

## Company Intro

- GLF Integrated Power focuses on providing ultra low power solutions especially improving power efficiency as well as featuring various protections.

## Products

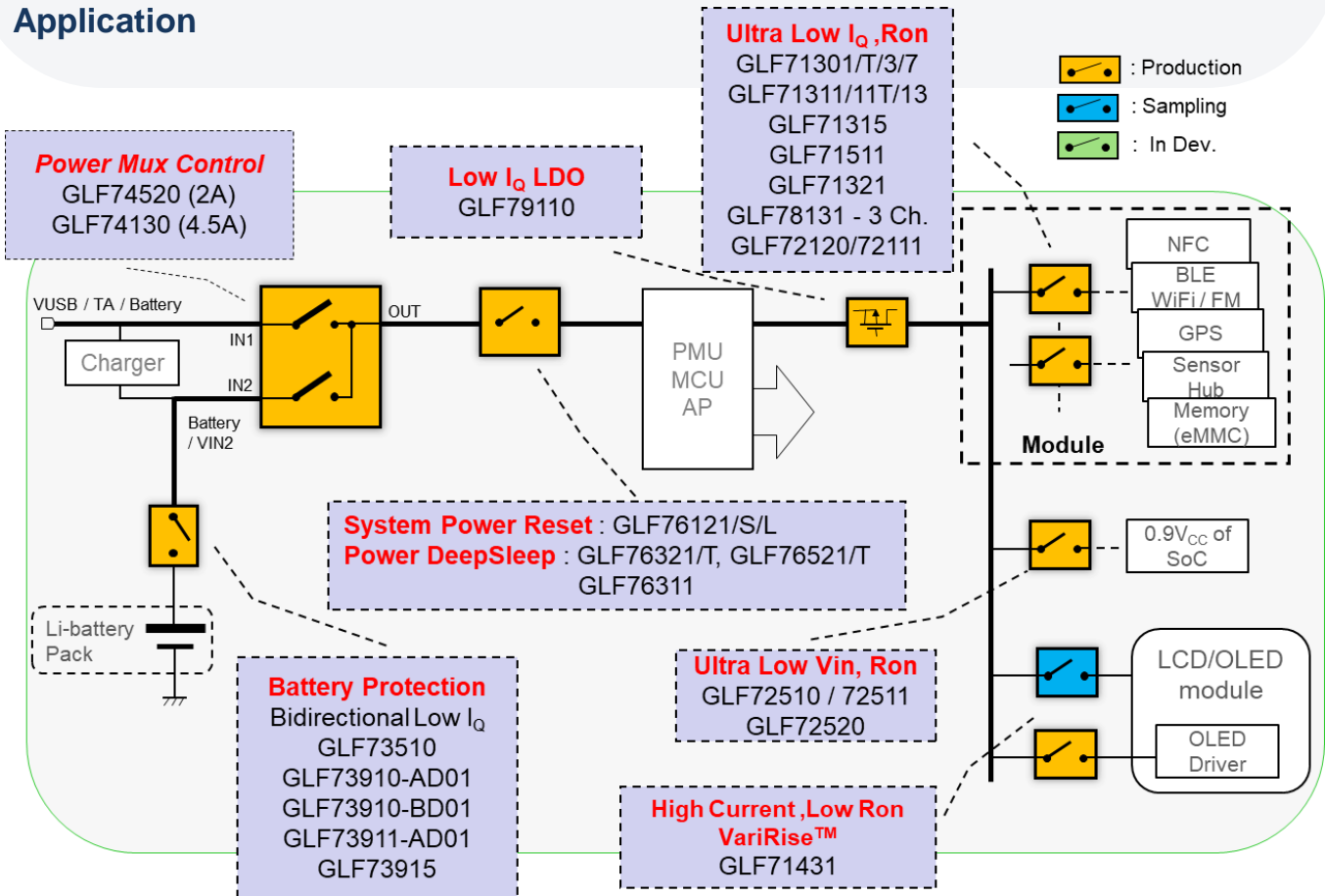
- Nano-Current Consumed Load Switches
- Power Mux
- Battery Protection ICs for TWS & IoT
- Power DeepSleep and Reset ICs
- LDO



## GLF $I_Q$ Smart™ Advantages

- Ultra Low Leakage at Operation & Stand-by
- Best in Class  $R_{ON}$
- Ultra-small Chip Scale Package

