QPM-XXX
QPSK Modulator

## BOWEI INTEGRATED CIRCUITS CO.,LTD.

## Features

- Low conversion loss
-Frequency range: $5 \sim 1000 \mathrm{MHz}$
- High carrier rejection
- Low VSWR, 50 ohm impedance
- Hermetic DIP-22D package available
- Operating temperature range:- $55^{\circ} \mathrm{C} \sim+85^{\circ} \mathrm{C}$

Specifications(measured in a $50 \Omega$ system, $\mathrm{T}_{\mathrm{A}}=: 25^{\circ} \mathrm{C}$ )

| Model | Carrier <br> Frequency <br> $($ Max $)$ | IL <br> Max <br> $(\mathrm{dB})$ | Amplitude <br> Imbalance <br> Max <br> $(\mathrm{dB})$ | Phase <br> Imbalance <br> Max <br> $(\mathrm{deg})$ | Gain 1dB <br> Compression <br> Inputpower <br> Min <br> $(\mathrm{dBm})$ | VSWR <br> Max |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| QPM-01 | $9.5 \sim 11$ | 9.0 | 1.0 | $\pm 3.0$ | +2 | 1.50 |
| QPM-02 | $19.5 \sim 21.5$ | 9.0 | 1.0 | $\pm 4.5$ | +2 | 1.50 |
| QPM-03 | $20 \sim 40$ | 8.0 | 0.8 | $\pm 3.0$ | +2 | 1.50 |
| QPM-04 | $35 \sim 50$ | 8.0 | 0.8 | $\pm 3.0$ | +2 | 1.50 |
| QPM-05 | $40 \sim 75$ | 7.5 | 0.5 | $\pm 3.0$ | +2 | 1.50 |
| QPM-06 | $90 \sim 150$ | 7.5 | 0.5 | $\pm 3.0$ | +2 | 1.50 |
| QPM-07 | $190 \sim 210$ | 8.0 | 0.8 | $\pm 3.0$ | +2 | 1.50 |
| QPM-08 | $285 \sim 315$ | 8.0 | 0.8 | $\pm 3.0$ | +2 | 1.50 |
| QPM-09 | $869 \sim 894$ | 8.0 | 0.8 | $\pm 3.0$ | +2 | 1.50 |

## Notes

1.Generally this series is packaged in hermetic DIP-22D
2.Modulator with internal TTL driver is available within other package

## Application Notes:

1.Functional schematic shown as right
2.External driver and current limiting resistor (180~220 $\Omega$ ) are required to provide control current $\pm 20 \mathrm{~mA}$ Logic1: +20mA( Typ)
Logic0: $-20 \mathrm{~mA}($ Typ)


DIP-22D Bottom View

Pin connection: Truth Tabel and Phase
Pin1:RFout Pin2, 7:control Pin5: Rfin Others:GND

| Control | 0,0 | $0^{\circ}$ (ref.) |
| :--- | :--- | :--- |
|  | 0,1 | -90 |
|  | 1,1 | -180 |
|  | 1,0 | -270 |

QPM-06 Typical Performance
Amplitude balance vs. Frequency

$90^{\circ}$ Phase balance vs. Frequency


$270^{\circ}$ Phase balance vs. Frequency


