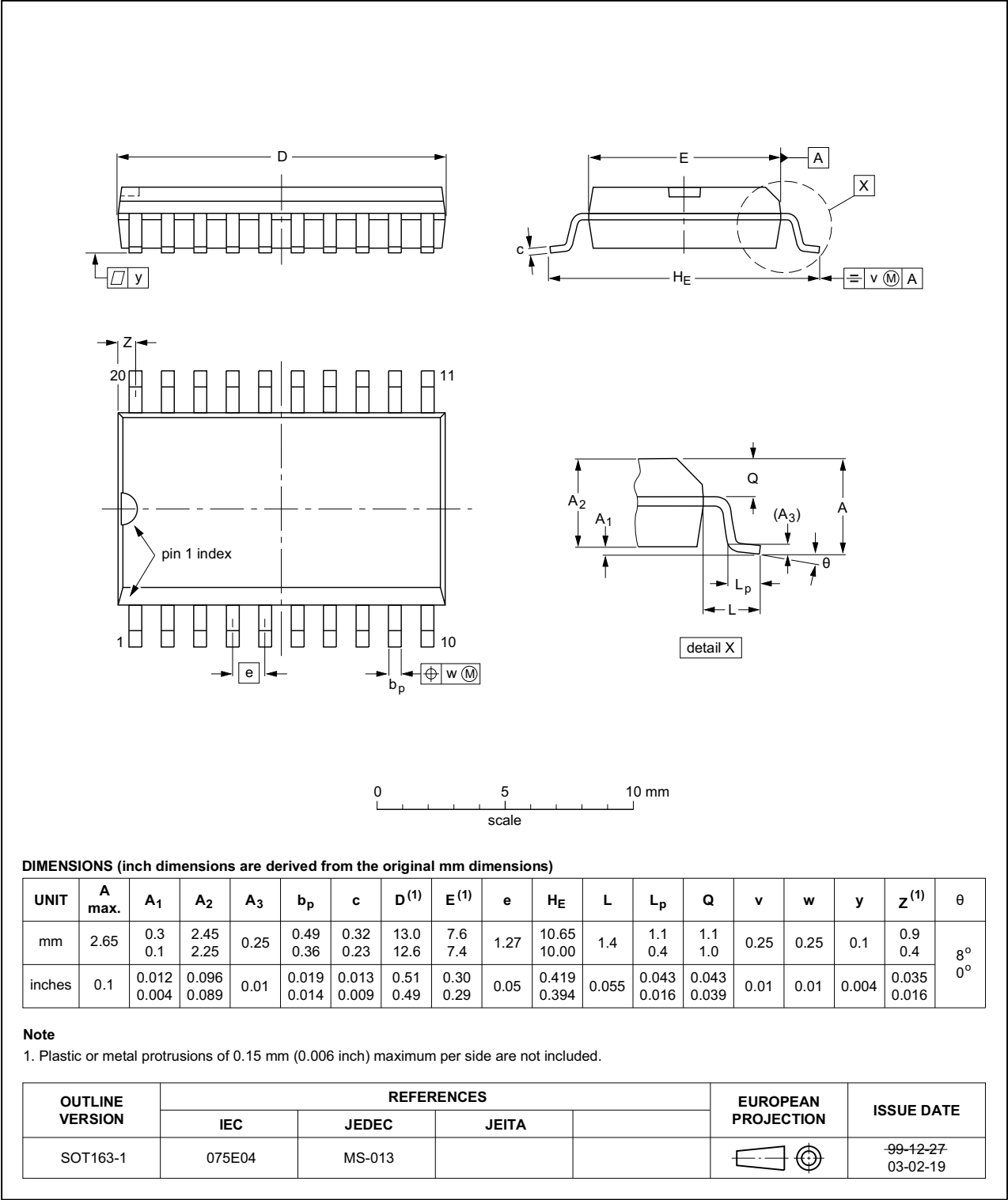| OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT163-1	075E04	MS-013				99-12-27 03-02-19

Fig 21.   Package outline SOT163-1 (SO20)