## Application



## Efficient Protected Power: Breathing Life into the IoT

### Nano-Current Consumed Load Switches

Product Type	Product Name	V <sub>IN</sub> Min. Voltage [V]	V <sub>IN</sub> Max. Voltage [V]	I <sub>OUT</sub> Rating [A]	R <sub>ON</sub> Typ. @ V <sub>N</sub> Max [mΩ]	I <sub>O</sub> Typ. @ V <sub>N</sub> Max [nA]	I <sub>SD</sub> Typ. @ V <sub>N</sub> Max [nA]	Slew Rate Control	Rise Time t <sub>r</sub> Typ. [μs]	EN Active	Output Discharge [Ω]	Reverse Current Blocking	ESD [kV]	Operating Temperature [°C]	WLCSP Package Size
Nano-Current Consumed Power Switch	GLF71300	1.1	5.5	1.5	34	1	19	√	430	H	NA	HBM : 6 CDM : 2	-40 ~ 85	0.77 x 0.77 x 0.46	
	GLF71301					1				H	85				
	GLF71302					0.54 uA				L	NA				
	GLF71303					0.54 uA				L	85				
	GLF71307					1				H	85				
	GLF71311									H	85				
	GLF71313			2	31	7	28	√	335	L	85				
	GLF71315				H	85									
	GLF71511			2	25	7	28	√	2.2 ms	H	85				
	GLF71320			4	15	3	50	√	400	L	85				
	GLF71321			4	15	3	50	√	400	H	85				
	GLF71325			4	18 @ 3.3V	1 @ 3.3V	16 @ 3.3V	√	2.2 ms	H	85				
GLF71301T	1.5	34	1	19	√	430	H	85							
GLF71311T	2	31	7	28	√	335	H	85							
True Reverse Current Blocking	GLF72101	1.5	5.5	2	37	0.45 uA	20	√	570	H	85	√	-40 ~ 85	0.77 x 0.77 x 0.46	
	GLF72111			3	29	1.4 uA	24	√	1.3 ms	H	85	√		0.97 x 0.97 x 0.55	
	GLF72120			4	14	1.3 uA	40	√	730	H	NA	√		1.27 x 1.67 x 0.55	
Prog. Long t <sub>e</sub> of V <sub>OUT</sub>	GLF71431	1.1	3.6	7	10	5	55	Prog.	150~3.4 ms	H	83		-40 ~ 85	1.27 x 1.67 x 0.55	
3 Channels	GLF78131/T			1.5	60	6	23	√	500	H	235			1.27 x 1.67 x 0.55/T0.35	
Low V <sub>N</sub> Range with NFET	GLF72510			0.8	2	27	3.2 uA	5	√	460	H	NA			-40 ~ 85
	GLF72511		85									0.97 x 0.97 x 0.55			
	GLF72520	4	10		3.0 uA	6.5	√	780	H	NA		0.97 x 1.47 x 0.55			

### Power Mux

Product Type	Product Name	V <sub>IN</sub> Min. Voltage [V]	V <sub>IN</sub> Max. Voltage [V]	I <sub>OUT</sub> Rating [A]	R <sub>ON</sub> Typ. @ V <sub>N</sub> Max [mΩ]	I <sub>O</sub> Typ. @ V <sub>N</sub> Max [nA]	I <sub>SD</sub> Typ. @ V <sub>N</sub> Max [nA]	Slew Rate Control	Rise Time t <sub>r</sub> Typ. [μs]	V <sub>N</sub> Auto Select	V <sub>N</sub> Manual Selection	Output Discharge [Ω]	Reverse Current Blocking	Operating Temperature [°C]	WLCSP Package Size
Power Mux	GLF74520	1.5	5.5	2	35	4	20	√	350	√	√	NA	√	-40 ~ 85	0.97 x 1.47 x 0.55
	GLF74130			4.5	20	4	50	√	790	√	√	NA	√		1.27 x 1.67 x 0.55

### Battery Protection

Product Type	Product Name	V <sub>IN</sub> Min. Voltage To Charge [V]	V <sub>IN</sub> Max. Voltage [V]	I <sub>OUT</sub> Rating [A]	R <sub>ON</sub> Typ. @ 4.2 V [mΩ]	R <sub>ON</sub> Typ. @ 3.6 V [mΩ]	I <sub>O</sub> Typ. @ 3.6 V [uA]	I <sub>SD</sub> Typ. @ 2.5 V [nA]	Over Charge Protection V <sub>OC</sub> [V]	Over Discharge Protection V <sub>OD</sub> [V]	Short Circuit Protection I <sub>SC</sub> [A]	ON Voltage to V <sub>OUT</sub> , V <sub>ON</sub> [V]	Slew Rate Control	Operating Temperature [°C]	WLCSP Package Size
Battery Protection	GLF73510	0.4	5.5	2	28	30	0.51	3	NA	3.05	NA	3.5	√	-40 ~ 85	0.97 x 0.97 x 0.55
	GLF73710			1.5	30	31	0.65	35	NA	2.88	0.55	3.6			
	GLF73810			1.5	33	36	0.68	390	4.35	2.88	0.6 Retry	3.6			
	GLF73910-AD01			1.5	34	36	0.72	70	4.35	2.8	0.6	3.6			
	GLF73910-AD01C			1.5	34	36	0.72	70	4.35	2.8	0.6	3.6			
	GLF73910-BD01			1.5	34	36	0.72	70	4.50	2.8	0.6	3.6			
	GLF73911-AD01			1.5	34	36	0.72	35	4.35*	2.8	0.6	3.6			

Note) \*: Monitor V<sub>OUT</sub> to release V<sub>OC</sub>.

