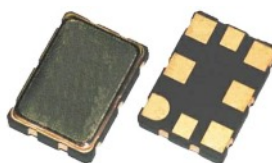


### FEATURES

- EQJF Series oscillators, Ultra-low Jitter
- Outputs LVPECL, LVDS, CML Differential outputs: 50~2100MHz
- HCSL Differential Outputs: 50~700MHz
- RMS phase jitter 150fs typical
- ITAR Free



ITAR FREE



### GENERAL SPECIFICATIONS

Output Logic Type	LVPECL	LVDS	CML	HCSL	
Frequency Range	50 ~ 2100MHz	50 ~ 2100MHz	50 ~ 2100MHz	50 ~ 700MHz	
Load	50Ω into V <sub>DD</sub> -2V or Thevenin equivalent	100Ω between OUT and OUTN	50Ω to V <sub>DD</sub>	50Ω to GND	
Power Supply Voltage (V <sub>DD</sub> )	+2.5V±10% or +3.3V±10%	+2.5V±10% +3.3V±10%	+1.8V±5% +2.5V±10% +3.3V±10%	+1.8V±5% or +2.5V±10% or +3.3V±10%	
Output 'HIGH' Voltage	V <sub>DD</sub> -1.165V min. V <sub>DD</sub> -0.8V max.	V <sub>DD</sub> : 1.4V typical V <sub>DD</sub> : 1.6V max.	V <sub>DD</sub> : -0.085V min. V <sub>DD</sub> : = max.	V <sub>DD</sub> : 0.66V min. V <sub>DD</sub> : 1.15V max.	
Output 'LOW' Voltage	V <sub>DD</sub> : -2.0V min. V <sub>DD</sub> : -1.55V max.	V <sub>DD</sub> : 1.1V typical V <sub>DD</sub> : 0.9V min.	V <sub>DD</sub> : -0.6V min. V <sub>DD</sub> : -0.32V min.	V <sub>DD</sub> : 0.0V min. V <sub>DD</sub> : 0.15V min.	
Frequency Stability Codes	Frequency stability over operating temp. Range	±25ppm	±50ppm	±100ppm	If non-standard please enter the desired stability after the 'C' or 'I' Example: 'C20' is ±20ppm over -10° to +70°C.
	Commercial -10° to +70°C	A	B	C	
	Industrial -40° to 85°C	D	E	F	
Ageing at Ta = 25°C	±3ppm max. first year; 2±ppm max. per year thereafter				
Duty Cycle	50%±5%	50%±5%	50%±5%	50%±5%	
Rise Time (Tr) Fall Time (Tf) (20% ~ 80% waveform)	0.35ns max.	0.35ns max.	0.35ns max.	0.4ns max.	
Current Consumption at V <sub>DD</sub> = 3.3V	100mA typical 120mA max.	75mA typical 90mA max.	70mA typical 85mA max.	94mA typical 115mA max.	
Current with output Disabled	99mA max.	74mA max.	69mA max.	93mA max.	

### SPECIFICATION

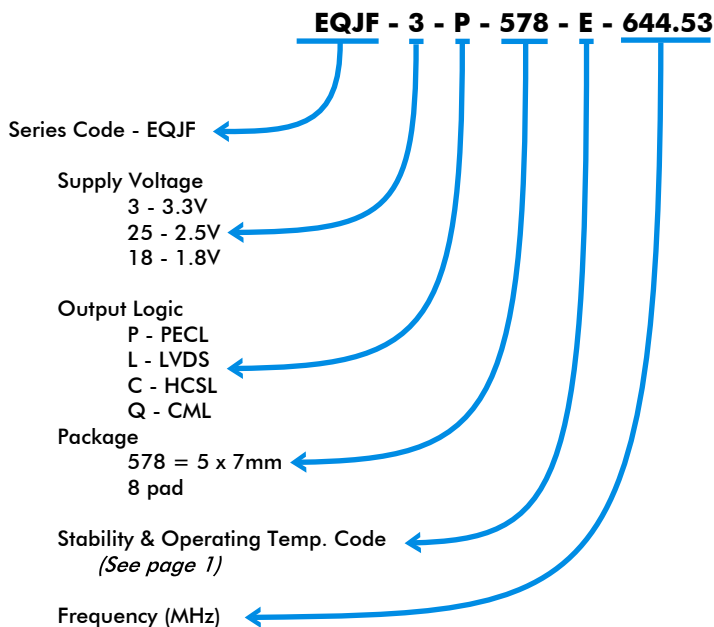
Phase Jitter, rms: (12kHz to 20MHz)	150fs typical, 300fs max.
Start-up Time:	5ms typical; 10ms max.
OE Control	
To Enable:	0.8% of V <sub>DD</sub> min. or no connection
To Disable:	0.2% of V <sub>DD</sub> max. (high impedance)
Output Enable Time:	2.5ms max.
Output Disable Time:	10μs max.

