PQ1DX095MZPQ Datasheet

DiGi Electronics Part Number	PQ1DX095MZPQ-DG
Manufacturer	Sharp Microelectronics
Manufacturer Product Number	PQ1DX095MZPQ
Description	SENSOR OPT
Detailed Description	Optical Sensor

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Manufacturer Product Number:	Manufacturer:
PQ1DX095MZPQ	Sharp Microelectronics
Series:	Product Status:
*	Obsolete

Environmental & Export classification

Moisture Sensitivity Level (MSL):	ECCN:
1 (Unlimited)	EAR99
HTSUS:	
8541.49.8000	

RoHS

■Low Power-Loss Voltage Regulators

●TO-220 Type

(Ta = 25°C)

Model No.	Features	Absolute maximum ratings				Electrical characteristics			Built-in functions					Lead forming available	Package	
		Output current Io (A)	Input voltage Vin (V)	Power dissipation (W) Pd*1	Power dissipation (W) Pd*2	Output voltage Vo*3 (V) TYP.	Output voltage precision (%)	Dropout voltage VI-O*5 (V)	Overheat protection	Overcurrent protection	ON/OFF control	Low dissipation current at OFF state	Variable output voltage			Package shape type*7
PQxxxRDA1SZH series	ASO protection function, low dissipation current at OFF state (Iqs: 5 µA (MAX.))	1	24	1.4	15	3.3, 5, 9, 12	±3	0.5	○	○	○	○			TO-220	A
PQxxxRDA2SZH series		2	20			3.3, 5, 9, 12	±2.5	1.0	○	○	○	○				A
PQ30RV11J00H	Variable output voltage	1	35	1.5	15	1.5 to 30	±2*4	0.5	○	○	△*6		○	○		B
PQ30RV21J00H		2			18				○	○	△*6		○	○		B
PQ30RV31J00H		3		2	20				○	○	△*6		○	○		B

*1 At self-cooling
*2 With infinite heat sink attached
*3 The xxx in the model No. refer to the output voltage values of the model (e.g. 050 for 5 V, 120 for 12 V, 015 for 1.5 V).
*4 Reference voltage precision
*5 Current ratings are defined individually.
*6 △ : Available by adding circuit
*7 Refer to page 35

■Surface Mount Type Low Power-Loss Voltage Regulators

●SOT-89 Type

(Ta = 25°C)

Model No.	Features	Absolute maximum ratings			Electrical characteristics			Built-in functions					Package
		Output current Io (A)	Input voltage Vin (V)	Power dissipation Pd*1 (W)	Output voltage Vo*2 (V) TYP.	Output voltage precision (%)	Dropout voltage VI-O*3 (V)	Overheat protection	Overcurrent protection	ON/OFF control	Low dissipation current at OFF state	Variable output voltage	
PQ1LAxx5MSPQ	Compact, high radiation package, ceramic capacitor compatible	0.5	15	0.9	1.2, 1.5, 1.8, 2.5, 3.3, 5.0	±2.0	0.7	○	○	○	○		SOT-89
PQ1LAX95MSPQ	Ceramic capacitor compatible, variable output voltage				1.5 to 9.0	±2.0*4		○	○	○	○	○	

*1 When mounted on a board
*2 The xx in the model No. refer to the output voltage values of the model (e.g. 25 for 2.5 V, 50 for 5.0 V).
*3 Current ratings are defined individually.
*4 Reference voltage precision

SURFACE MOUNT TYPE LOW POWER-LOSS VOLTAGE REGULATORS

RoHS

●SC-63 Type (1) Output Voltage Fixed Type

(Ta = 25°C)

Model No.	Features	Absolute maximum ratings: Output current Io (A) 0.5	1	1.5	Input voltage Vin (V)	Power dissipation Pd*1 (W)	Electrical characteristics: Output voltage Vo*2 (V) TYP.	Output voltage precision (%)	Dropout voltage VI-O*3 (V)	Built-in functions: Overheat protection	Overcurrent protection	ON/OFF control	Low dissipation current at OFF state	Variable output voltage	Taped package	Package	Package shape type*4
PQxxxDNA1ZPH series	Ceramic capacitor compatible, ASO protection function, low dissipation current at OFF state (Iqs: 5 µA (MAX.)), solder dip compatible lead shape		○		24	8	3.3, 5, 9, 12	±2.5	0.5	○	○	○	○	–	○	SC-63	F
PQxxxENA1ZPH series	Minimum operating input voltage: 2.35 V, ceramic capacitor compatible, solder dip compatible lead shape		○		10	8	1.5, 1.8, 2.5, 3.3	±2.0	0.3	○	○	○	○	–	○		F
PQxxxENB1ZPH series			○			5	1.2, 1.5, 1.8, 2.5, 3.3			○	○	○	○	–	○		F
PQxxxENAHZPH series				○		8	1.5, 1.8, 2.5, 3.3		0.9	○	○	○	○	–	○		F
PQxxxGN01ZPH series	Minimum operating input voltage: 1.7 V (Dual power supply type), ceramic capacitor compatible, solder dip compatible lead shape		○		5.5		1.0, 1.2	±30 mV	–	○	○			–	○		F
PQxxxGN1HZPH series				○						○	○			–	○		F

