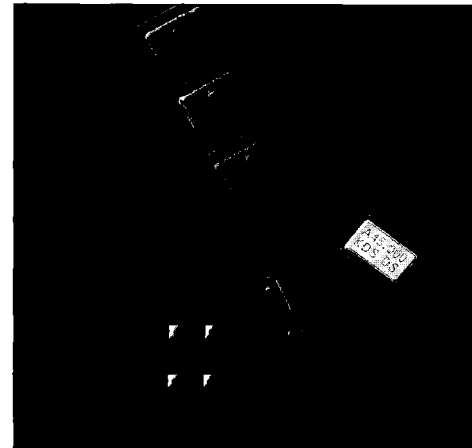




ELECTRICAL SPECIFICATIONS

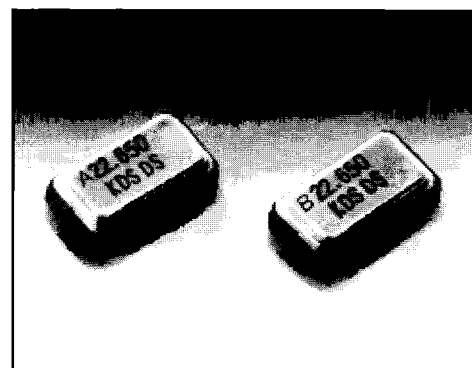
ITEM	SYM.	DSO751S	DSO751SA	DSO751SL	DSO751SM
FREQUENCY RANGE	f <sub>o</sub>	1.8M to 75M	1.8M to 50M	7M to 32M	1.8M to 57M
ABSOLUTE MAXIMUM RATING	SUPPLY VOLTAGE	V <sub>dd</sub> : -0.5V to 0.70V	←	←	←
	INPUT VOLTAGE	V <sub>ccin1</sub> : -0.5V to V <sub>dd</sub> -0.5V	←	←	←
	OUTPUT TERMINAL VOLTAGE	V <sub>o1</sub> : -0.5V to V <sub>dd</sub> +0.5V	←	←	←
	OUTPUT TERMINAL CURRENT	I <sub>out</sub> : 25mA	←	10mA	←
	STORAGE TEMP.	T <sub>str</sub> : 55°C to +125°C	←	←	←
GENERAL SPECIFICATIONS	FREQ. DEVIATION*	df/f: +100ppm/150ppm	←	-130ppm	-100ppm/-50ppm
	SUPPLY VOLTAGE	V <sub>dd</sub> : 5V ±0.5V	←	2.7V to 5.5V	3.3V ±0.3V
	OPER. TEMP. RANGE	Temp: -10°C to +70°C	←	←	←
	CURRENT CONSUMPTION(1)†2	I <sub>dd1</sub> : 30mA max (f <sub>o</sub> ≤50M) 45mA max (f <sub>o</sub> ≤50M)	30mA max	8mA max (V <sub>dd</sub> 3V) 15mA max (V <sub>dd</sub> 5V)	25mA max
	CURRENT CONSUMPTION(2) (pin #1 to Low)	I <sub>dd2</sub> : 20mA max (f <sub>o</sub> ≤70M) 5mA max (f <sub>o</sub> ≤70M) (high impedance, osc. stop only 70M above)	15mA max (cont. osc. output high Z)	100µA max (osc. stop)	100µA max (f <sub>o</sub> ≤36M) 5mA max (f <sub>o</sub> ≤36M)
OUTPUT TERMINAL	OUTPUT DISABLE TIME	T <sub>ol</sub> : 100nsec max	←	5nsec max	100nsec max
	OUTPUT ENABLE TIME	T <sub>pl</sub> : 100nsec max (f <sub>o</sub> ≤70M) 100nsec max (f <sub>o</sub> ≤70M)	100nsec max	5nsec max	2nsec max (f <sub>o</sub> ≤36M) 20nsec max (f <sub>o</sub> ≤36M)
	SYMMETRY	Duty: 50±5% (f <sub>o</sub> ≤10M)*3 50±10% (f <sub>o</sub> ≤10M)	←*4	50±10%	50±5% (f <sub>o</sub> ≤10M) 50±10% (f <sub>o</sub> ≤10M)
	RISE/FALL TIME	T <sub>r</sub> , T <sub>f</sub> : 10nsec max (f <sub>o</sub> ≤50M) 8nsec (f <sub>o</sub> ≤70M) 5nsec max (f <sub>o</sub> ≤70M) (0.5V to 0.9V) (0.5V to 0.9V)	10nsec max (f <sub>o</sub> ≤20M) 5nsec max (f <sub>o</sub> ≤20M) (0.5V to 2.4V)	18nsec max (V <sub>dd</sub> 3V) 15nsec max (V <sub>dd</sub> 5V) (0.1V to 0.9V)	15nsec max (f <sub>o</sub> ≤20M) 10nsec (f <sub>o</sub> ≤50M) 7nsec max (f <sub>o</sub> ≤50M) (0.1V to 0.9V)
	"0" LEVEL VOLTAGE	V <sub>o1</sub> : 0.5V max	←	V <sub>dd</sub> x 0.1 max	←
INPUT TERMINAL	"1" LEVEL VOLTAGE	V <sub>o1</sub> : V <sub>dd</sub> x 0.9 min	2.4 min	V <sub>dd</sub> x 0.9 min	←
	OUTPUT LOAD, TTL	N: 10LS-TL max	10TTL max	5LS-TL max	N/A
	OUTPUT LOAD, C-MOS	CL: 50pF max (f <sub>o</sub> ≤50M) 15pF max (f <sub>o</sub> ≤50M)	30pF max	15pF max	30pF max
	"0" LEVEL INPUT VOLTAGE	V <sub>ii</sub> : 0.8V	←	←	0.5V max
	"1" LEVEL INPUT VOLTAGE	V <sub>ii</sub> : 2.2V min	←	2.0V min	2.3V min