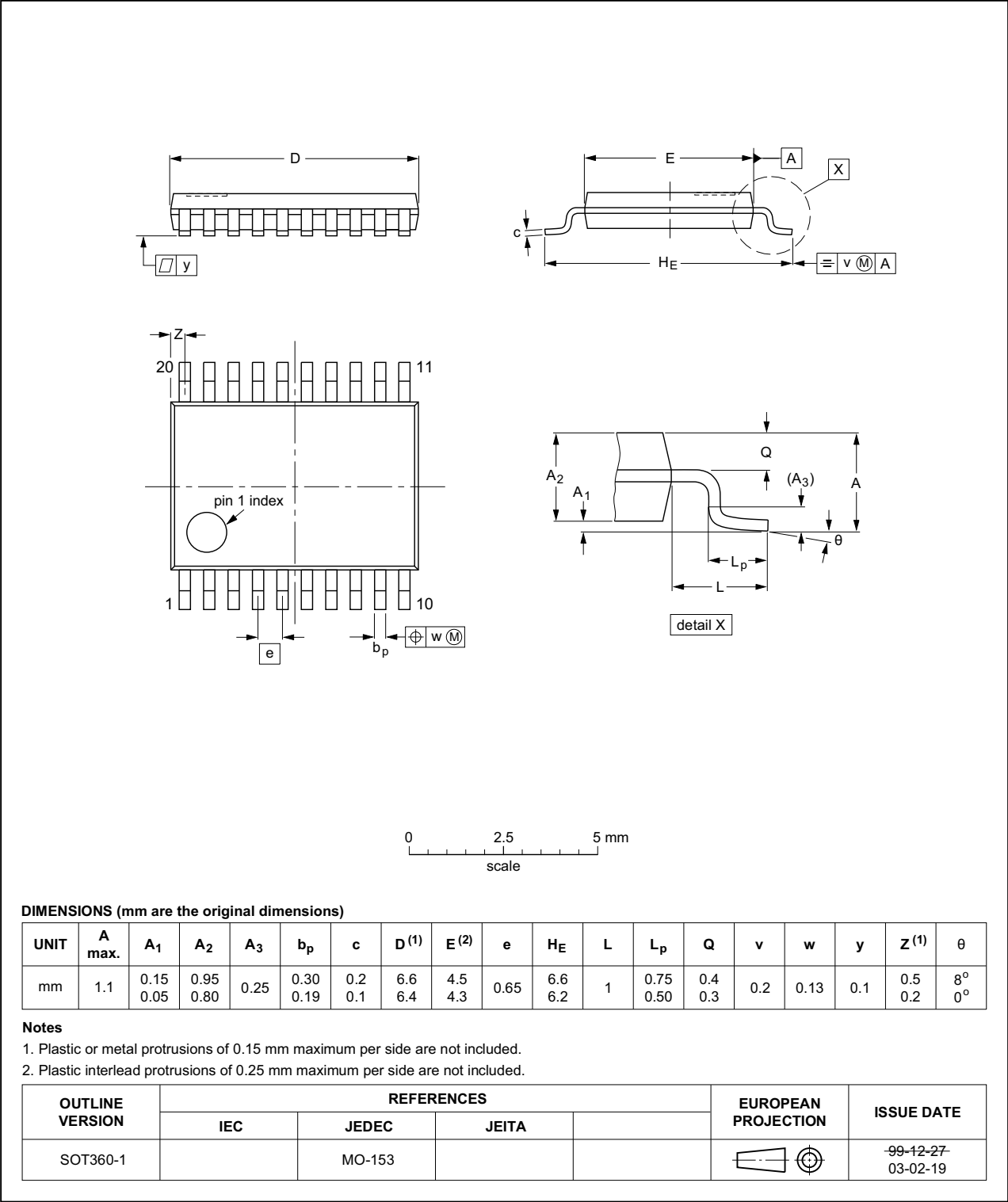**TSSOP20: plastic thin shrink small outline package; 20 leads; body width 4.4 mm**   **SOT360-1**

DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A1	A2	A3	bp	c	D (1)	E (2)	e	HE	L	Lp	Q	v	w	y	Z (1)	θ
mm	1.1	0.15 0.05	0.95 0.80	0.25	0.30 0.19	0.2 0.1	6.6 6.4	4.5 4.3	0.65	6.6 6.2	1	0.75 0.50	0.4 0.3	0.2	0.13	0.1	0.5 0.2	8° 0°

Notes

1. Plastic or metal protrusions of 0.15 mm maximum per side are not included.
2. Plastic interlead protrusions of 0.25 mm maximum per side are not included.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT360-1		MO-153				~~99-12-27~~ 03-02-19

Fig 22. Package outline SOT360-1 (TSSOP20)

All information provided in this document is subject to legal disclaimers.

13. Abbreviations

Table 10. **Abbreviations**

Acronym	Description
CDM	Charged Device Model
CMOS	Complementary Metal Oxide Semiconductor
DUT	Device Under Test
EDNMOS	Extended Drain Negative Metal Oxide Semiconductor
ESD	ElectroStatic Discharge
HBM	Human Body Model
TTL	Transistor-Transistor Logic

14. Revision history

Table 11. **Revision history**

Document ID	Release date	Data sheet status	Change notice	Supersedes
NPIC6C4894 v.1	20140417	Product data sheet	-	-

NPIC6C4894   All information provided in this document is subject to legal disclaimers.

Product data sheet **Rev. 1 — 17 April 2014** **18 of 21**

15. Legal information

15.1 Data sheet status

Document status[1][2]	Product status[3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL http://www.nexperia.com.

15.2 Definitions

Draft — The document is a draft version only. The content is still under internal review and subject to formal approval, which may result in modifications or additions. Nexperia does not give any representations or warranties as to the accuracy or completeness of information included herein and shall have no liability for the consequences of use of such information.

