# GLF4010, GLF4012

## Ultra-low $I_Q$, Low Output Voltage Droop, 6 A Symmetrical Power Mux

**Product Specification**

## DESCRIPTION

The GLF4010 and GLF4012 are ultra-low $I_Q$ integrated power multiplexer IC with dual independent power switches connected to a single output pin to enable seamless transition between two input sources. The GLF4010 and GLF4012 feature symmetrical power FET characteristics. Channel 1 (VIN1) and channel 2 (VIN2) provide ultra-low conduction resistance to support 6 A continuous current capability. It is an ideal solution for a power system with an internal back up power source.

The GLF4010 and GLF4012 provide an automatic selection mode, a manual selection mode and VIN1 preference mode. The switching of these three modes is executed by combining the S1 and S2 pin settings. The S1 input pin has an internal threshold voltage to offer a preference to select the channel 1 (VIN1) power source. In the automatic input selection mode, the GLF4010 and GLF4012 automatically select a higher input voltage source between two input power sources.

The GLF4010 and GLF4012 prevent cross conduction current between two input sources. When VOUT is higher than VIN, the GLF4012 prevents the reverse current from the output to the input, no matter which input supply is applied.

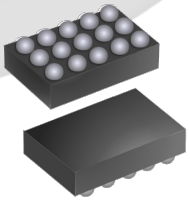
## FEATURES

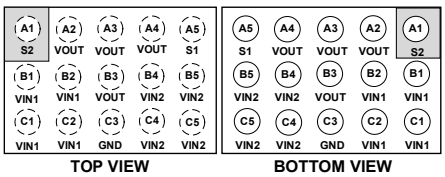
- Two-Input and Single-Output Power Multiplexer IC
- Auto & Manual & VIN1 Preference Selection Mode
- Wide Input Range: 1.5 V to 5.5 V
- Low $R_{ON}$
  - 15 mΩ Typ at 5.5 $V_{IN}$
- $I_{OUT}$ Max: 6 A Per Channel, VIN1 and VIN2
- Ultra-low Quiescent Current
  - $I_Q$ : 1.4 μA Typ at 5.5 $V_{IN}$
- Low Shutdown Current
  - $I_{SD}$ : 1.0 μA Typ at 5.5 $V_{IN}$
- Reverse Current Blocking Protection: Only GLF4012
- Thermal Shutdown Protection
- Wide Operating Temperature Range: - 40 °C to 105 °C

## APPLICATIONS

- Smart Door Lock
- Subsystem with Backup Power
- Multi-channel Power Management
- Communication / Network System

