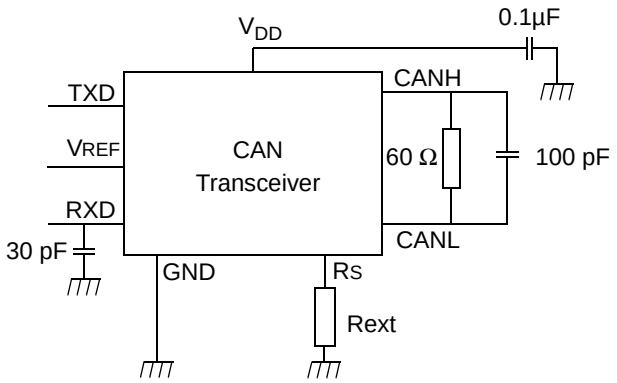
MCP2551

Feat

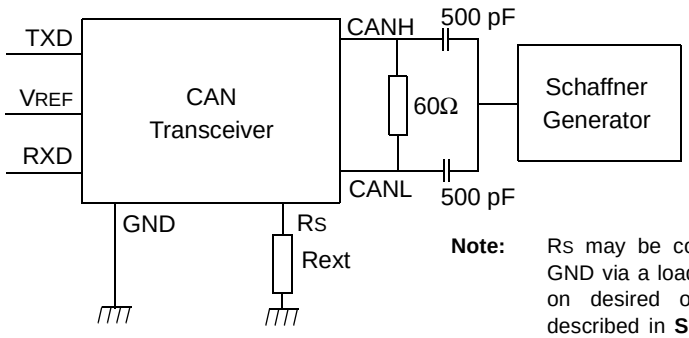
- Su eration
- Im 1898 standard physical layer re
- S and 24V systems

FIGURE 2-1: TEST CIRCUIT FOR ELECTRICAL CHARACTERISTICS



Note: RS may be connected to VDD or GND via a load resistor depending on desired operating mode as described in **Section 1.7.3 "Supply Voltage (V_{DD})"**.

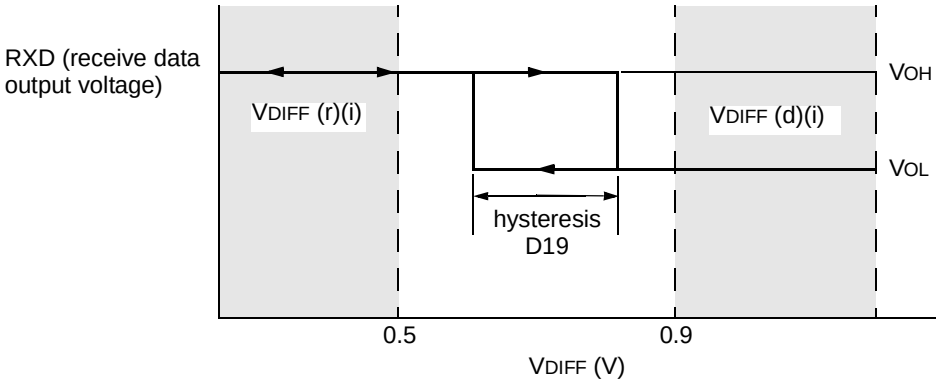
FIGURE 2-2: TEST CIRCUIT FOR AUTOMOTIVE TRANSIENTS



Note: RS may be connected to VDD or GND via a load resistor depending on desired operating mode as described in **Section 1.7.8 "Slope Resistor Input (Rs)"**.

The wave forms of the applied transients shall be in accordance with "ISO-7637, Part 1", test pulses 1, 2, 3a and 3b.

FIGURE 2-3: HYSTERESIS OF THE RECEIVER



2.3 AC Characteristics

AC Specifications

Electrical Characteristics:
Industrial (I): T_{AMB} = -40°C to +85°C V_{DD} = 4.5V to 5.5V
Extended (E): T_{AMB} = -40°C to +125°C V_{DD} = 4.5V to 5.5V

