



CD1232

Low Cost Microprocessor Supervisory Circuits

Version: Rev 1.0.0 Date: 2025-6-3

Features ■■

- Rated supply voltage 5.0 V
- Accurate 5% or 10% microprocessor power supply monitoring
- Programming of watchdog timer overflow
- Generation of reset signals at power on for
- The chip contains reference voltage source, analog comparator, Watchdog timer, circuit for monitoring power supply deviation accuracy.

Function ■■

- Reset signal generation after power
- Reset signal generation from external "RESET" pushbutton
- Reset signal generation from watchdog

Description ■■

CD1232 is designed to monitor power supply within the system of reset signal generation for microprocessors. It is used in monitor systems for controlling various processes and entities.

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Pin Configurations

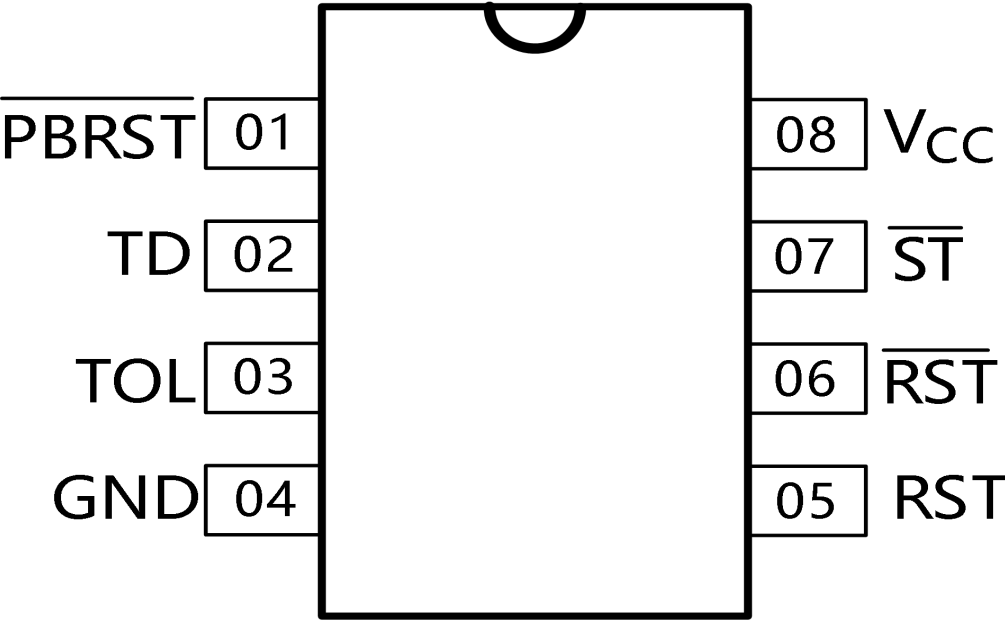


Figure 1.PIN ASSIGNMENT

Pin	Symbol	Description
01	PBRST	Pushbutton reset input
02	TD	Time Delay Set
03	TOL	Selects 5% or 10% V_{CC} Detect
04	GND	Ground
05	RST	Reset output (Active High)
06	$\overline{\text{RST}}$	Reset output (Active Low, open drain)
07	$\overline{\text{ST}}$	Strobe Input
08	V_{CC}	Supply output from voltage source

Absolute Maximum Ratings

Symbol	Parameter	Typical		Units
		Min	Max	
V _{CC}	Supply voltage	-	7.0	V
V _{IH}	Input voltage, high level	-	7.0	V
V _{IL}	Input voltage, low level	-1.0	-	V
T _A	Operating temperature range	-40	+85	°C
T _{STG}	Storage temperature	-60	+125	°C

Recommended Operating Conditions

Symbol	Parameter	Typical		Units
		Min	Max	
V _{CC}	Supply voltage	4.5	5.5	V
V _{IH}	Input voltage, high level	2.0	V _{CC} +0.3	V
V _{IL}	Input voltage, low level	-0.3	0.8	V
T _A	Operating temperature range	-20	+70	°C

Electrical characteristics

V_{CC} = 4.75 V to 5.5 V, T_A = T_{MIN} to T_{MAX}, unless otherwise noted.

