

TPS7A20 xx PDQNR-A-TP

Ultra Low Consumption CMOS Voltage Regulator

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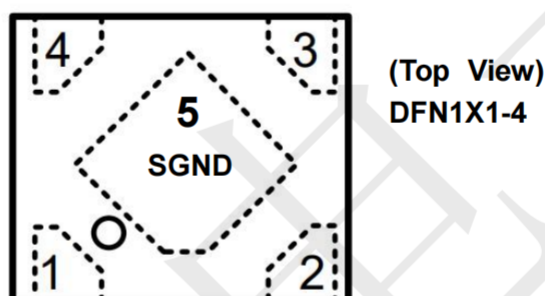
Features

- 0.8μA Current at no Load(TYP.)
- ±2% Output Accuracy
- 300mA Output Current
- Compact package: DFN1X1-4

Applications

- Portable consumer equipments
- Radio control systems
- Wireless Communication Equipments
- Ultra Low Power Micro controller

PIN CONFIGURATION



Pin Number	Pin Name	Pin Function
1	V _{OUT}	Output Pin
2	GND	Ground
3	EN	Chip Enable Pin
4	V _{IN}	Power Input Pin
5	SGND	Connect this pad to GND or leave floating. Do not connect to any potential other than GND. Connect the thermal pad to a large-area ground plane for best thermal performance.

Ordering Information

TPS7A2033PDQNR-A-TP

Example: TPS7A2033PDQNR-A-TP

→ 3.3V Version, in DFN1X1-4 Package
& Tape & Reel Packing Type

OUTPUT VOLTAGE

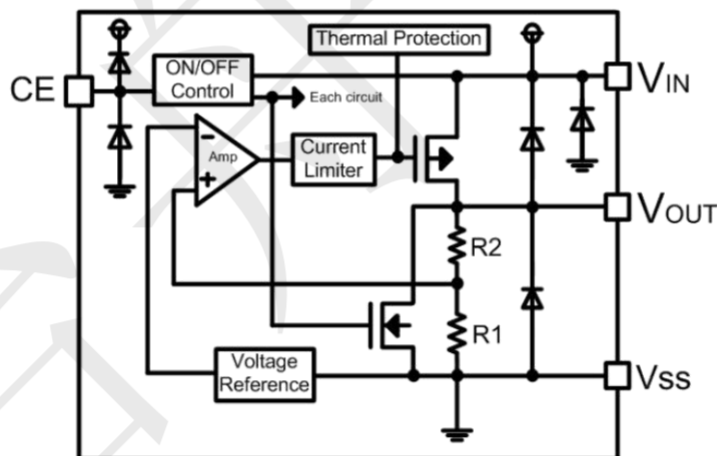
12: 1.2V	15: 1.5V
18: 1.8V	25: 2.5V
28: 2.8V	30: 3.0V
33: 3.3V	36: 3.6V

Absolute Maximum Ratings

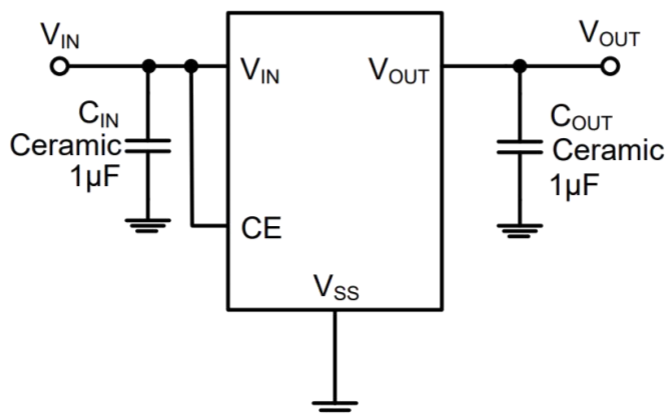
over operating free-air temperature range (unless otherwise noted)

		MIN	MAX	UNIT
VIN	Continuous input voltage range	-0.3	6.5	V
VOUT	Output voltage range	-0.3	VIN+0.3	
Current	Maximum output current	Internally limited		mA
Temperature	Operating Temperature, Topr	-40	+85	°C
	Storage, Tstg	-40	+150	
	Welding temperature and time, Tsolder		+260, 10s	
Power Dissipation	Pd DFN1X1-4	400		mW