Param No.	Sym	Characteristic	Min	Max	Units	Conditions
1	t_{BIT}	Bit time	1	62.5	µs	V_{RS} = 0V
2	f_{BIT}	Bit frequency	16	1000	kHz	V_{RS} = 0V
3	TtxL2bus(d)	Delay TXD to bus active	—	70	ns	-40°C ≤ T_{AMB} ≤ +125°C, V_{RS} = 0V
4	TtxH2bus(r)	Delay TXD to bus inactive	—	125	ns	-40°C ≤ T_{AMB} ≤ +85°C, V_{RS} = 0V
			—	170	ns	-40°C ≤ T_{AMB} ≤ +125°C, V_{RS} = 0V
5	TtxL2rx(d)	Delay TXD to receive active	—	130	ns	-40°C ≤ T_{AMB} ≤ +125°C, V_{RS} = 0V
			—	250	ns	-40°C ≤ T_{AMB} ≤ +125°C, R_S = 47 kΩ
6	TtxH2rx(r)	Delay TXD to receiver inactive	—	175	ns	-40°C ≤ T_{AMB} ≤ +85°C, V_{RS} = 0V
			—	225	ns	-40°C ≤ T_{AMB} ≤ +85°C, R_S = 47 kΩ
			—	235	ns	-40°C ≤ T_{AMB} ≤ +125°C, V_{RS} = 0V
			—	400	ns	-40°C ≤ T_{AMB} ≤ +125°C, R_S = 47 kΩ
7	SR	CANH, CANL slew rate	5.5	8.5	V/µs	Refer to **Figure 2-1**; R_S = 47 kΩ, (**Note 1)**
10	t_{WAKE}	Wake-up time from standby (Rs pin)	—	5	µs	See **Figure 2-5**
11	TbusD2rx(s)	Bus Dominant to RXD Low (Standby mode)	—	550	ns	V_{RS} = +4V; (See **Figure 2-6**)
12	$C_{IN(CANH)}$ $C_{IN(CANL)}$					

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2.4 Timing Diagrams and Specifications