DC characteristics

Symbol	Parameter	Test conditions	Typical		Units
			Min	Max	
I _{LIL1}	Input leakage current, low level, $\overline{S}T, TOL$	V _{CC} =5 V±10%, V _{IL} =0 V	-	-1	μA
I _{LIL2}	Input leakage current, low level, TD	V _{CC} =5 V±10%, V _{IL} =0 V	-	-300	μA
I _{LIL3}	Input leakage current, low level, $\overline{PB}R\overline{S}T$	V _{CC} =5 V±10%, V _{IL} =0 V	-	-1000	μA

I _{LIH1}	Input leakage current, high level, ST , TOL	$V_{CC} = 5\text{ V} \pm 10\%$, $V_{IH} = V_{CC}$	-	1	μA
I _{LIH2}	Input leakage current, high level, TD	$V_{CC} = 5\text{ V} \pm 10\%$, $V_{IH} = V_{CC}$	-	300	μA
I _{OH}	Output current, high level, RST	$V_{CC} = 5\text{ V} \pm 10\%$, $V_{OH} = 2.4\text{ V}$	-8	-	μA
I _{OL}	Output current, low level, RST, RST	$V_{CC} = 5\text{ V} \pm 10\%$, $V_{OL} = 0.4\text{ V}$	8	-	mA
V _{OH}	Output voltage, high level, RST	$V_{CC} = 5\text{ V} \pm 10\%$, $I_{OH} = -500\text{ }\mu\text{A}$	$V_{CC}-0.5$	-	V
V _{OH1}	Output voltage, high level,- RST	$V_{CC} = 2\text{ V}$, $I_{OH} = -500\mu\text{A}$	$V_{CC}-0.5$	-	V
V _{OL}	Output voltage, low level, RST	$V_{CC} = 2\text{ V}$, $I_{OL} = 1\text{ mA}$	-	0.4	V
I _{CC}	Operating current	$V_{CC} = 5\text{ V} \pm 10\%$	-	2	mA
V _{CC} TP1	V _{CC} trip point	TOL = GND	4.5	4.74	V
V _{CC} TP2	V _{CC} trip point	TOL = V _{CC}	4.25	4.49	V

AC characteristics

Symbol	Parameter	Test conditions	Typical		Units
			Min	Max	
T _{TD1}	Watchdog timer overflow time	$V_{CC} = 5.0\text{ V} \pm 10\%$, $T_{ST} \geq 20\text{ ns}$ TD = GND	62.5	250	ms
T _{TD2}		TD disconnected	250	1000	ms
T _{TD3}		TD = V _{CC}	500	2000	ms
T _{PDLY}	PBRST stable low to RST and RST	$V_{CC} = 5.0\text{ V} \pm 10\%$ $T_{PB} \geq 20\text{ ms}$	-	20	ms
T _{RST}	Reset active time	$V_{CC} = 5.0\text{ V} \pm 10\%$ $T_{PB} \geq 20\text{ ms}$	250	1000	ms
T _{RPD}	V _{CC} fail detect to RST and RST	V_{CC} =from 5.0 to 4.0 V $T_F \pm 10\mu\text{s}$	-	175	μs

TRPU	V_{CC} detect to RST and $\overline{RST}$ transition	V_{CC} = from 5.0 to 4.0 V $T_R \geq 1\mu s$	250	1000	ms
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Timing Diagram

