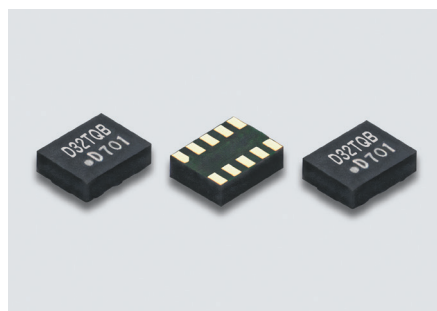


SMD Real Time Clock Module (For Automotive) Under Development

DD3225TQB



Actual size

Features

- Digital temperature compensated type
- Low current consumption
- High precision: $\pm 5.0 \times 10^{-6}$ (-40 to $+85^\circ\text{C}$), $\pm 8.0 \times 10^{-6}$ ($+85$ to $+105^\circ\text{C}$)
- I²C-BUS serial interface: 400kHz fast-mode compatible
- Clock function: hour, minute, second
- Calendar function with auto leap year adjustment: year, month, day, day of week
- Alarm interrupt function: day, day of week, hour, minute
- Fixed-cycle timer interrupt function: 244.14 μs to approximately 68 hours
- Time update interrupt function: minute, second
- Clock output function: 32.768kHz, 1024Hz, 1Hz (select one)
- Power switching function
- CMOS output
- AEC-Q200 compliant (Option: Equivalent to AEC-Q100)

* "I²C-BUS" is a trademark of NXP semiconductors.

Applications

- High precision clock source
- Car navigation, smart meter, data logger



Standard Specification

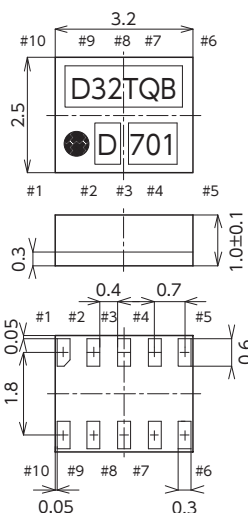
Item	Legend	Spec.				Condition
		min.	typ.	max.	Unit	
Output Frequency	f ₀	—	32.768	—	kHz	
Supply Voltage	V _{CC}	+1.6	—	+5.5	V	(Clock Timing Operating)
Frequency Tolerance (Includes frequency tolerance at room temperature)	f _{tol}	—5	—	+5	$\times 10^{-6}$	—40 to +85°C
		—8	—	+8	$\times 10^{-6}$	+85 to +105°C
Current Consumption	I _{CC}	—	1.00	15	μA	V _{CC} =+3.0V OE="H", f _{SCL} =0Hz, INTN=V _{CC} , Output:32.768kHz, CL=0pF
		—	2.00	18		V _{CC} =+5.0V Temperature Compensation Interval 2s V _{CC} Voltage Detection Time 2ms
Stand-by Current (#1 pin "L" Level)	I _{std}	—	0.52	12	μA	V _{CC} =+3.0V OE="L", f _{SCL} =0Hz, INTN=V _{CC} , Output off
		—	0.56	15		V _{CC} =+5.0V Temperature Compensation Interval 2s V _{CC} Voltage Detection Time 2ms
Load Condition	L _{CMOS}	—	—	15	pF	
Symmetry	SYM	40	—	60	%	50%V _{CC}
0 Level Output Voltage	V _{OH}	2.9	—	3.0	V	V _{CC} =3.0V, I _{OH} =—100 μA
1 Level Output Voltage	V _{OL}	Gnd	—	Gnd+0.1	V	V _{CC} =3.0V, I _{OL} =+100 μA
Rise and Fall Time	tr/ta	—	—	100	ns	20 to 80% V _{CC} Level
OE Pin 0 Level Input Voltage	V _{IH}	0.95 $\times$ V _{CC}	—	V _{CC}	V	
OE Pin 1 Level Input Voltage	V _{IL}	Gnd—0.3	—	0.05 $\times$ V _{CC}	V	
Start Up Time	T _{start}	—	—	1	s	V _{CC} =+3V, Ta=+25°C
Reliability						AEC-Q100/AEC-Q200
Packing Unit (1)						2000pcs./reel (ϕ 180)

(1) Moisture prevention packing
Moisture sensitivity level : Level 2 (IPC/JEDEC J-STD-033)

Consult our sales representative for other specifications.

[mm]

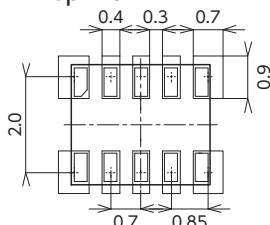
Dimensions



Function	
#1 Input	#4 Output Condition
H	Oscillation out
L	High Z

Marking	
(1) Type	DD3225TQB
(2) Logo	D
(3) Date code	Year(1digit) + Week(2digits) e.g. 2026/1/1 → 601

Recommended Land Pattern <Top View>



Pin Function

No.	Name	I/O	Function
#1	OE	I	Output control enable input (L:High impedance,H:Clock output)
#2	V _{CC}	-	Supply voltage
#3	VBAT	-	Battery connection
#4	Output	O	Clock output connection
#5	SCL	I	I ² C-BUS serial interface clock input connection
#6	N.C.	-	
#7	SDA	I/O	I ² C-BUS serial interface data input/output connection
#8	N.C.	-	
#9	Gnd	-	Ground connection
#10	INTN	O	Interrupt signal output, open-drain output