

TX235A-D3-0.28-20.000-3-TR



ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Nominal Frequency	f_0		20.000			MHz
Supply Voltage	V_{CC}	$T_a=25^{\circ}\text{C}$	-5%	3.3	+5%	V
Supply Current	I	$T_a=25^{\circ}\text{C}$			6	mA
Initial Frequency Calibration	$\Delta f/f_0$	V_{CC} at 25°C	-1.0		+1.0	ppm
Frequency Stability vs. Temperature	$\Delta f/f_0 (T_a)$	Referenced at 25°C	-0.28		+0.28	ppm
Frequency Stability vs. Supply Voltage	$\Delta f/f_0 (\Delta V_{CC})$	$V_{CC} \pm 5\%$	-0.2		+0.2	ppm
Frequency Stability vs. Load Change	$\Delta f/f_0 (\Delta I)$	$V_{CC} \pm 10\%$	-0.2		+0.2	ppm
Overall Stability		All conditions including 20 years aging	-4.6		+4.6	ppm
Aging, after 30 days of operation	$\Delta f/\Delta t_y$	1 day 1 year	-0.01 -1.00		+0.01 +1.00	ppm
Operating Temperature	T_a		-40		+85	$^{\circ}\text{C}$
Storage Temperature	$T_{(stg)}$	Absolute max	-55		+125	$^{\circ}\text{C}$

PHASE NOISE

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
@100 Hz Offset	$\mathcal{E} (\Delta f)$			-120		dBc/Hz
@1 kHz Offset	$\mathcal{E} (\Delta f)$			-140		dBc/Hz
@10 kHz Offset	$\mathcal{E} (\Delta f)$			-150		dBc/Hz

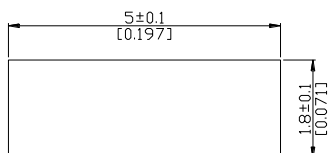
TX235A-D3-0.28-20.000-3-TR

OUTPUT CHARACTERISTICS

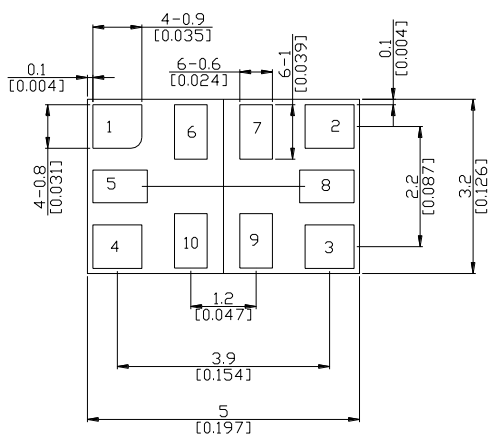
PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Output Levels	VOH/VOL	V_{CC} , load = 15pF		$0.9V_{CC}/0.1V_{CC}$		V
Duty Cycle	DC	load = 15pF	45		55	%
Rise/Fall Time	t_r/t_f	10% ~ 90% V_{out}			6	ns
Enable / Disable	E/D	load = 15pF	$0.8V_{CC}$		$0.2V_{CC}$	V

MECHANICAL DIMENSIONS AND PIN FUNCTIONING

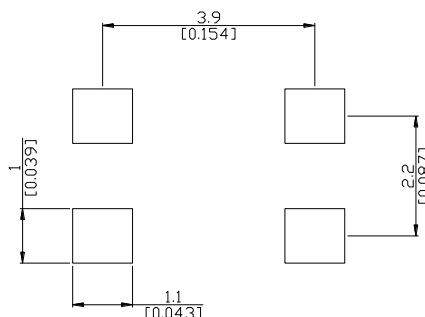
SIDE VIEW



BOTTOM VIEW



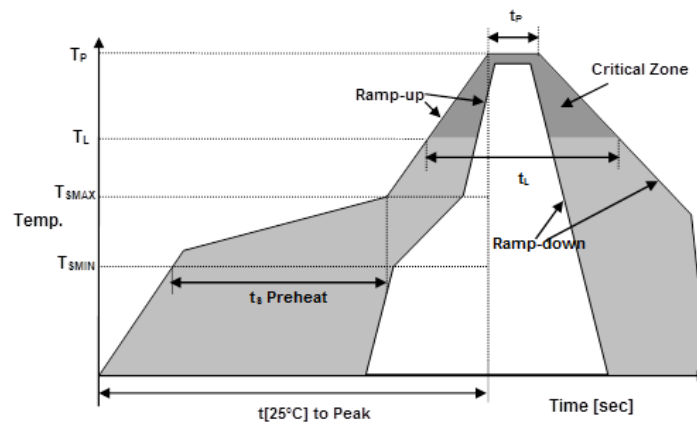
RECOMMENDED LAND PATTERN



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PIN	SYMBOL	FUNCTION
1	N/C	No connect
2	GND	Ground
3	OUT	Output
4	V _{CC}	Supply Voltage
5	N/C FT	Do not connect; factory test only
6	N/C FT	Do not connect; factory test only
7	N/C FT	Do not connect; factory test only
8	N/C FT	Do not connect; factory test only
9	N/C FT	Do not connect; factory test only
10	N/C FT	Do not connect; factory test only

REFLOW PROFILE



TX235A-D3-0.28-20.000-3-TR

Reflow profile IPC/JEDEC J-STD-020 REV. C		
Temperature Min Preheat	T _{SMIN}	150°C
Temperature Max Preheat	T _{SMAX}	200°C
Time (T _{SMIN} to T _{SMAX})	t _s	60-180 sec.
Temperature	T _L	217°C
Peak Temperature	T _P	260°C
Ramp-up rate	R _{UP}	3°C/sec max.
Ramp-down rate	R _{DOWN}	6°C/sec max.
Time within 5°C of Peak Temperature	t _p	20-40 sec.
Time t[25°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	t _L	60-150 sec.

RALTRON	Signed	Date
Created	CP	August 04, 2015
Eng. approved	CP	August 04, 2015
REV A		