FIGURE 2-4: TIMING DIAGRAM FOR AC CHARACTERISTICS

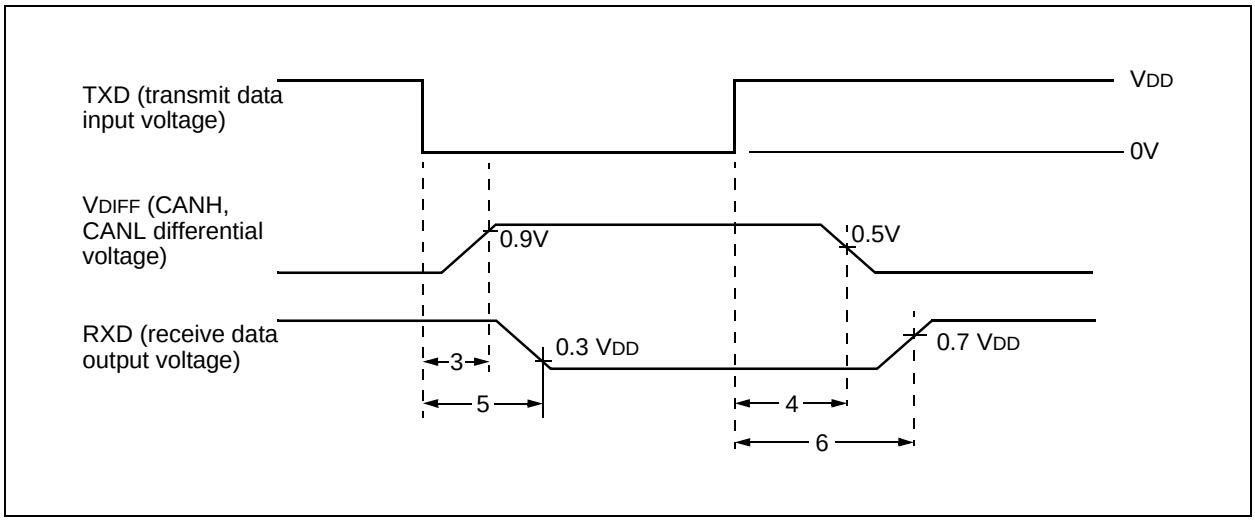


FIGURE 2-5: TIMING DIAGRAM FOR WAKE-UP FROM STANDBY

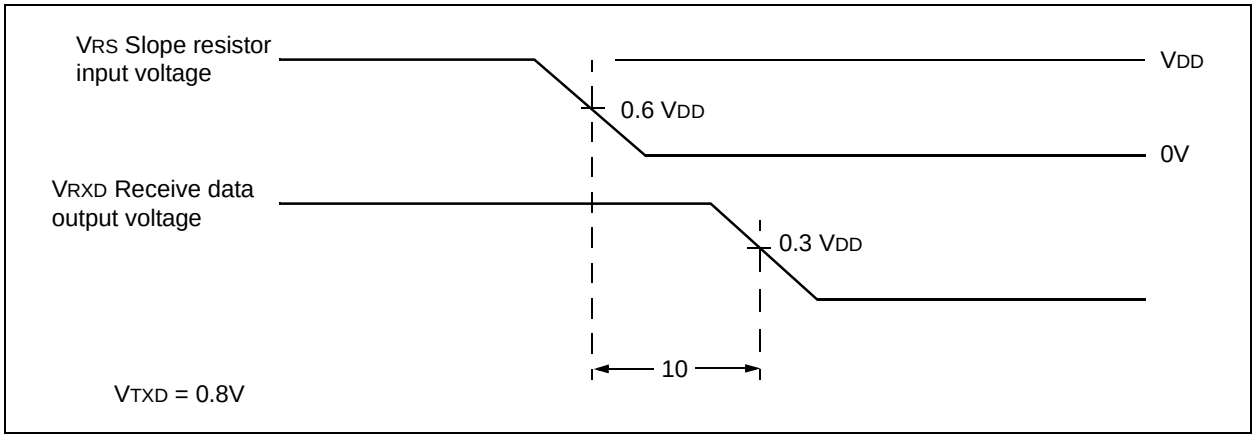
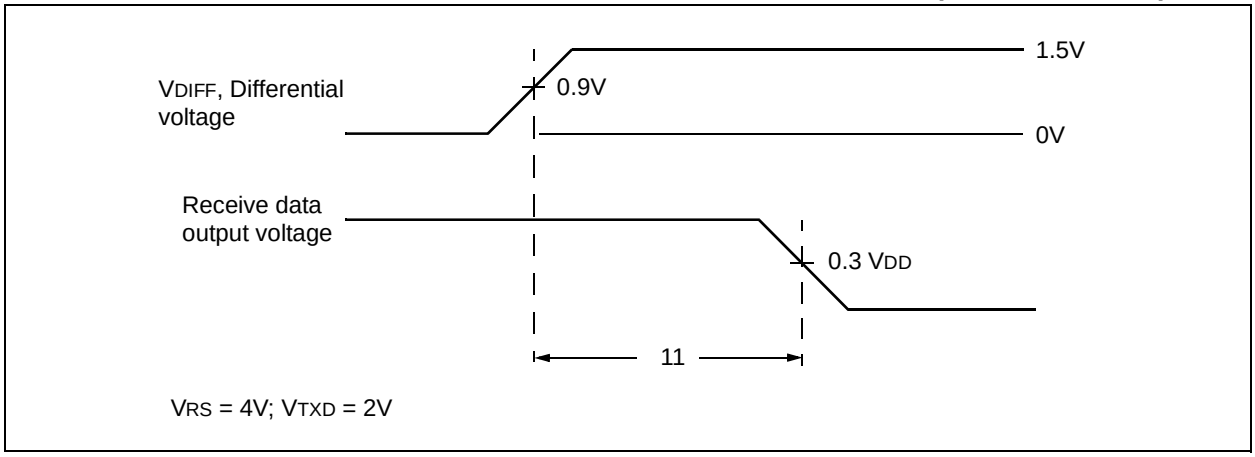


FIGURE 2-6: TIMING DIAGRAM FOR BUS DOMINANT TO RXD LOW (STANDBY MODE)



NOTES:

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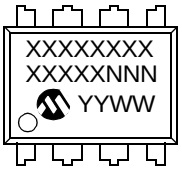
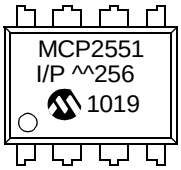
3.0 PACKAGING INFORMATION

3.1 Package Marking Information

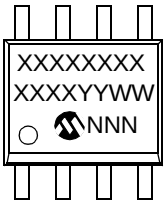
8-Lead PDIP (300 mil)



Example:



8-Lead SOIC (150 mil)

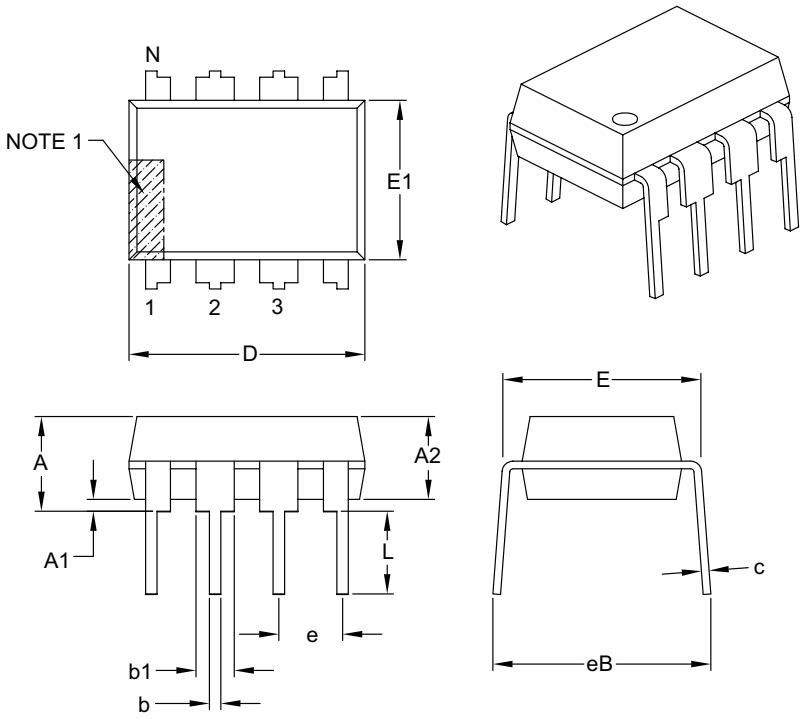


Example:

Legend:	XX...X	Customer-specific information
	Y	Year code (last digit of calendar year)
	YY	Year code (last 2 digits of calendar year)
	WW	Week code (week of January 1 is week ‘01’)
	NNN	Alphanumeric traceability code
		Pb-free JEDEC designator for Matte Tin (Sn)
	*	This package is Pb-free. The Pb-free JEDEC designator ( ) can be found on the outer packagin4 tpaage.

8-Lead Plastic Dual In-Line (P) – 300 mil Body [PDIP]

Note For the most current package drawings, please see the Microchip Packaging Specification located at http://www.microchip.com/packaging



Units		INCHES		
Dimension Limits		MIN	NOM	MAX
Number of Pins	N		8	
Pitch	e		.100 BSC	
Top to Seating Plane	A	–	–	.210
Molded Package Thickness	A2	.115	.130	.195
Base to Seating Plane	A1	.015	–	–
Shoulder to Shoulder Width	E	.290	.310	.325
Molded Package Width	E1	.240	.250	.280
Overall Length	D	.348	.365	.400
Tip to Seating Plane	L	.115	.130	.150
Lead Thickness	c	.008	.010	.015
Upper Lead Width	b1	.040	.060	.070
Lower Lead Width	b	.014	.018	.022
Overall Row Spacing §	eB	–	–	.430

Notes

1. Pin 1 visual index feature may vary, but must be located with the hatched area.
2. § Significant Characteristic.
3. Dimensions D and E1 do not include mold flash or protrusions. Mold flash or protrusions shall not exceed .010" per side.
4. Dimensioning and tolerancing per ASME Y14.5M.

   BSC: Basic Dimension. Theoretically exact value shown without tolerances.

Microchip Technology Drawing C04-018E

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8-Lead Plastic Small Outline (SN) – Narrow, 3.90 mm Body [SOIC]

Note For the most current package drawings, please see the Microchip Packaging Specification located at http://www.microchip.com/packaging

Units		MILLIMETERS		
Dimension Limits		MIN	NOM	MAX
Number of Pins	N		8	
Pitch	e		1.27 BSC	
Overall Height	A	–	–	1.75
Molded Package Thickness	A2	1.25	–	–
Standoff §	A1	0.10	–	iBN10

Notes

1. Pin 1 visual index feature may vary, but must be located within the hatched area.
2. § Significant Characteristic.
3. Dimensions D and E1 do not include mold flash or protrusions. Mold flash or protrusions shall not exceed 0.15 mm per side.
4. Dimensioning and tolerancing per ASME Y14.5M.

   BSC: Basic Dimension. Theoretically exact value shown without tolerances.
   REF: Reference Dimension, usually without tolerance, for information purposes only.

APPENDIX A: REVISION HISTORY

Revision F (July 2010)

The following is the list of modifications:

1. Updates to the packaging diagrams.

Revision E (January 2007)

The following is the list of modifications:

1. Updates to the packaging diagrams.

Revision D (October 2003)

The following is the list of modifications:

1. Undocumented changes.

Revision C (November 2002)

The following is the list of modifications:

1. Undocumented changes.

Revision B (June 2002)

The following is the list of modifications:

1. Undocumented changes.

Revision A (June 2001)

- Original Release of this Document.

NOTES:

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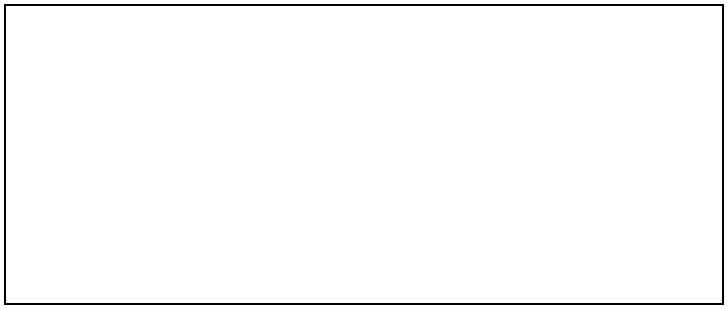
PRODUCT IDENTIFICATION SYSTEM

To order or obtain information, e.g., on pricing or delivery, refer to the factory or the listed sales office.

PART NO.	-X	/XX	XXX
Device	Temperature Range	Package	Pattern



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- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as "unbreakable."

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