BLOCK DIAGRAM



Typical Application Circuit



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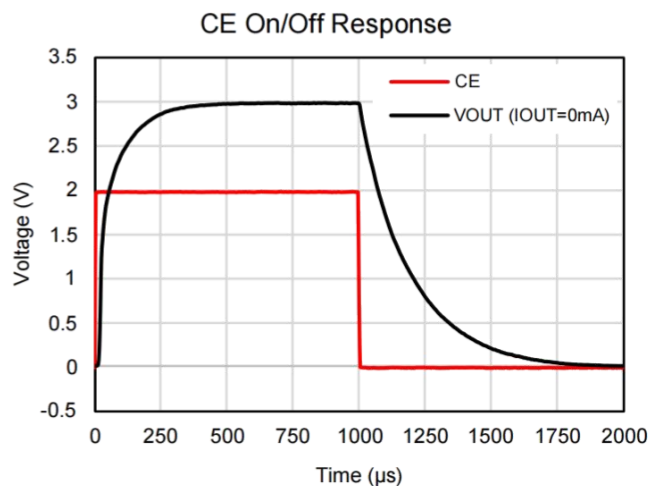
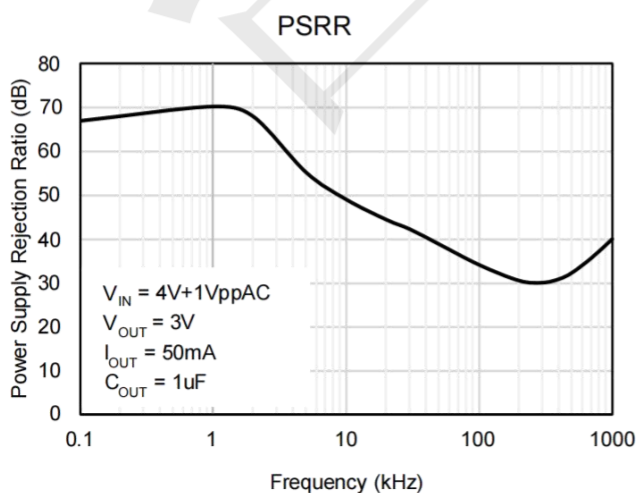
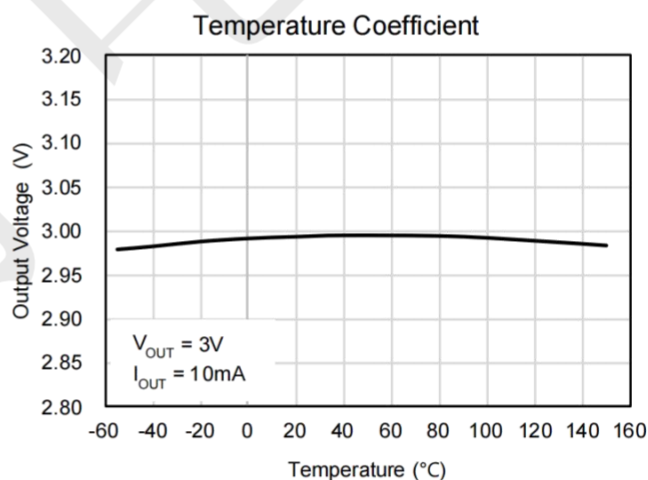
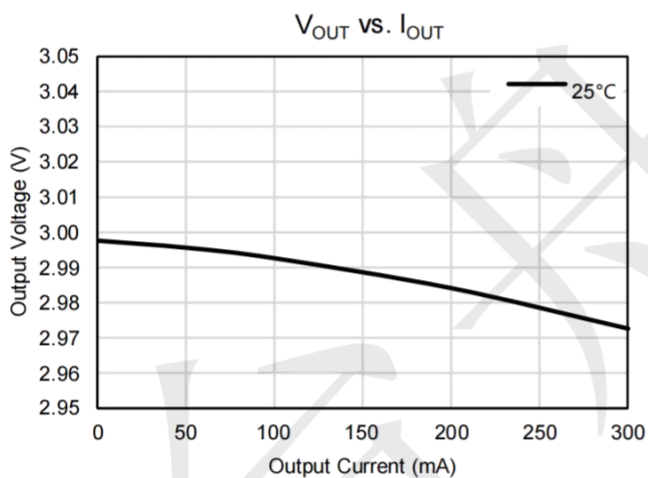
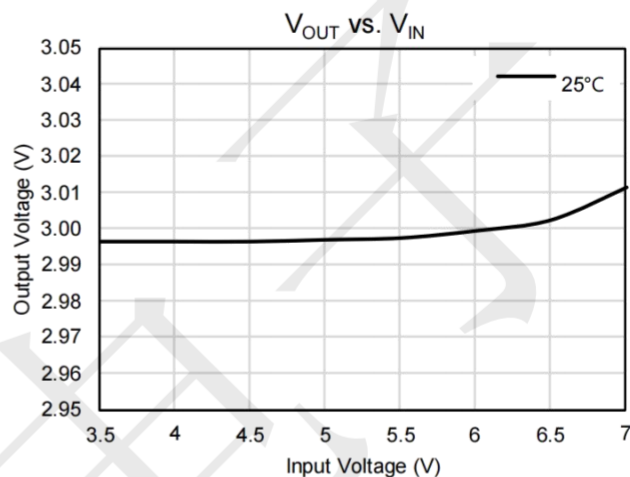
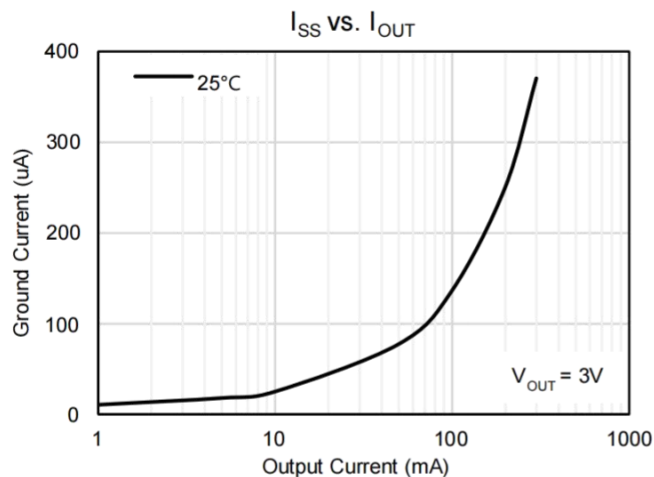
Electrical Characteristics (TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Input Voltage	V_{IN}	--	1.8	--	5.5	V
Output Voltage	V_{OUT}	--	1.2	--	3.6	V
DC Output Accuracy	--	$I_{OUT}=1mA$	-2	--	2	%
Output Current	I_{OUT}	$V_{IN}=1.8V$	150	--	--	mA
		$V_{IN}=4.3V$	350	--	--	
Dropout Voltage	$V_{dif}^{(2)}$	$I_{OUT}=100mA, V_{OUT}=3.3V$	--	110	--	mV
Supply Current	I_{SS}	$I_{OUT}=0$	--	0.8	1.3	μA
Standby Current	I_{STBY}	$CE=V_{SS}$	--	--	0.1	μA
