

Heavy Load, 3.3V, Tristate Oscillator with STAND-BY FUNCTION

SM994

With an input current requirement of only 2.5 μ A typical in standby mode, Monitor Products' miniature, surface mount SM994 oscillator is ideal in applications where low power standby consumption is critical. This product differs from our standard 990 Tristate series in that the oscillator turns off during the disabled function, and the output impedance goes high (our SM990, SM991, SM992 and SM993 models continue oscillating although the output stage is disabled and the impedance goes high).

APPLICATIONS

- PDAs
- ATM
- PCMCIA
- Laptops
- Controller Boards
- Wireless RF
- Networking
- Disk & Tape Drives
- Cameras

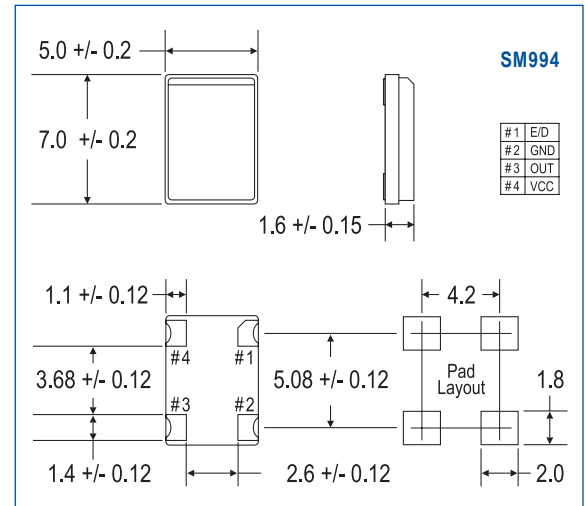
FEATURES

- Only 2.5 μ when using standby function
- TTL/CMOS compatible
- Low profile (1.6mm)
- Reflow solderable at 260°C for 10 secs
- Hermetically-sealed, ceramic package
- 16mm tape & reel (500 pcs/reel)

ELECTRICAL SPECIFICATIONS	SM994
Frequency Range	1.8432 ~ 80.0 MHz*
Supply Voltage	3.3 VDC \pm 0.3 V
Load Capacitance	30 pF
Disabled Standby Current	2.5 μ A typical, 10 μ A max
Input Current	45 mA max (Vcc 3.3V)
Symmetry	50/50 \pm 10% std (50/50 \pm 5% optional**)
Frequency Stability	\pm 100 ppm std (\pm 50 ppm avail)
Oper Temp Range	0°C ~ 70°C std (other options avail)
Rise and Fall Time	1.5 nS typ, 3 nS max
Start Up Time	5 mS max
Logic 0 Level	Vcc X 0.1V max
Logic 1 Level	Vcc X 0.9 V min
Phase Jitter RMS	8 ps typical

* Denotes frequency range potential. Contact factory for your specific requirement

** 5% symmetry available for selected frequencies - call factory for details



Units = mm

DEVELOPED FREQUENCIES

1.843200	8.192000	17.734476	24.576000	33.000000	56.448000
2.048000	9.830400	18.432000	25.000000	33.330000	57.600000
2.457600	10.000000	18.937500	25.175000	33.333000	60.000000
3.000000	11.059200	19.069928	25.426500	33.333330	62.196000
3.579545	12.000000	19.200000	25.750000	33.868800	62.500000
3.686400	12.288000	19.312500	26.660000	34.200000	63.566400
4.000000	12.352000	19.440000	27.000000	34.560000	64.000000
4.096000	12.441600	19.660800	27.500000	34.574400	65.000000
4.354500	12.500000	20.000000	28.224000	34.576000	65.536000
4.433619	13.330000	20.160000	28.322000	48.000000	66.000000
4.915200	13.500000	20.250000	28.375000	50.000000	66.393900
5.000000	13.600000	20.284000	28.636360	50.113630	66.660000
5.068800	14.318180	20.736000	29.491200	50.000000	66.666000
6.000000	14.745600	22.000000	29.498900	52.000000	66.666660
6.144000	15.000000	22.118400	29.498920	52.900000	66.666700
6.250000	15.360000	22.220000	29.500000	53.000000	66.667000
6.758400	16.000000	22.222200	30.000000	53.125000	67.500000
7.108000	16.384000	22.500000	30.159000	53.203425	67.737600
7.200000	16.500000	23.040000	30.720000	53.693175	71.500000
7.372800	16.666000	23.587000	31.500000	54.000000	75.000000
7.680000	16.666700	23.941100	32.000000	54.217400	80.000000
8.000000	16.670000	24.000000	32.256000	55.000000	
8.064000	17.631200	24.192000	32.768000	56.250000	