NOTE: \*1: -10°C to +70°C, including Freq. deviation at room temp.  
\*2: without load  
\*3: V<sub>dd</sub> x 0.5 level  
\*4: 1.4V level

KDS's DSO751S Series ultra-miniature leadless oscillators work well with automatic mounting equipment for reflow soldering. This glass seam sealing package assures high reliability. The state-of-the-art oscillator offers tri-state function (S type) and oscillation standby function (SL type). It works with supply voltage of three to five volts.

DSO631S/SL



KDS's new DSO631S series offers the finest selection in the ultra miniature crystal oscillators. High reliability is assured due to seam welding. Contact your KDS representative for more details.

NOTE: A high frequency capacitor (0.01µF) should be used with DSO751S/SL and DSO49SJ because it does not possess a by-pass capacitor in V<sub>DD</sub>-GND.

ITEM	TYPE	DSO631S	DSO631SL
Frequency Range		2.0-20.0MHz	7.0-32.0MHz
Frequency Tolerance		±0.100ppm	±50ppm (V <sub>dd</sub> 3-5V)
Oper. Temp. Range		-10 to +70°C	←
Storage Temp. Range		-25 to +30°C	←
Output		CMOS OR TTL	CMOS
"0" Level (V <sub>o1</sub> )		0.5V max	V <sub>dd</sub> x 0.1
"1" Level (V <sub>o1</sub> )		4.5V min.	V <sub>dd</sub> x 0.9
Symmetry (Duty)		40-60% (F <sub>o</sub> ≤10MHz) 45-55% (F <sub>o</sub> ≤10MHz)	40-60%
Rise, Fall Time (T <sub>r</sub> , T <sub>f</sub> )		15ns max	15ns max
Control		"H" or open osc. stop; "L" High impedance V <sub>dd</sub> = 2.0V min V <sub>dd</sub> = 0.8V max	"H" or open osc. stop; "L" L V <sub>dd</sub> = 2.0V min V <sub>dd</sub> = 0.8V max
Supply Voltage (V <sub>dd</sub> )		5 ±0.5V	5 ±0.5V   3 ±0.3V
Current Consumption		33mA max (No Load)	15mA max   3mA max
Output Load		C = 50PF or LS-TTL10   C = 15PF or LS-TTL1C	C = 15PF or LS-TTL5

NOTE: A high frequency capacitor (0.01µF) should be used with DSO631S/SL because it does not possess a by-pass capacitor in V<sub>DD</sub>-GND.

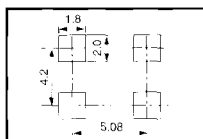


Fig 1A) Land Pattern: DSO751S/SL

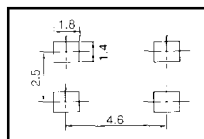


Fig 2A) Land Pattern: DSO631S/SL

DIMENSIONS (MM)

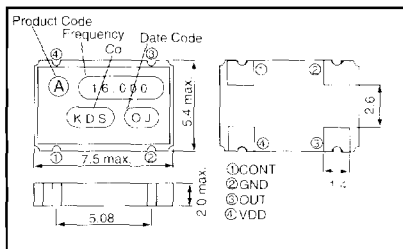


Fig 1) Dimensions: DSO751S/SL

NOTE: DSO751S/SL is available with standoff 0.15 ± 0.1mm made of high temperature solder.

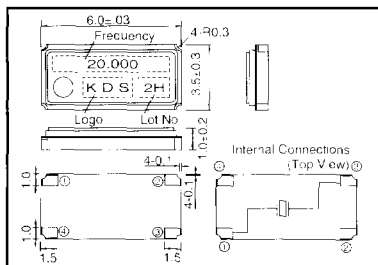


Fig 2) Dimensions: DSO631S/SL