Product Type	Product Name	I <sub>OUT</sub> Rating [A]	R <sub>ON</sub> Typ. @ 4.2 V [mΩ]	R <sub>ON</sub> Typ. @ 3.6 V [mΩ]	I <sub>O</sub> Typ. @ 3.6 V [uA]	I <sub>SD</sub> Typ. @ 2.5 V [nA]	Over Charge Protection V <sub>OC</sub> [V]	Over Discharge Protection V <sub>OD</sub> [V]	Over Charge Current I <sub>CC</sub> [A]	Short Circuit Protection I <sub>SC</sub> [A]	ON Voltage to V <sub>OUT</sub> , V <sub>ON</sub> [V]	Shipping Mode	V <sub>BAT</sub> Min Charging [V]	Operating Temperature [°C]	WLCSP Package Size
Battery Protection with Shipping Mode	GLF73915-AD12C	1.5	53	57	0.94	7	4.35	2.8	0.35	0.5	3.6	√	0	-40 ~ 85	0.97 x 0.97 x 0.55
	GLF73915-BD12C	1.5	53	57	0.94	7	4.50	2.8	0.35	0.5	3.6				

### Power DeepSleep

Product Type	Product Name	V <sub>IN</sub> Min. Voltage [V]	V <sub>IN</sub> Max. Voltage [V]	I <sub>OUT</sub> Rating [A]	R <sub>ON</sub> Typ. @ 3.6 V [mΩ]	I <sub>O</sub> Typ. @ 3.6 V [nA]	I <sub>SD</sub> Typ. @ 3.6 V [nA]	Output Discharge [Ω]	Slew Rate Control	Rise Time t <sub>r</sub> Typ [ms]	On Delay Time by SRO, t <sub>ON</sub> [s]	On Delay Time by WAKE, t <sub>ON</sub> [ms]	Off Delay Time, t <sub>SD</sub> -by [s]	Off Delay Time, t <sub>SD</sub> -by [s]	Operating Temperature [°C]	WLCSP Package Size
Power Deep Sleep	GLF76311	2.5	5.5	2	34	6	7	85	√	1	3	NA	6	-40 ~ 85	0.97 x 0.97 x 0.55	
	GLF76321 / T	1.5		2	31	3	7	85	√	1	1.3	0.8	7		0.97 x 1.47 x 0.55/0.35	
	GLF76521 / T	1.8		2	31	3	7	85	√	1	0.3	0.3	1.8			

### Power Reset

Product Type	Product Name	V <sub>IN</sub> Min. Voltage [V]	V <sub>IN</sub> Max. Voltage [V]	I <sub>OUT</sub> Rating [A]	R <sub>ON</sub> Typ. @ 3.6 V [mΩ]	I <sub>O</sub> Typ. @ 3.6 V [nA]	I <sub>SD</sub> Typ. @ 3.6 V [nA]	Output Discharge [Ω]	Rise Time t <sub>r</sub> Typ [ms]	On Delay Time by SRO, t <sub>ON</sub> [s]	On Delay Time by WAKE, t <sub>ON</sub> [ms]	Off Delay Time, t <sub>SD</sub> -by [ms]	Reset Duration, t <sub>RES</sub> [ms]	Operating Temperature [°C]	WLCSP Package Size
Power Reset	GLF76121	2.5	5.5	2	34	3	7	85	1	1.4	0.9	5.8	360	-40 ~ 85	0.97 x 1.47 x 0.55
	GLF76121S			2	34	3	7	85	1	1.4	0.9	3.0	360		
	GLF76121L			2	34	3	7	85	1	1.4	0.9	11.6	700		

### LDO

Product Type	Product Name	V <sub>IN</sub> Max. Voltage [V]	V <sub>OUT</sub> Voltage [V]	V <sub>OUT</sub> Accuracy [%]	Line Regulation [%/V]	Load Regulation [%/mA]	I <sub>OUT</sub> Rating [mA]	Dropout [V]	Short Circuit [mA]	I <sub>O</sub> Typ. @ No load [uA]	I <sub>SD</sub> Typ. [nA]	EN Pin	ESD [kV]	Operating Temperature [°C]	WLCSP Package Size
Linear Regulator	GLF79110-18	5.5	1.8	2.5	0.063	0.002	150	52	250	0.8	4	H	HBM : 6 CDM : 2	-40 ~ 85	0.97 x 0.97 x 0.55
	GLF79110-28		2.8	2.5	0.02	0.002	150	60	250	0.8	4	H			
	GLF79110-30		3.0	2.5	0.02	0.002	150	62	250	0.8	4	H			