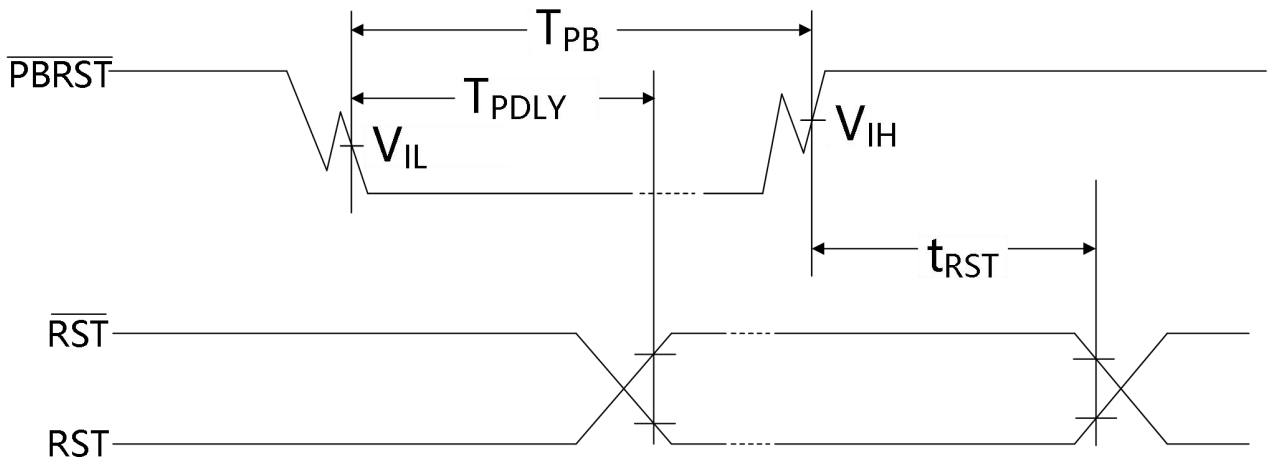


Fig. 2 – Timing diagram of forming reset signal from external PBRST control button