**ENVIRONMENTAL PERFORMANCE SPECIFICATION**

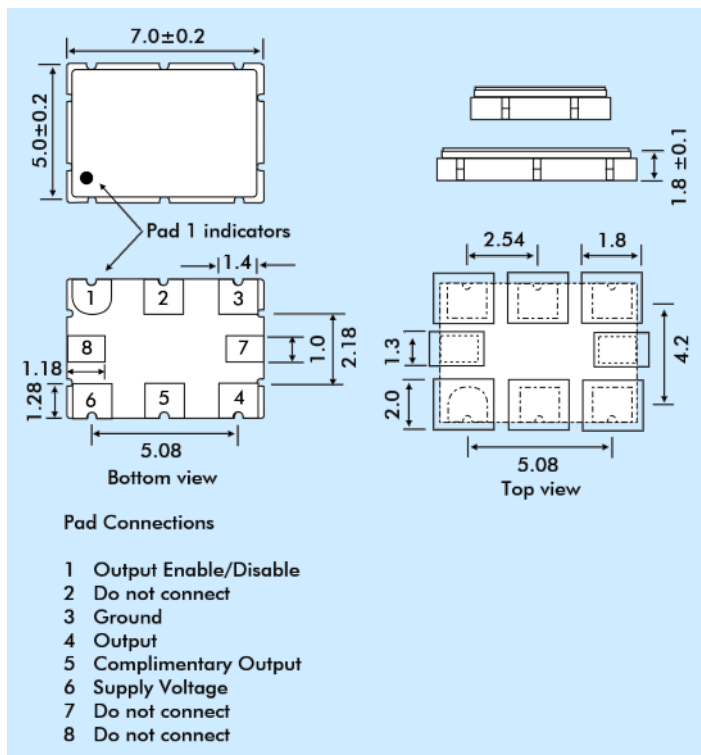
Green Requirement	ROHS Compliant, pB (lead) free in accordance with EU Directive 2002/95/EC 6/6 (2002/95/EC) and WEEE (2002/96/EC)
Second Level Interconnect	e4
Moisture Sensitivity Level	Level 1 (infinite) according to IPC/JEDEC J-STD-020D.1
Storage Temperature Range	-55° to +150°C
Humidity	85% RH, 85°C, 48 hours
Fine Leak	MIL-STD-883 Method 1014, condition A
Gross Leak	MIL-STD-883 Method 1014, condition C
Solderability	MIL-STD-202F Method 208E
Reflow	260°C for 10 seconds, twice
Vibration	MIL-STD-202F Method 204, 35G, 50 to 2000Hz
Shock	MIL-STD-202F Method 213B, test cond. E, 1000g ½ sine wave
Resistance to Solvent	MIL-STD-202F Method 215
Temperature Cycling	MIL-STD-883 Method 1010
ESD Rating	Human body model (HBM): 2000V min.
Pad Surface Finish	Gold (0.3µm to 1.0µm) over nickel (1.27µm to 8.89µm)
Weight of Device	0.045 gm typical

**PART NUMBERING**

EQJF oscillator part numbers are configured as per the following example: EQJF-3-P-578-E-644.53



**OUTLINE & DIMENSIONS**



**EQJF578 PHASE NOISE & PHASE JITTER** (Typical) VDD = +3.3V, Output Enable +3.3V

SSB Phase Noise Data (dBc/Hz Typical)	Frequency (MHz)	156.25	491.52	644.53	1480	2100
	10Hz offset	-39	-16	-31	-12	-18
	100Hz offset	-74	-48	-58	-54	-49
	1kHz offset	-99	-83	-86	-80	-77
	10kHz offset	-123	-112	-110	-104	-100
	100kHz offset	-139	-128	-126	-119	-116
	1MHz offset	-149	-140	-137	-130	-125
	5MHz offset	-156	-151	-150	-145	-141
	10MHz offset	-157	-153	-153	-148	-145
	20MHz offset	-157	-154	-153	-150	-147
Phase Jitter fs (12kHz~20MHz RMS)		159	155	151	147	163

**PHASE NOISE PLOT OF EQJF-3-P-578-E-150N-644.53** (Typical) VDD = +3.3V, Output Enable = +3.3V