Monitor Products has a proven track record as a pioneer manufacturer in the frequency control market. If our extensive selection of standard and engineered crystals and oscillators does not meet your spec, we will work with you towards a customized solution.

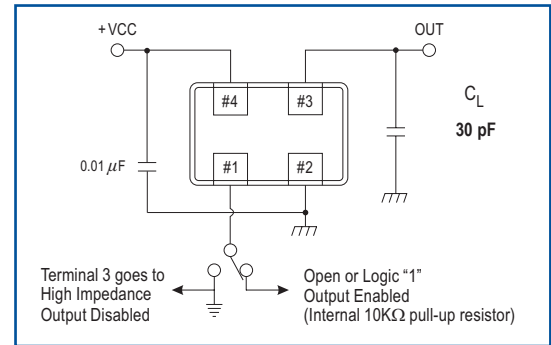
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SM994

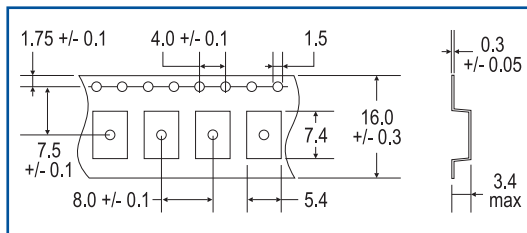
ENVIRONMENTAL PERFORMANCE SPECIFICATIONS

Oper Temp Range	-10°C ~ 70°C standard *
Storage Temp Range	-55°C ~ 125°C
Humidity	85% RH, 85°C, 48 Hours
Hermetic Seal	Leak Rate 2×10^{-8} ATM-cm ³ /sec max
Solderability	MIL-STD-202F Method 208E
Reflow Solderability	260°C for 10 seconds
Vibration	MIL-STD-202F Method 204, 50G, 50 to 2000 Hz
Shock	MIL-STD-202F Method 213B Test Cond E, 1000G, 1/2 Sine Wave
MIL-PRF-55310	Exceeds environmental and electrical specifications of equivalent MIL-PRF-55310
Packaging	16mm Tape & Reel (500pcs/reel) or Bulk (<500pcs)

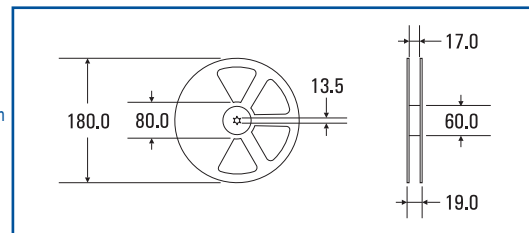
*See Part Numbering Key for other temperature options



TEST CIRCUIT



TAPE DIMENSIONS



REEL DIMENSIONS (500pcs/reel std)

PART NUMBERING KEY

Sample Part Numbers

SM99421B2E
@ 75.0 MHz =

SERIES	SYMMETRY	FREQUENCY STABILITY	TEMPERATURE RANGE	PACKAGING	FREQUENCY
SM994 3.3V, 30pF	21 = 55/45 % 22 = 60/40 %	B = 100 ppm* C = 50 ppm	2 = 0°C ~ 70°C 5 = -40°C ~ 85°C 6 = -55°C ~ 125°C 7 = -10°C ~ 70°C*	A = Bulk (<500pcs) E = Tape & Reel* (500pcs/reel)	75.0
SM994	21	B	2	E	

* Standard

Call factory for additional options. Use full descriptive part number when ordering. Parts will be marked with series and frequency only.

NOTE : With "Standby Function" activated, the oscillator stops oscillating (conserving power) and output impedance goes high.

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