Short data sheet — A short data sheet is an extract from a full data sheet with the same product type number(s) and title. A short data sheet is intended for quick reference only and should not be relied upon to contain detailed and full information. For detailed and full information see the relevant full data sheet, which is available on request via the local Nexperia sales office. In case of any inconsistency or conflict with the short data sheet, the full data sheet shall prevail.

Product specification — The information and data provided in a Product data sheet shall define the specification of the product as agreed between Nexperia and its customer, unless Nexperia and customer have explicitly agreed otherwise in writing. In no event however, shall an agreement be valid in which the Nexperia product is deemed to offer functions and qualities beyond those described in the Product data sheet.

15.3 Disclaimers

Limited warranty and liability — Information in this document is believed to be accurate and reliable. However, Nexperia does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information. Nexperia takes no responsibility for the content in this document if provided by an information source outside of Nexperia.

In no event shall Nexperia be liable for any indirect, incidental, punitive, special or consequential damages (including - without limitation - lost profits, lost savings, business interruption, costs related to the removal or replacement of any products or rework charges) whether or not such damages are based on tort (including negligence), warranty, breach of contract or any other legal theory.

Notwithstanding any damages that customer might incur for any reason whatsoever, Nexperia's aggregate and cumulative liability towards customer for the products described herein shall be limited in accordance with the *Terms and conditions of commercial sale* of Nexperia.

Right to make changes — Nexperia reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

Suitability for use — Nexperia products are not designed, authorized or warranted to be suitable for use in life support, life-critical or safety-critical systems or equipment, nor in applications where failure or malfunction of a Nexperia product can reasonably be expected to result in personal injury, death or severe property or environmental damage. Nexperia and its suppliers accept no liability for inclusion and/or use of Nexperia products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

Applications — Applications that are described herein for any of these products are for illustrative purposes only. Nexperia makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

Customers are responsible for the design and operation of their applications and products using Nexperia products, and Nexperia accepts no liability for any assistance with applications or customer product design. It is customer's sole responsibility to determine whether the Nexperia product is suitable and fit for the customer's applications and products planned, as well as for the planned application and use of customer's third party customer(s). Customers should provide appropriate design and operating safeguards to minimize the risks associated with their applications and products.

Nexperia does not accept any liability related to any default, damage, costs or problem which is based on any weakness or default in the customer's applications or products, or the application or use by customer's third party customer(s). Customer is responsible for doing all necessary testing for the customer's applications and products using Nexperia products in order to avoid a default of the applications and the products or of the application or use by customer's third party customer(s). Nexperia does not accept any liability in this respect.

Limiting values — Stress above one or more limiting values (as defined in the Absolute Maximum Ratings System of IEC 60134) will cause permanent damage to the device. Limiting values are stress ratings only and (proper) operation of the device at these or any other conditions above those given in the Recommended operating conditions section (if present) or the Characteristics sections of this document is not warranted. Constant or repeated exposure to limiting values will permanently and irreversibly affect the quality and reliability of the device.

Terms and conditions of commercial sale — Nexperia products are sold subject to the general terms and conditions of commercial sale, as published at http://www.nexperia.com/profile/terms, unless otherwise agreed in a valid written individual agreement. In case an individual agreement is concluded only the terms and conditions of the respective agreement shall apply. Nexperia hereby expressly objects to applying the customer's general terms and conditions with regard to the purchase of Nexperia products by customer.

No offer to sell or license — Nothing in this document may be interpreted or construed as an offer to sell products that is open for acceptance or the grant, conveyance or implication of any license under any copyrights, patents or other industrial or intellectual property rights.

NPIC6C4894

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet

Rev. 1 — 17 April 2014

19 of 21

Export control — This document as well as the item(s) described herein may be subject to export control regulations. Export might require a prior authorization from competent authorities.

Non-automotive qualified products — Unless this data sheet expressly states that this specific Nexperia product is automotive qualified, the product is not suitable for automotive use. It is neither qualified nor tested in accordance with automotive testing or application requirements. Nexperia accepts no liability for inclusion and/or use of non-automotive qualified products in automotive equipment or applications.

In the event that customer uses the product for design-in and use in automotive applications to automotive specifications and standards, customer (a) shall use the product without Nexperia's warranty of the product for such automotive applications, use and specifications, and (b) whenever customer uses the product for automotive applications beyond

Nexperia's specifications such use shall be solely at customer's own risk, and (c) customer fully indemnifies Nexperia for any liability, damages or failed product claims resulting from customer design and use of the product for automotive applications beyond Nexperia's standard warranty and Nexperia's product specifications.

Translations — A non-English (translated) version of a document is for reference only. The English version shall prevail in case of any discrepancy between the translated and English versions.

15.4 Trademarks

Notice: All referenced brands, product names, service names and trademarks are the property of their respective owners.

16. Contact information

For more information, please visit: **http://www.nexperia.com**

For sales office addresses, please send an email to: **salesaddresses@nexperia.com**

NPIC6C4894

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet

Rev. 1 — 17 April 2014

20 of 21

17. Contents

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Nexperia](#):
  [NPIC6C4894DJ](#) [NPIC6C4894DY](#) [NPIC6C4894PWJ](#)