Load Regulation	ΔV_{OUT}	$V_{IN}=V_{OUT}+1V$ $1mA \leq I_{OUT} \leq 100mA$	--	5	--	mV
Line Regulation	$\frac{\Delta V_{OUT}}{V_{OUT} \times \Delta V_{IN}}$	$I_{OUT}=10mA$ $V_{OUT}+1V \leq V_{IN} \leq 6V$	--	0.03	0.2	%/V
Temperature Coefficient	$\frac{\Delta V_{OUT}}{V_{OUT} \times \Delta T_A}$	$I_{OUT}=10mA$ $-40^\circ C < T_A < 85^\circ C$	--	50	--	ppm
Output Current Limit	I_{LIM}	$V_{OUT}=90\% \times V_{OUT}$ ($V_{OUT} \geq 3.0V$)	350	--	--	mA
Short Current	I_{SHORT}	$V_{OUT}=V_{SS}$	--	10	--	mA
Power Supply Rejection Ratio	PSRR	$I_{OUT}=50mA$	100Hz	--	65	dB
			1kHz	--	70	
			10kHz	--	50	
			100kHz	--	35	
CE "High" Voltage	$V_{CE}^{H"}$	--	1.5	--	V_{IN}	V
CE "Low" Voltage	$V_{CE}^{L"}$	--	--	--	0.3	V
COOUT Auto-Discharge Resistance	$R_{DISCHRG}$	$V_{IN}=5V, V_{OUT}=3.0V$ $V_{CE}=V_{SS}$	--	200	--	Ω