*1 With infinite heat sink attached
*2 The xxx in the model No. refer to the output voltage values of the model (e.g. 033 for 3.3 V, 050 for 5 V, 120 for 12 V).
*3 Current ratings are defined individually.
*4 Refer to page 35

●SC-63 Type (2) Output Voltage Variable Type

(Ta = 25°C)

Model No.	Features	Absolute maximum ratings: Output current Io (A) 0.5	1	1.5	Input voltage Vin (V)	Power dissipation Pd*1 (W)	Electrical characteristics: Output voltage Vo (V) TYP.	Output voltage precision (%)	Dropout voltage VI-O*3 (V)	Built-in functions: Overheat protection	Overcurrent protection	ON/OFF control	Low dissipation current at OFF state	Variable output voltage	Taped package	Package	Package shape type*4
PQ070XNA1ZPH	Minimum operating input voltage: 2.35 V, ceramic capacitor compatible, solder dip compatible lead shape		○		10	8	1.5 to 7	±2.0*2	0.5	○	○	○	○	○	○	SC-63	F
PQ070XNAHZPH				○					0.9	○	○	○	○	○	○		F
PQ070XNA2ZPH				○ (2 A)					0.5	○	○	○	○	○	○		F
PQ070XNB1ZPH			○			5	1.2 to 7		0.3	○	○	○	○	○	○		F
PQ035ZN01ZPH	Reference voltage (Vref): 0.6 V, minimum operating input voltage: 1.7 V (Dual power supply type), ceramic capacitor compatible, solder dip compatible lead shape		○		5.5	8	0.8 to 3.5	±30 mV	–	○	○			○	○		F
PQ035ZN1HZPH				○					–	○	○			○	○		F
PQ200WNA1ZPH	Minimum operating input voltage: 3.5 V, ASO protection function, low dissipation current at OFF state (Iqs: 5 µA (MAX.)), ceramic capacitor compatible, solder dip compatible lead shape		○		24		3.0 to 20	±2.5*2	0.5	○	○	○	○	○	○		F
PQ200WN3MZPH	Minimum operating input voltage: 5.5 V, low dissipation current at OFF state (Iqs: 5 µA (MAX.)), ceramic capacitor compatible, current limit: 800 mA	○ (0.3)				6.8	5.0 to 20			○	○	○	○	○	○		F

*1 With infinite heat sink attached
*2 Reference voltage precision
*3 Current ratings are defined individually.
*4 Refer to page 35

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●SOP-8 Type

(Ta = 25°C)

Model No.	Features	Absolute maximum ratings			Electrical characteristics		Built-in functions		Taped package	Package
		Output current Io (A)	Input voltage Vin (V)	Power dissipation Pd*1 (W)	Output voltage Vo (V) TYP.	Output voltage precision*2 (mV)	Overheat protection	Overcurrent protection		
PQ1DX095MZPQ	Built-in sink source function (For DDR II memory)	±0.8	6	0.6	V_{DD} x 1/2 (V_{DDQ}: 1.5 V (MIN.))	±25	○	○	○	SOP-8

*1 When mounted on a board
*2 Reference voltage precision

■Surface Mount Type Chopper Regulators (DC-DC Converters)

(Ta = 25°C)