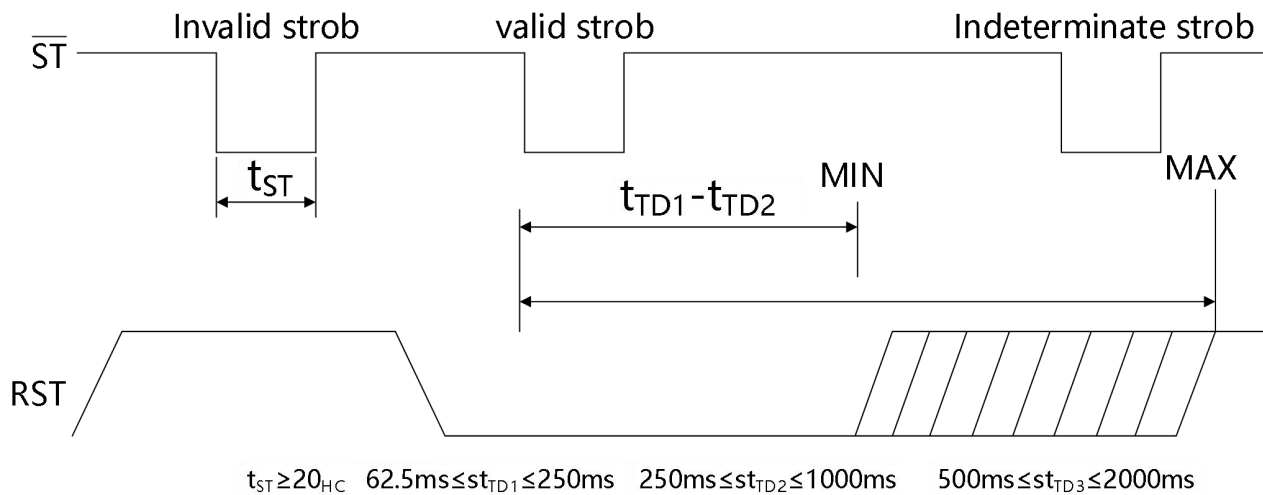


Fig. 3 – Timing diagram : Strobe input

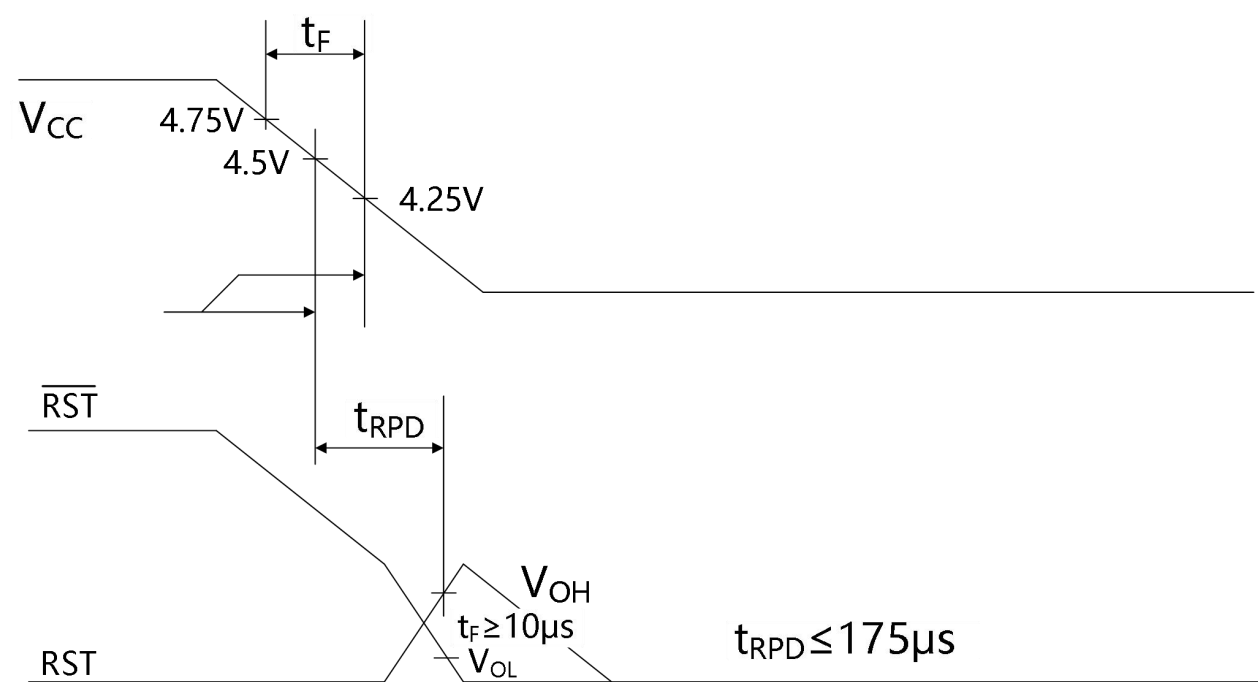