## PACKAGE



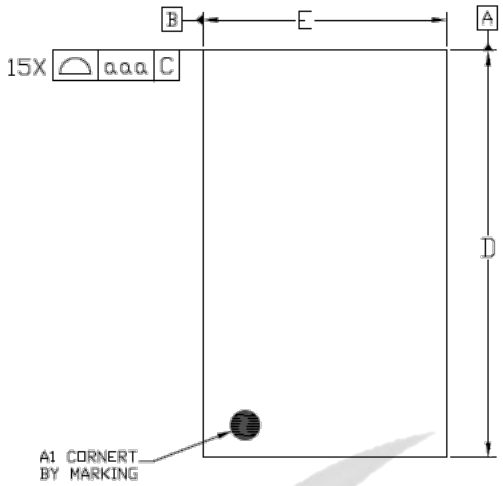



**1.17 mm x 1.97 mm x 0.55 mm WLCSP**

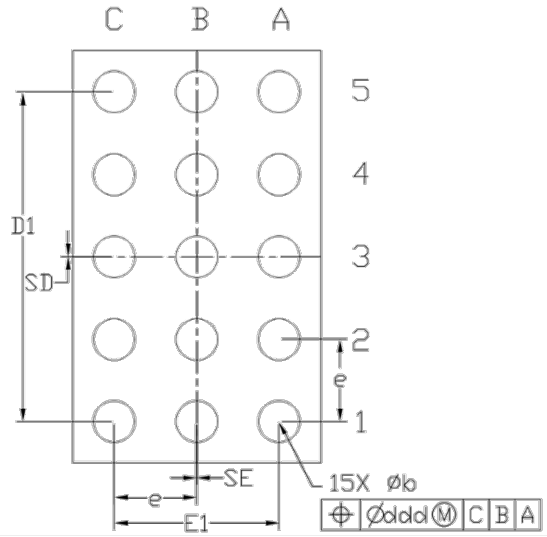
## PRODUCT INFORMATION

| Part Number | Top Mark | $R_{ON}$ (Typ.) | $I_{OUT}$ (Max) | Reverse Current Blocking | Output Discharge (Typ.) | Package | DS Status |
|---|---|---|---|---|---|---|---|
| GLF4010-SA7 | IA | 15 mΩ | 6 A | NA | NA | 1.17 mm x 1.97 mm x 0.55 mm WLCSP | Preliminary |
| GLF4011-SA7 | IB | | | YES | 100 Ω | | On Request |
| GLF4012-SA7 | IC | | | YES | NA | | Product |

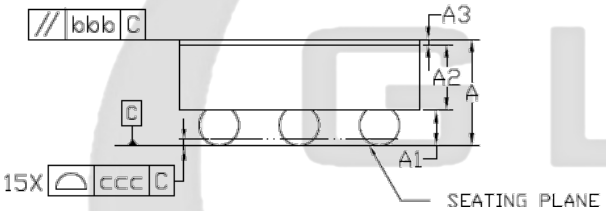
## PACKAGE OUTLINE



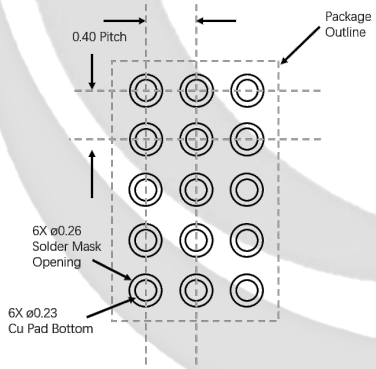

TOP VIEW




BOTTOM VIEW




## Recommended Footprint



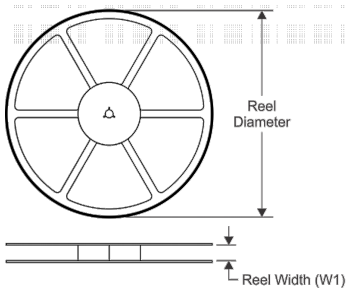

| REF. | Dimensions Ref. | | |
|---|---|---|---|
| | Min. | Nom. | Max. |
| A | 0.500 | 0.550 | 0.600 |
| A1 | 0.149 | 0.175 | 0.201 |
| A2 | 0.325 | 0.350 | 0.375 |
| A3 | 0.020 | 0.025 | 0.030 |
| D | 1.955 | 1.970 | 1.985 |
| E | 1.155 | 1.170 | 1.185 |
| D1 | 1.550 | 1.600 | 1.650 |
| E1 | 0.750 | 0.800 | 0.850 |
| b | 0.197 | 0.232 | 0.267 |
| e | 0.400 BSC | | |
| SD | 0.000 BSC | | |
| SE | 0.000 BSC | | |
| Tol. of Form & Position | | | |
| aaa | 0.10 | | |
| bbb | 0.10 | | |
| ccc | 0.05 | | |
| ddd | 0.05 | | |

Notes

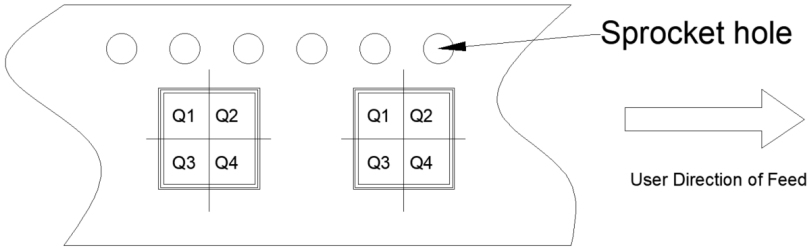
1. ALL DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGRESS)
2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1994.
3. A3: BACKSIDE LAMINATION

