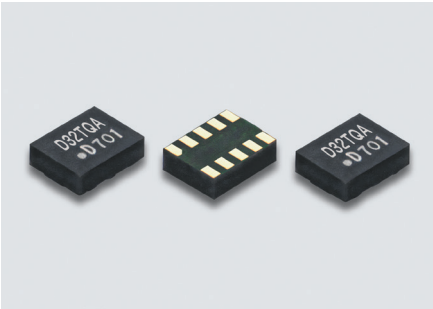
SMD Real Time Clock Module〈For Automotive〉 Under Development

DD3225TQA



Actual size

■ Features

- Digital temperature compensated type
- Low current consumption
- High precision: ±5.0×10^{-6} (−40 to +85℃), ±8.0×10^{-6} (+85 to +105℃)
- I^{2}C-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: 244.14μs to approximately 32 years
- Time update interrupt function: minute, second
- Clock output function: 32.768kHz, 1024Hz, 1Hz (select one)
- SOUT function: internal status output possible
- Timestamp function: single-event recording with precision from year to second
- CMOS level output
- AEC-Q200 compliant (Option: Equivalent to AEC-Q100)

* "I^{2}C-BUS" is a trademark of NXP semiconductors.

Pb-Free

RoHS Compliant

■ Applications

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

■ Standard Specification

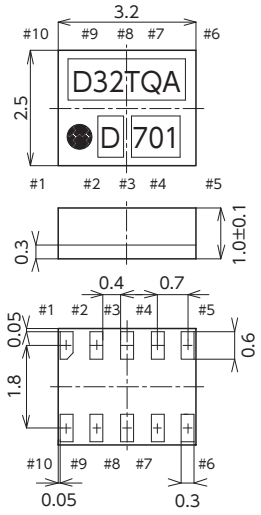
Item	Legend	Spec. min.	Spec. typ.	Spec. max.	Unit	Condition	
Output Frequency	f0	–	32.768	–	kHz		
Supply Voltage	Vcc	+1.6	–	+5.5	V	(Clock Timing Operating)	
Frequency Tolerance (Includes frequency tolerance at room temperature)	f_tol	−5	–	+5	×10^{-6}	−40 to +85℃	
		−8	–	+8	×10^{-6}	+85 to +105℃	
Current Consumption	Icc	–	1.00	15	μA	Vcc=+3.0V	OE="H" fSCL=0Hz, INTN=Vcc, Output:32.768kHz CL=0pF Temperature Compensation Interval 2s
		–	2.00	18		Vcc=+5.0V	
Stand-by Current (#1 pin "L" Level)	I-std	–	0.52	12	μA	Vcc=+3.0V	OE="L" fSCL=0Hz, INTN=Vcc, Output off Temperature Compensation Interval 2s
		–	0.56	15		Vcc=+5.0V	
Load Condition	L_CMOS	–	–	15	pF		
Symmetry	SYM	40	–	60	%	50%Vcc	
0 Level Output Voltage	VOH	2.9	–	3.0	V	Vcc=3.0V, IOH=−100μA	
1 Level Output Voltage	VOL	Gnd	–	Gnd+0.1	V	Vcc=3.0V, IOL=+100μA	
Rise and Fall Time	tr/tf	–	–	100	ns	20 to 80% Vcc Level	
OE Pin 0 Level Input Voltage	VIH	0.95×Vcc	–	Vcc	V		
OE Pin 1 Level Input Voltage	VIL	Gnd−0.3	–	0.05×Vcc	V		
Start Up Time	Tstart	–	–	1	s	Vcc=+3V, Ta=+25℃	
Reliability	AEC-Q100/AEC-Q200						
Packing Unit (1)	2000pcs./reel (φ180)						

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

Consult our sales representative for other specifications.

[mm]

■ Dimensions

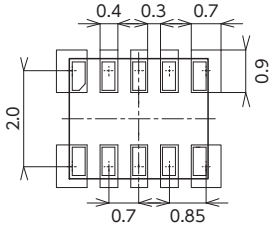


Function	
#1 Input	#4 Output Condition
H	Oscillation out
L	High Z

Marking	
(1) Type	D32TQA
(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/0	Function
#1	OE	I	Output control enable input (L:High impedance, H:Clock output)
#2	Vcc	-	Supply voltage
#3	EVENT	I	Trigger input for Time stamp request
#4	Output	0	Clock output connection
#5	SCL	I	I^{2}C-BUS serial interface clock input connection
#6	SOUT	0	CMOS output for forinternal status output
#7	SDA	I/0	I^{2}C-BUS serial interface data input/output connection
#8	N.C.	-	
#9	Gnd	-	Ground connection
#10	INTN	0	Interrupt signal output, open-drain output