Fig. 4 – Timing diagram: power error / down to V_{CCTP}

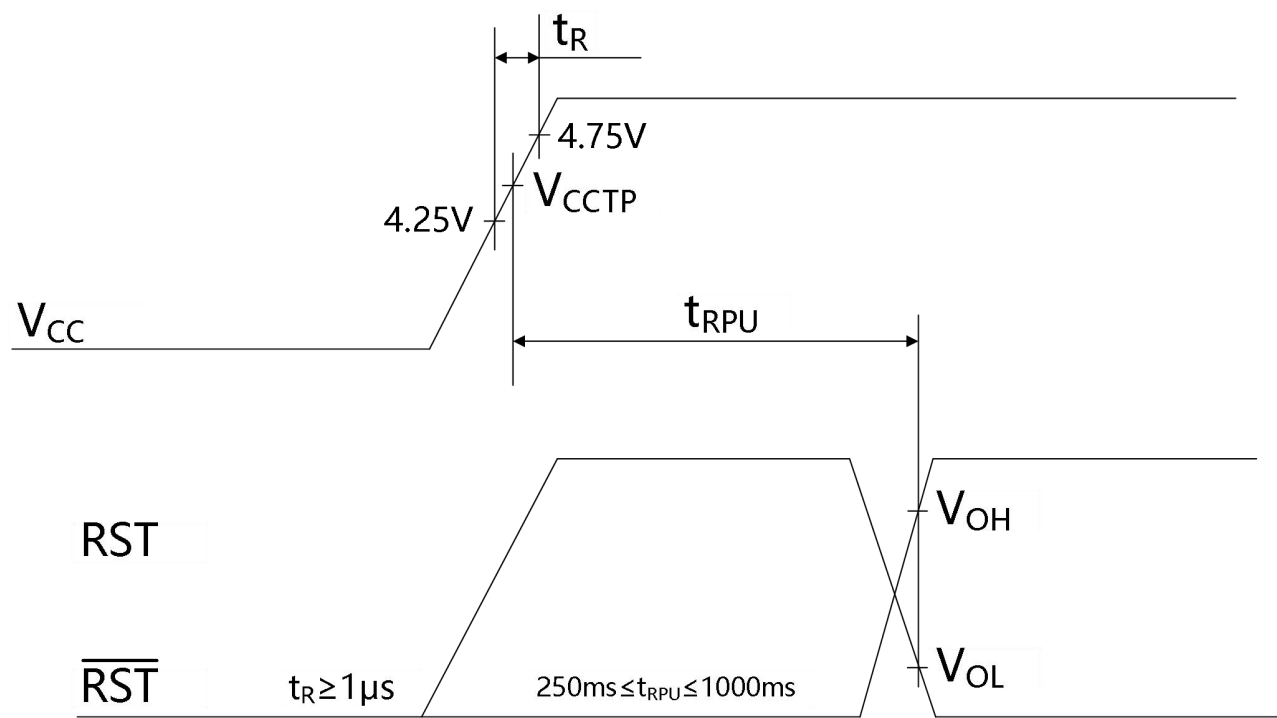


Fig. 5 – Timing diagram: Power-Up/ Stable