Model No.	Features	Absolute maximum ratings		Electrical characteristics					Package	
		Switching current Isw (A)	Power dissipation Pd*1 (W)	Input voltage range Vin (V)	Output voltage*2 Vo (V)	Output type	Oscillation frequency fo (Hz) TYP.	Output saturation voltage Vsat (V) TYP.		Outline shape type*4
PQ6CU12X2APQ	• High switching voltage: 40 V (MAX.) • For tuner power supply • Variable oscillation frequency • Ceramic capacitor compatible	0.25	0.35	3.0 to 5.5	up to 36	Step-up	300 k to 800 k	Ron TYP. 1.7Ω	SOT-23-6W	
PQ1CN38M2ZPH	• PWM chopper regulator (high oscillation frequency) • Output ON/OFF control function • Overcurrent/overheat protection circuits • For light load	0.8	8	4.5 to 40	V_{REF}*3 to 35 (step-down type)/ –V_{REF} to –30 (inverting type)	Step-down	300 k	0.9	SC-63	F
PQ1CN41H2ZPH	• PWM chopper regulator (high oscillation frequency) • Overcurrent/overheat protection circuits	1.5	8			Step-down	300 k	0.9		F
PQ1CX41H2ZPQ	• Bootstrap system for high efficiency (Efficiency 90% (TYP.)) • Low voltage output: 0.8 V (MIN.) • Ceramic capacitor compatible	1.5	0.8 When mounted on board	4.75 to 27	0.8 to 20	Step-down	400 k	RDSon TYP. 0.45Ω	SOP-8	
PQ1CX53H2MPQ	• Bootstrap system for high efficiency (Efficiency 89% (TYP.)) • Low voltage output: 0.8 V (MIN.) • Ceramic capacitor compatible	3.5	2 When mounted on board	4.75 to 27	0.8 to 16	Step-down	400 k	RDSon TYP. 0.15Ω	USB-8	
PQ1CX61H1ZPQ	• Bootstrap system for high efficiency (Efficiency 88% (TYP.)) • Low voltage output: 1.0 V (MIN.) • Ceramic capacitor compatible	1.5	0.8 When mounted on board	4.75 to 28	1.0 to 18.9	Step-down	900 k	RDSon TYP. 0.55Ω	SOP-8	

*1 With infinite heat sink attached or when mounted on a board listed in the specification sheets.
*2 Output variable range (step-down/inversion).
*3 V_{REF} nearly equal to 1.26 V
*4 Refer to page 35

RoHS

■Chopper Regulators (DC-DC Converters)

●TO-220 Type

(Ta = 25°C)

Model No.	Features	Absolute maximum ratings		Electrical characteristics					Package	
		Switching current Isw (A)	Power dissipation Pd*1 (W)	Input voltage range Vin (V)	Output voltage Vo*2 (V)	Output type	Oscillation frequency fo (kHz) TYP.	Output saturation voltage Vsat (V) TYP.		Outline shape type*5
PQ1CG21H2FZH	• PWM chopper regulator • Built-in overcurrent/overheat protection circuits • Output ON/OFF control function	1.5*3	14	40	VREF*4 to 35 (step-down type)/ –VREF*4 to –30 (inverting type)	Step-down	100	1.0	TO-220	E
PQ1CG41H2FZH	• PWM chopper regulator (high oscillation frequency) • Built-in overcurrent/overheat protection circuits • Output ON/OFF control function						300	1.0		E
PQ1CG2032FZH	• PWM chopper regulator • Built-in overcurrent/overheat protection circuits • Output ON/OFF control function	3.5*3					70	1.4		E
PQ1CG3032FZH	• PWM chopper regulator (high oscillation frequency) • Built-in overcurrent/overheat protection circuits • Output ON/OFF control function						150			E

*1 With infinite heat sink attached
*2 Output voltage variable range
*3 Peak current
*4 VREF nearly equal to 1.26 V (TYP.)
*5 Refer to page 35

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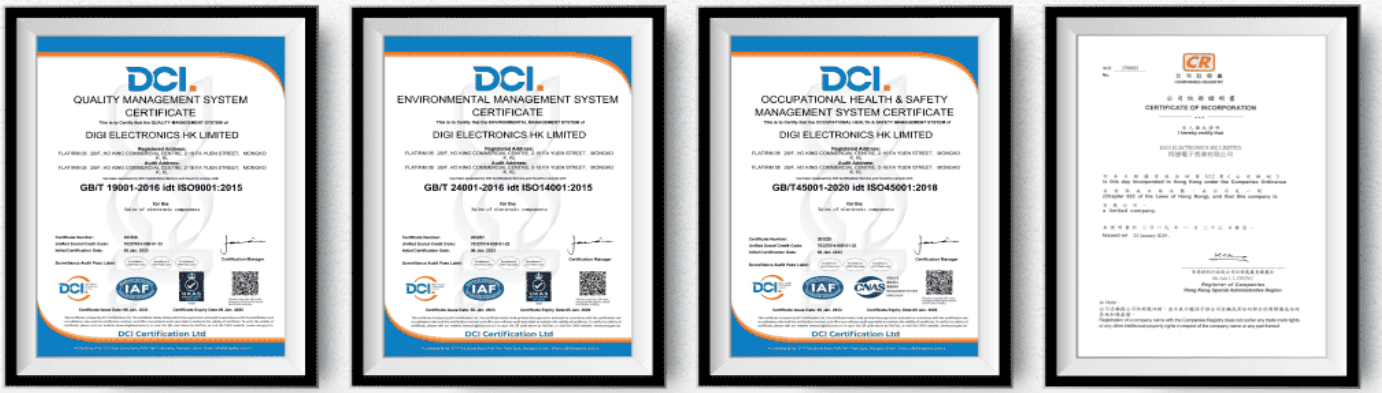

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