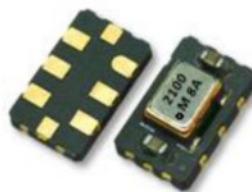


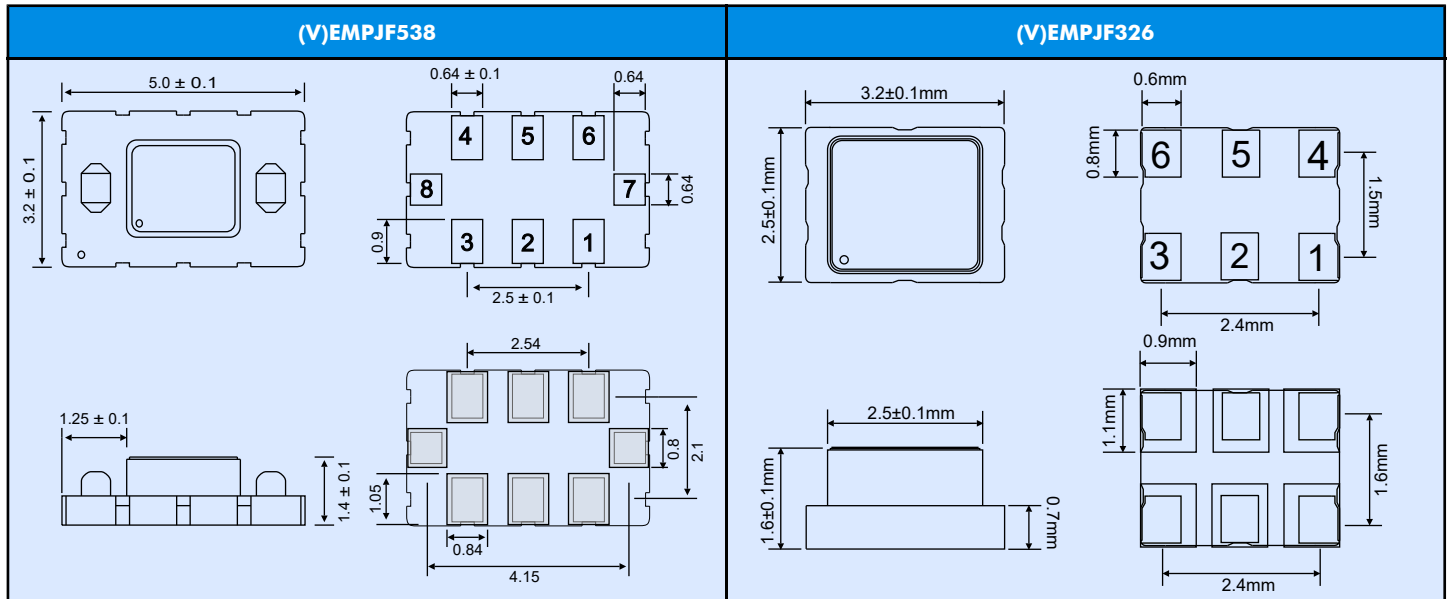
**FEATURES**

- Support for high frequency (up to 2.1GHz)
- Miniature Product Size
- 300 fs RMS Integrated Phase Jitter


**General Specifications at Ta = +25°C**

Output Logic	PECL	
Models	(V)EMPJF538 & (V)EMPJF326	
Supply Voltage (V <sub>DD</sub> )	2.5V ±10%	+3.3V ±10%
Frequency Range	15MHz (min.) 2,100MHz (max.)	
Output Logic "High", "1"	V <sub>dd</sub> - 1.03V (min.) V <sub>dd</sub> - 0.6V (max.)	
Output Logic "Low", "0"	V <sub>dd</sub> - 1.85V (min.) V <sub>dd</sub> - 1.6V (max.)	
Output Load	50Ω into V <sub>dd</sub> -2V or Thevenin Equivalent	
Current Consumption (V <sub>dd</sub> = +3.3V)	100 mA (typ.) 120 mA (max.)	
Disable Current	99 mA (typ.)	
Rise / Fall Time	0.4 nsec. (max.) (20% to 80% Waveform)	
Initial Calibration Tolerance	± 1.0 ppm (max.) at +25°C ± 2°C	
Frequency Stability Codes	Temperature (ref to +25°C)	± 2.5 ppm over -40°C to +85°C (default) ±2.5 ppm over -40°C to +85°C (available)
	Aging at Ta = +25°C	± 1.0 ppm (max.) Per year
	Voltage Change	± 0.2 ppm (max.), For a ±5% input voltage change
	Load Change	± 0.2 ppm (max.), For a ±10% load condition change
	Reflow	±1.0 ppm (max.), 1 reflow and measured 24 hours afterwards
Duty Cycle	50±5%	
Start-up Time	5 msec. (typ.); 10 msec (max.)	
RMS Jitter (typ.) (12KHz to 20MHz)	15MHz ~ 50MHz: 500fsec (typ.), 51MHz ~ 1,200MHz: 250fsec (typ.)	
Storage Temperature	-55°C to 150°C	
Control Voltage Function on Pad 1		
Control Voltage Center	+1.5V ± 1.0V for both V <sub>dd</sub> = 2.5V & 3.3V	
Control Voltage Range	+0.9V ± 0.6V for both V <sub>dd</sub> = 2.5V & 3.3V	
Frequency Pulling Range	±8 ppm (min.)	
Linearity	±1% (typ.); 10% (max.)	
Transfer Function	Positive Transfer	
Input Impedance	5MΩ (typ.)	
Output Enable Function on Pad 2		
OE Control on Pad 2	70% of V <sub>dd</sub> (min.) to enable output. (Open Connection Prohibit) 30% of V <sub>dd</sub> (max.) to disable output	
Output Enable Time / Disable Time	200 nsec (max.) / 50 nsec (max.)	

**Outline Dimensions (in mm) and suggested pad layout**



**Pad Connections:**

- Pad 1: VCTCXO: Control Voltage
- Pad 2: OE
- Pad 3: Ground
- Pad 4: Output
- Pad 5: Complimentary Output
- Pad 6: Supply Voltage
- Pad 7: Do not Connect
- Pad 8: Do not Connect

**Part Number Format**

(V)EMPJF part numbers are derived as follows:  
 Example: 100.000 25VEMPJF538-25/-40+85