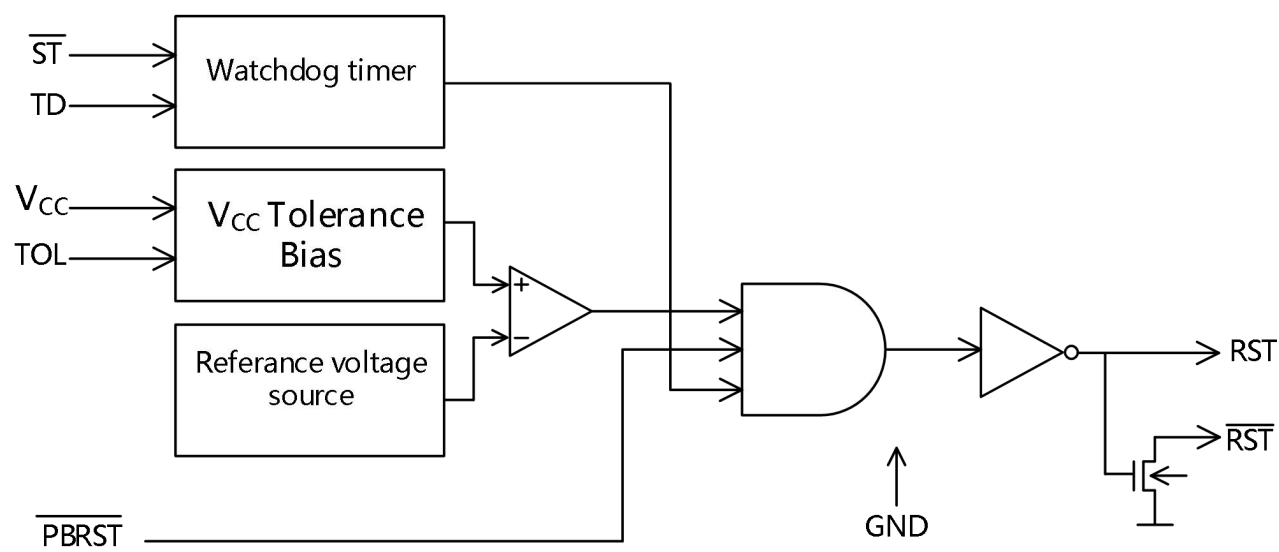


Fig.6 Block diagram

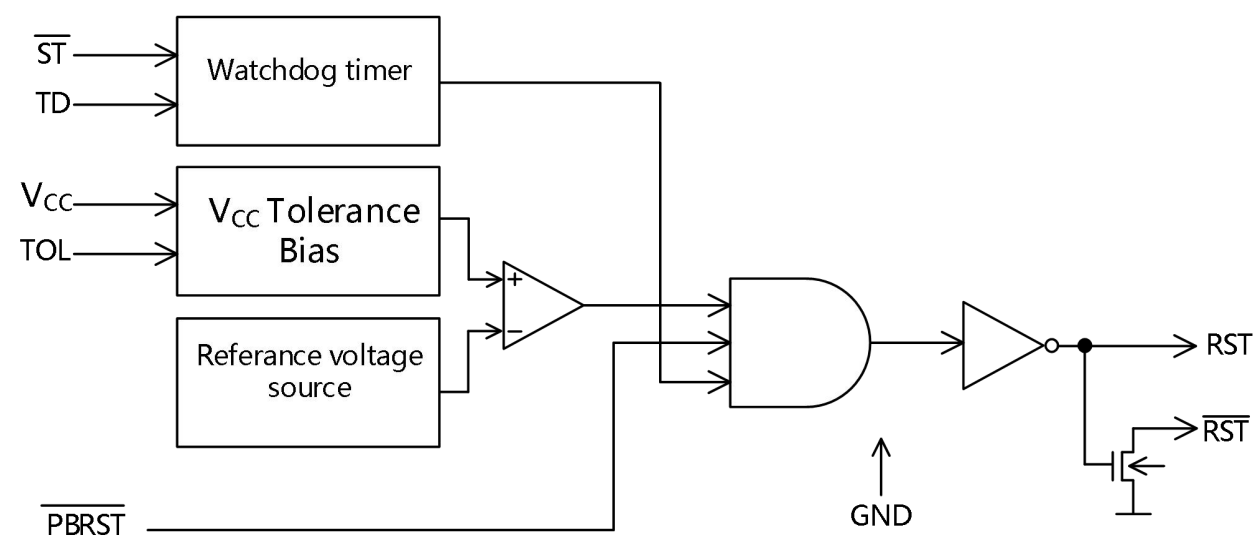
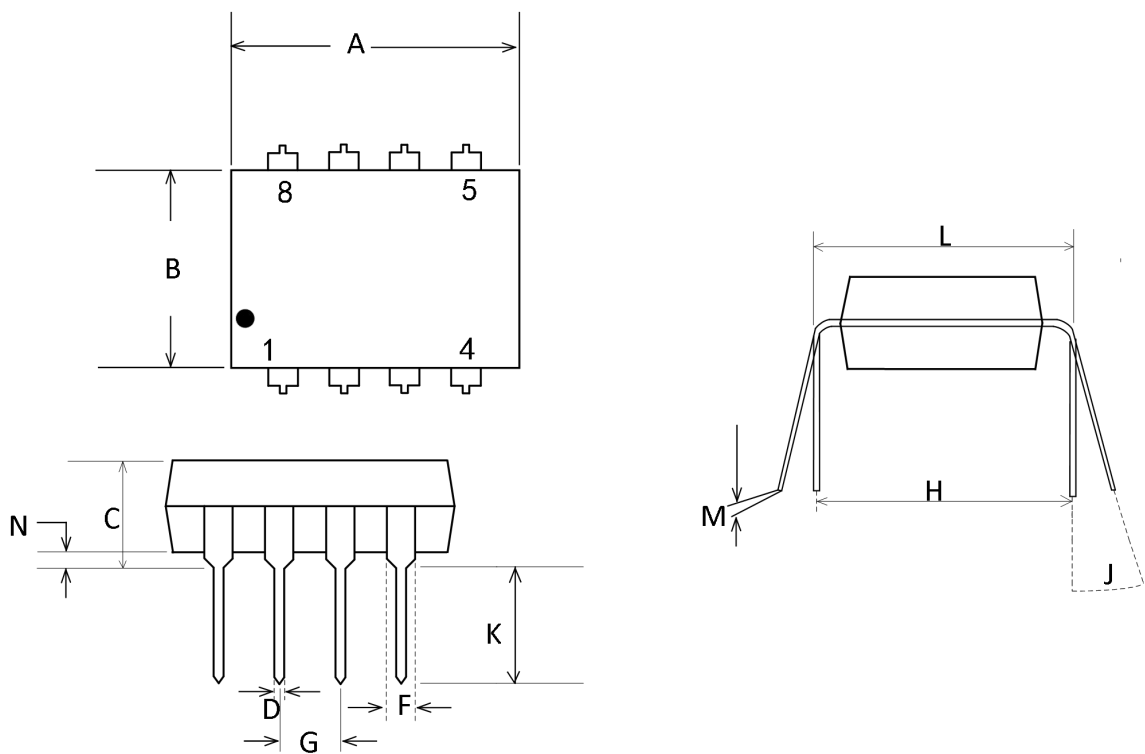


