

**RXT-25-33****STAH60100BY4****STAH60100BY4 Class AB 2000~4000MHz****Oct. 17, 2025****Introduction**

This amplifier is designed with Innegration 28V GaN transistor.

**Demo and Transistor**

|                      |                       |
|----------------------|-----------------------|
| <b>Frequencyband</b> | : 2000~4000MHz        |
| <b>Application</b>   | : Multi Market        |
| <b>Configuration</b> | : Class AB            |
| <b>Test Signal</b>   | : CW                  |
| <b>Transistor</b>    | : STAH60100BY4        |
| <b>Date code</b>     | : 251517              |
| <b>PCB</b>           | : Rogers 4350B, 30mil |

The amplifier has been characterized under the following conditions:

- Network Analyzer plots for gain and IRL.
- The output power measurement using CW.

## RXT-25-33

## STA60100BY4

### Test Results

#### 1. Summary @ Bench1(Chengdu)

$V_{ds} = 28\text{ V}$ ,  $V_{gs} = -3.06\text{ V}$ ,  $I_{dq} = 200\text{ Ma}$  Signal mode: CW

**GMAH0742-20C9 with 2-4G isolator recommended as the driver**

| Freq(MHz) | Pin(dBm) | Pout(dBm) | Pout(W) | Ids(A) | Gain(dB) | Eff (%) | 2nd<br>(dBc) | 3rd<br>(dBc) |
|-----------|----------|-----------|---------|--------|----------|---------|--------------|--------------|
| 2000      | 42.0     | 49.92     | 98.2    | 6.27   | 7.9      | 55.9    | -19.0        | -19.3        |
| 2100      | 42.0     | 50.00     | 100.0   | 6.63   | 8.0      | 53.9    | -19.0        | -17.8        |
| 2200      | 42.0     | 50.02     | 100.5   | 6.74   | 8.0      | 53.2    | -22.2        | -20.2        |
| 2300      | 42.0     | 50.06     | 101.4   | 6.78   | 8.1      | 53.4    | -21.6        | -20.5        |
| 2400      | 42.0     | 50.33     | 107.9   | 7.52   | 8.3      | 51.2    | -22.1        | 20.2         |
| 2500      | 42.0     | 50.30     | 107.2   | 7.62   | 8.3      | 50.2    | -22.8        | -21.4        |
| 2600      | 42.0     | 50.43     | 110.4   | 7.58   | 8.4      | 52.0    | -20.9        | -23.6        |
| 2700      | 42.0     | 50.40     | 109.6   | 7.64   | 8.4      | 51.3    | -23.6        | -25.2        |
| 2800      | 42.0     | 50.05     | 101.2   | 7.36   | 8.1      | 49.1    | -21.1        | -24.6        |
| 2900      | 42.0     | 50.00     | 100.0   | 7.25   | 8.0      | 49.3    | -22.3        | -20.7        |
| 3000      | 42.0     | 50.10     | 102.3   | 7.09   | 8.1      | 51.5    | -25.5        | -18.4        |
| 3100      | 42.0     | 50.45     | 110.9   | 6.87   | 8.5      | 57.7    | -29.5        | -20.1        |
| 3200      | 42.0     | 50.70     | 117.5   | 6.91   | 8.7      | 60.7    | -19.8        | 24.2         |
| 3300      | 42.0     | 50.46     | 111.2   | 6.59   | 8.5      | 60.2    | -21.4        | -33.8        |
| 3400      | 42.0     | 50.00     | 100.0   | 5.91   | 8.0      | 60.4    | -20.5        | -39.7        |
| 3500      | 42.0     | 50.48     | 111.7   | 7.16   | 8.5      | 55.7    | -20.6        | -46.7        |
| 3600      | 42.0     | 50.66     | 116.4   | 7.31   | 8.7      | 56.9    | /            | /            |
| 3700      | 42.0     | 50.65     | 116.1   | 7.77   | 8.7      | 53.4    | /            | /            |
| 3800      | 42.0     | 50.88     | 122.5   | 7.98   | 8.9      | 54.8    | /            | /            |
| 3900      | 42.0     | 50.62     | 115.3   | 7.44   | 8.6      | 55.4    | /            | /            |
| 4000      | 42.0     | 50.55     | 113.5   | 6.91   | 8.6      | 58.7    | /            | /            |

