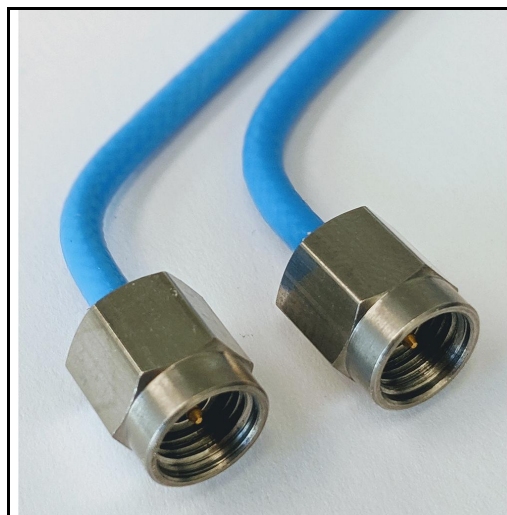


## Product Features

P1CA-29M29M-ST085-39 is an RF Cable that is part of P1dB's Tight-Flex™ cable assembly series. With a minimum bend radius of 0.2 inch, the cable allows bends at the connector end eliminating the need for a right angle connector. It is a 39 inch (1 meter) long , 2.92mm Male to 2.92mm Male cable assembly that utilizes ST085 Tight-Flex, Triple Shielded coax, which is 0.104 inches in diameter. The Tight-Flex™ cable assembly operates to 40 GHz with a max VSWR of 1.35:1.

Tight-Flex™ cable assemblies are a flexible version of RG405 semi-rigid and 085 conformable coax cables that meet RG405 dimensional and electrical specifications. Tight-Flex™ cable assemblies can operate up to 40 GHz, depending on the installed connectors. The advantage of Tight-Flex™ cables over other 085 flex cables are their triple shielding that add additional RF stability even during tight bends.



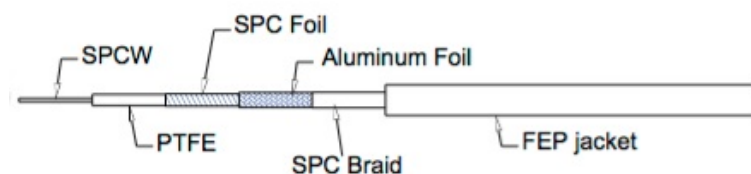
## Electrical Specification: T<sub>Ambient</sub> = 25° C

| Parameter       | Frequency Range | Units | Min | Typical | Max  | Notes |
|-----------------|-----------------|-------|-----|---------|------|-------|
| Frequency Range |                 | GHz   | DC  |         | 40.0 |       |

## Mechanical And Environmental Specifications:

| Parameter       | Description                 | Notes |
|-----------------|-----------------------------|-------|
| Connector 1     | 2.92mm Male                 |       |
| Connector 2     | 2.92mm Male                 |       |
| Coax Cable      | Tight-Flex, Triple Shielded |       |
| Cable Type      | ST085                       |       |
| Coax Diameter   | 0.104                       |       |
| Length          | 39.0                        |       |
| RoHS Compliance | Yes                         |       |

## Drawing



## Graph

| DIMENSIONS                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----|-------|--|----------|---------|--|--------|----|------|-----|------|----|------|-----|------|----|-----|----|------|----|-------|----|-------|----|-------|----|-------|-----|-----|----|-------|-----|-----|----|-------|-----|-----|----|-------|-----|-----|----|-------|-----|-----|----|-------|-----|-----|----|-------|-----|-----|----|
| Center Conductor Diameter             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (inch)                                | 0.0201                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (mm)                                  | 0.51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Dielectric Diameter                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (inch)                                | 0.0641                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (mm)                                  | 1.63                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Diameter Over Inner Foil              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (inch)                                | 0.0708                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (mm)                                  | 1.80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Diameter Over Outer Foil              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (inch)                                | 0.0748                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (mm)                                  | 1.90                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Diameter over Braid                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (inch)                                | 0.0885                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (mm)                                  | 2.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Jacket Diameter                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (inch)                                | 0.104                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (mm)                                  | 2.64                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| MATERIAL SPECIFICATIONS               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Jacket                                | FEP(BLUE)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Braid                                 | Round Silver Plated Copper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Outer Foil                            | Aluminium Tape                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Inner Foil                            | Silver Plated Copper Tape                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Dielectric                            | Solid PTFE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Center Conductor                      | Solid SPCW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| ELECTRICAL CHARACTERISTICS            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Impedance                             | 50±2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Capacitance (Nominal)                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (pF/ft)                               | 29.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| (pF/m)                                | 96.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Velocity of Propagation (%)           | 70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Cutt Off Frequency (GHz)              | 63                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Shielding Effectiveness               | > -110dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| Max. Attenuation<br>Max Power (Watts) | <table><tr><th colspan="2">Attenuation</th><th>Power</th></tr><tr><th></th><th>dB/100Ft</th><th>dB/100M</th><th></th></tr><tr><td>400MHz</td><td>14</td><td>45.9</td><td>240</td></tr><tr><td>1GHz</td><td>23</td><td>75.4</td><td>160</td></tr><tr><td>3GHz</td><td>39</td><td>128</td><td>80</td></tr><tr><td>5GHz</td><td>52</td><td>170.6</td><td>57</td></tr><tr><td>10GHz</td><td>80</td><td>262.4</td><td>44</td></tr><tr><td>18GHz</td><td>110</td><td>361</td><td>33</td></tr><tr><td>25GHz</td><td>131</td><td>430</td><td>29</td></tr><tr><td>30GHz</td><td>146</td><td>479</td><td>26</td></tr><tr><td>35GHz</td><td>160</td><td>525</td><td>23</td></tr><tr><td>40GHz</td><td>173</td><td>567</td><td>22</td></tr><tr><td>45GHz</td><td>183</td><td>600</td><td>20</td></tr><tr><td>50GHz</td><td>195</td><td>640</td><td>18</td></tr></table> | Attenuation |     | Power |  | dB/100Ft | dB/100M |  | 400MHz | 14 | 45.9 | 240 | 1GHz | 23 | 75.4 | 160 | 3GHz | 39 | 128 | 80 | 5GHz | 52 | 170.6 | 57 | 10GHz | 80 | 262.4 | 44 | 18GHz | 110 | 361 | 33 | 25GHz | 131 | 430 | 29 | 30GHz | 146 | 479 | 26 | 35GHz | 160 | 525 | 23 | 40GHz | 173 | 567 | 22 | 45GHz | 183 | 600 | 20 | 50GHz | 195 | 640 | 18 |
| Attenuation                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Power       |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
|                                       | dB/100Ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | dB/100M     |     |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 400MHz                                | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 45.9        | 240 |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 1GHz                                  | 23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 75.4        | 160 |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 3GHz                                  | 39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 128         | 80  |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 5GHz                                  | 52                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 170.6       | 57  |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 10GHz                                 | 80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 262.4       | 44  |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 18GHz                                 | 110                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 361         | 33  |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 25GHz                                 | 131                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 430         | 29  |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 30GHz                                 | 146                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 479         | 26  |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 35GHz                                 | 160                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 525         | 23  |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 40GHz                                 | 173                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 567         | 22  |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 45GHz                                 | 183                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 600         | 20  |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |
| 50GHz                                 | 195                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 640         | 18  |       |  |          |         |  |        |    |      |     |      |    |      |     |      |    |     |    |      |    |       |    |       |    |       |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |       |     |     |    |

## Product Notes