# TAPE AND REEL INFORMATION

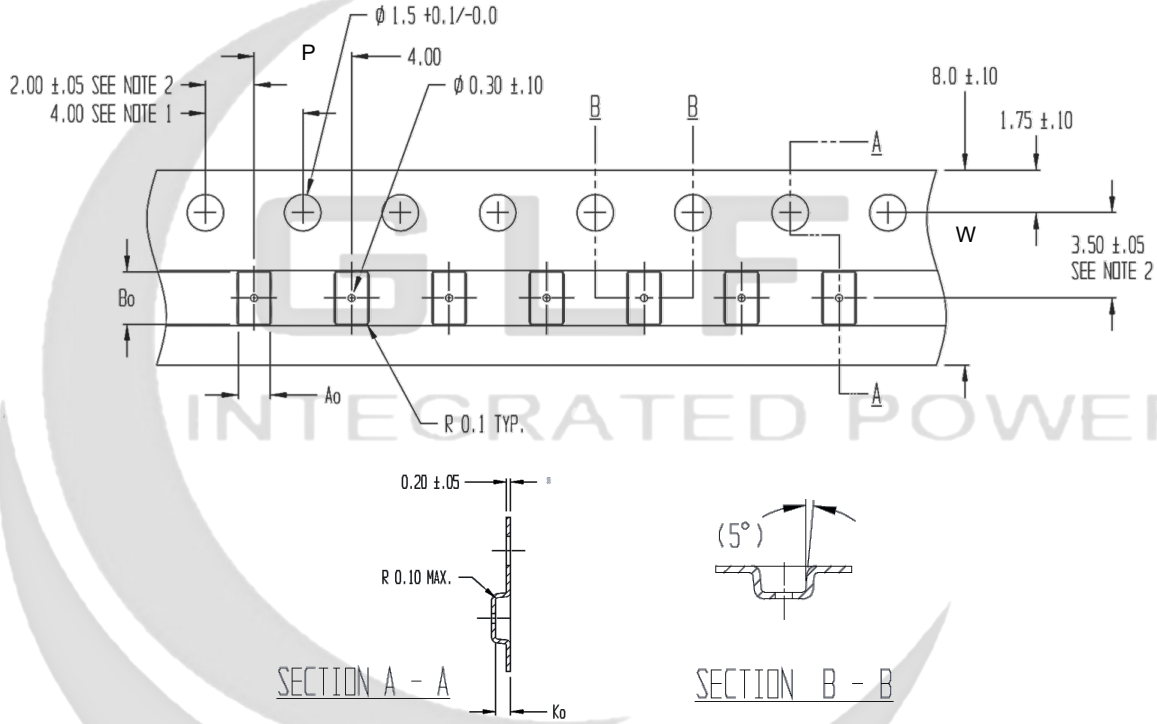
## REEL DIMENSIONS




## QUADRANT ASSIGNMENTS PIN 1 ORIENTATION TAPE




## TAPE DIMENSIONS




| Device | Package | Pins | SPQ | Reel Diameter (mm) | Reel Width W1 | A0 | B0 | K0 | P | W | Pin1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GLF4010-SA7 | WLCSP | 15 | 3000 | 180 | 9 | 1.32 | 2.15 | 0.77 | 4 | 8 | Q2 |
| GLF4012-SA7 | WLCSP | 15 | 3000 | 180 | 9 | 1.32 | 2.15 | 0.77 | 4 | 8 | Q2 |

Remark:

A0: Dimension designed to accommodate the component width

B0: Dimension designed to accommodate the component length

K0: Dimension designed to accommodate the component thickness

W: Overall width of the carrier tape

P: Pitch between successive cavity centers