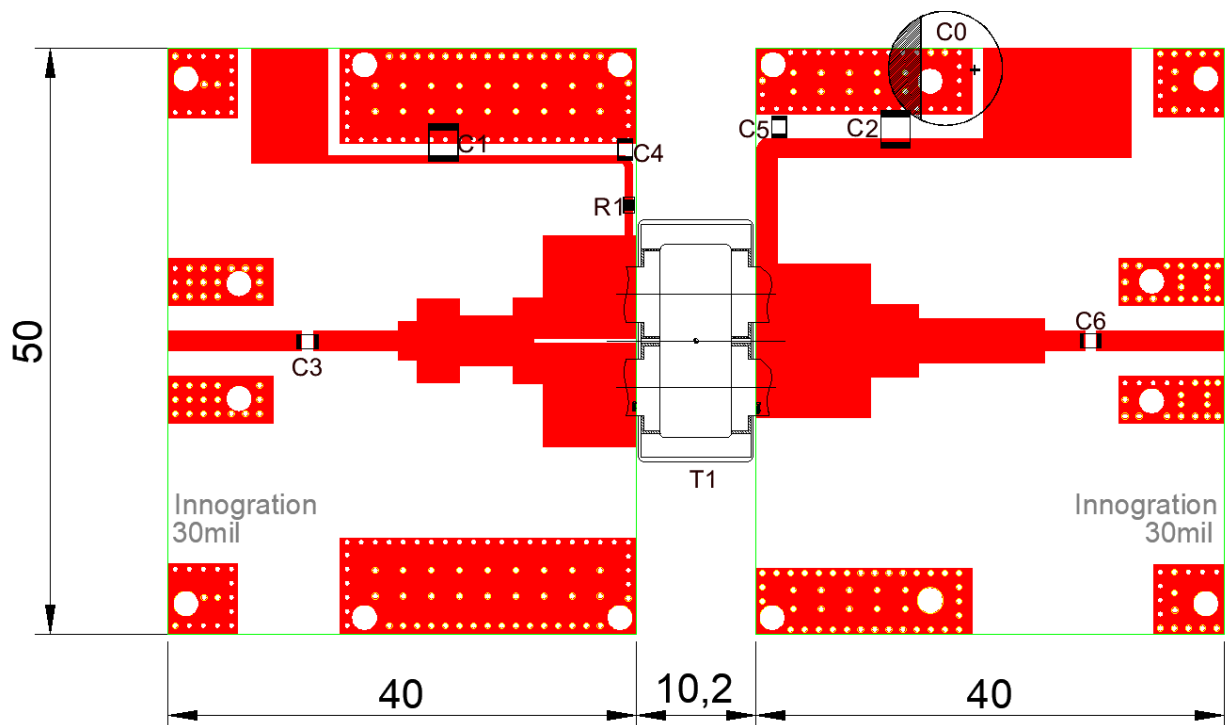
## 2. Network Results

### Test Condition

$V_{ds} = 28\text{ V}$ ,  $V_{gs} = -2.98\text{ V}$ ,  $I_{dq} = 500\text{ mA}$  input power = 0 dBm



### BOM of Test Circuit



**RXT-25-33**
**STAH60100BY4**

| Reference Designator | Description             | Quantity | Suggestion                                                   |
|----------------------|-------------------------|----------|--------------------------------------------------------------|
| C0                   | 470uF/100V              | 1        | Electrolytic Capacitor                                       |
| C1, C2               | 10uF/100V, 1210         | 2        |                                                              |
| C3                   | 3.3 pF, 0805/1111       | 1        | Beijing YuanLu<br>HongYuan Electronic<br>Technology CO., LTD |
| C4, C5               | 5.6 pF, 0805/1111       | 2        |                                                              |
| C6                   | 4.7 pF, 0709/1111       | 1        |                                                              |
| R1                   | 10 $\Omega$ , 0603/0805 | 1        | Murata                                                       |
| T1                   | STAH60100BY4            | 1        | Innogrations                                                 |
| PCB                  | Rogers 4350B, 30mil     |          | -                                                            |