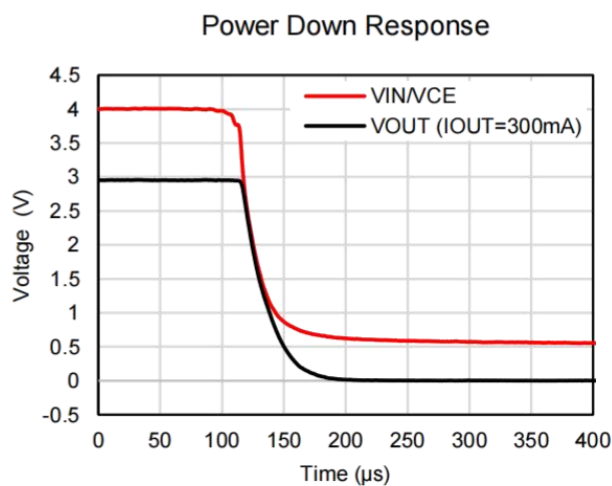
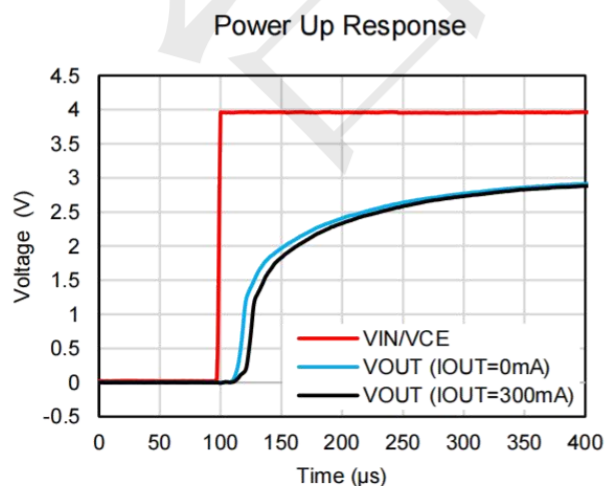
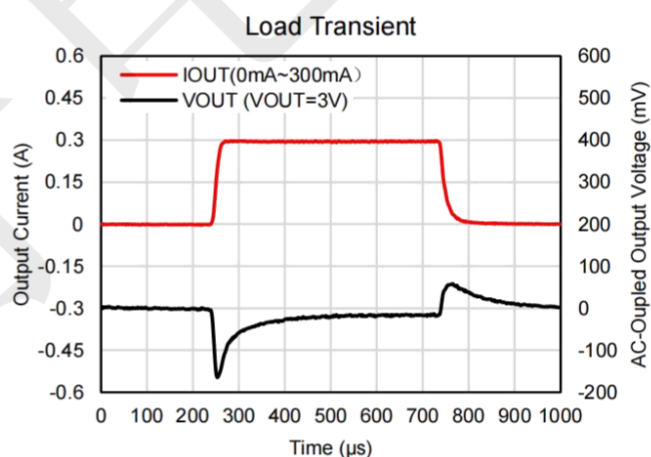
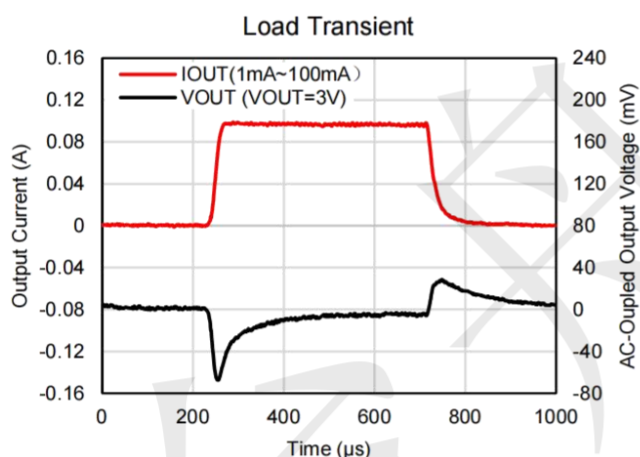
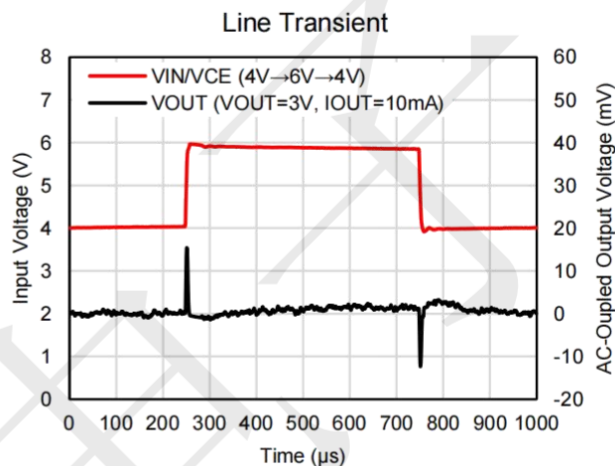
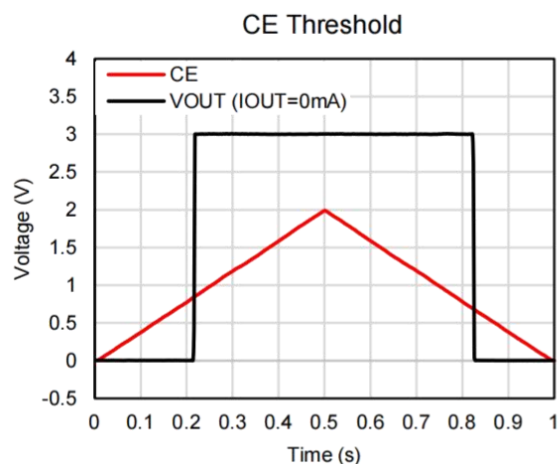
Note:

- Test condition: the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.
- V_{dif} : The Difference Of Output Voltage And Input Voltage When Input Voltage Is Decreased Gradually Till Output Voltage Equals To 98% Of V_{OUT} .

Typical Operating Characteristics (25 °C, unless otherwise noted)

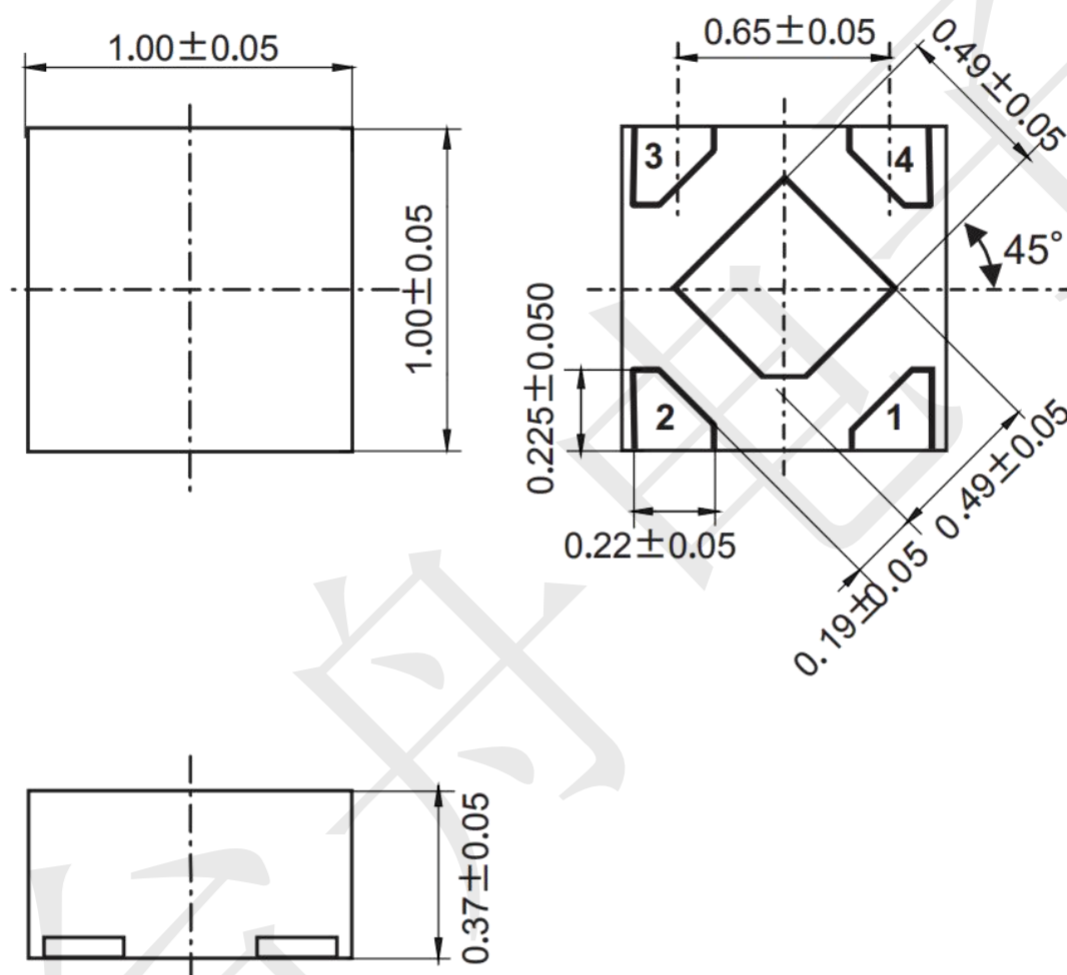


Typical Operating Characteristics (25 °C, unless otherwise noted)



Package Outline Dimensions (unit: mm)

DFN1X1-4



Mounting Pad Layout (unit: mm)