Fig.7 Application Circuit : Watchdog Timer

Package Outline Dimensions

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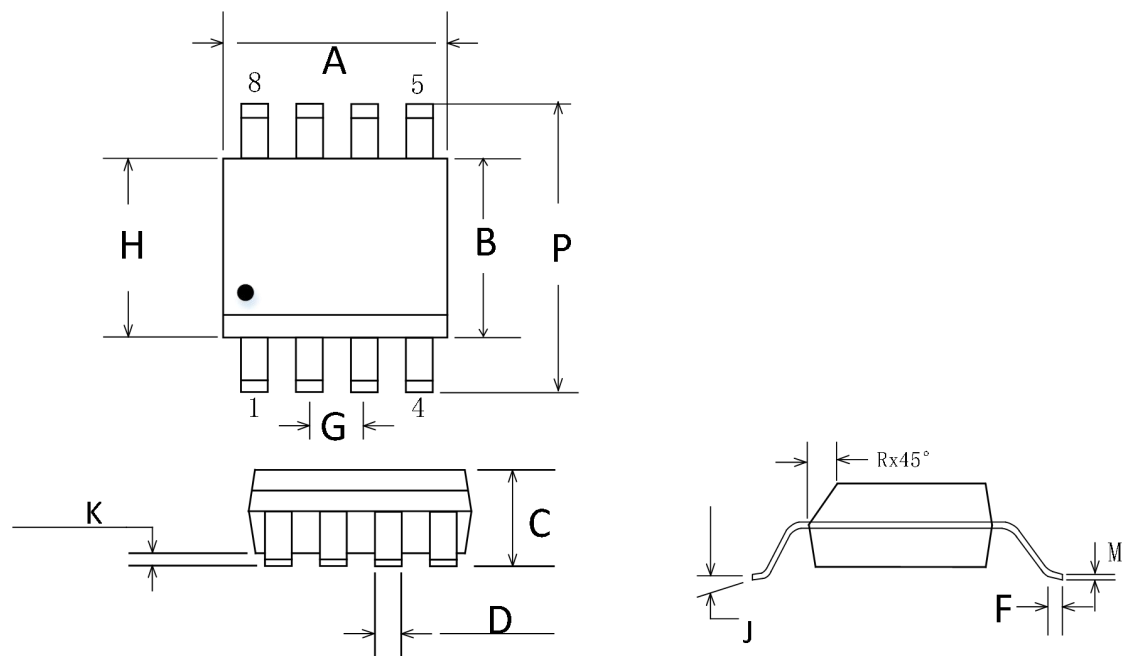


NOTES:

Dimensions "A" , "B" do not include mold flash or protrusions. Maximum mold flash or protrusions 0.25mm(0.010) per side.

Symbol	Dimension, mm		Symbol	Dimension, mm	
	MIN	MAX		MIN	MAX
A	8.51	10.16	H	7.62	
B	4.10	7.11	J	0°	10°
C		5.33	K	2.92	3.81
D	0.36	0.56	L	7.62	8.26
F	1.14	1.78	M	0.20	0.36
G	2.54		N	0.38	

SOP8



- NOTES:**
- 1. Dimensions A and B do not include mold flash protrusion.
 - 2. Maximum mold flash or protrusion 0.15mm(0.006) pre side for A; for B -0.25mm(0.010) per side.

Symbol	Dimension, mm		Symbol	Dimension, mm	
	MIN	MAX		MIN	MAX
A	4.80	5.00	H	5.72	
B	3.80	4.00	J	0°	B
C	1.35	1.75	K	0.10	C
D	0.33	0.51	M	0.1	D
F	0.40	1.27	P	5.80	F
G	1.27		R	0.25	0.50

Package/Ordering Information

MODEL	TEMPERATURE	PACKAGE DESCRIPTION	PACKAGE OPTION
CD1232AS8	-40°C~85°C	SOP-8	Tape and Reel, 2500
CD1232AS8-RL	-40°C~85°C	SOP-8	Tape and Reel, 3000
CD1232AS8-REEL	-40°C~85°C	SOP-8	Tape and Reel, 4000
CD1232ADP8	-40°C~85°C	DIP-8	Tube.50

Revision Log

Version	Revision date	Change content	Reason for Change	Modified by	Reviewed By	Note
V1.0	2025.6.3	Initial version	Regular update	WW	LYL	