

MM3860 Series

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Outline

MM3860 series are Li-ion battery protection IC and detect charge current / discharge current with high precision by current sensing resistor (Rsns). MM3860 have two step discharge overcurrent detection. And system is protected appropriately in the next 2 state, Normal discharge mode and large current discharge mode.

Product Series

For one-cell

Features

(1) Range and accuracy of detection/release voltage

- Overcharge detection voltage 4.1V to 5.0V, 5mV steps Accuracy \pm 20mV
- Overdischarge detection voltage 2.1V to 3.0V, 50mV steps Accuracy \pm 35mV
- Discharging overcurrent detection voltage1 6mV to +50mV, 1mV steps Accuracy \pm 1mV
- Discharging overcurrent detection voltage2 10mV to +100mV, 1mV steps Accuracy \pm 2mV
- Charging overcurrent detection voltage -50mV to -6mV, 1mV steps Accuracy \pm 1mV
- Short detection voltage1 30mV to 200mV, 10mV steps Accuracy \pm 5mV
- 0V battery charge inhibition battery voltage 0.9V fixed Accuracy \pm 0.3V

(2) 0V battery charge function Selectable "Permission" or "inhibition"

(3) Current consumption

- Normal mode 2.5uA typ.4.0uA max.
- Standby mode 0.1uA max. (Overdischarge latch function enable.)

0.6uA max. (Overdischarge latch function disable.)

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Specifications

Product name	Package	0V battery charge function	Overcharge release function	Overdischarge release function	Discharging overcurrent release function	Overcharge detection voltage [V]
MM3860AC5ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.475
MM3860AC6ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.520
MM3860AC7ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.540
MM3860AC8ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.590
MM3860ACAZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.540
MM3860ACDRR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.550
MM3860ACERR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.600
MM3860ACJRR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.570
MM3860ACKRR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.600
MM3860ACLRR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.650
MM3860AF1ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.525
MM3860AF2ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.550
MM3860AF4RR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.580
MM3860AF5RR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.580
MM3860AF6RR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.600
MM3860AF7RR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.580
MM3860AF8RR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.580
MM3860AF9RR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.600
MM3860AFARR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.580
MM3860AFBRR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.600
MM3860AFCRR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.580
MM3860AFDRR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.600

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MM3860AFERR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.580
MM3860AFFRR4	SSON-6UorV	Prohibition	voltage	voltage	voltage	4.600
MM3860AL1ZRE	SON-6F	Permission	voltage	voltage	voltage	4.475
MM3860AL2ZRE	SON-6F	Permission	voltage	voltage	voltage	4.530
MM3860AL3ZRE	SON-6F	Permission	voltage	voltage	voltage	4.530
MM3860AL4ZRE	SON-6F	Permission	voltage	voltage	voltage	4.550
MM3860AL5ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.475
MM3860AL6ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.520
MM3860AL7ZRE	SON-6F	Permission	voltage	voltage	voltage	4.500
MM3860AL8ZRE	SON-6F	Permission	voltage	voltage	voltage	4.445
MM3860AL9ZRE	SON-6F	Permission	voltage	voltage	voltage	4.500
MM3860ALCZRE	SON-6F	Permission	voltage	voltage	voltage	4.475
MM3860ALDZRE	SON-6F	Permission	voltage	voltage	voltage	4.530
MM3860ALEZRE	SON-6F	Permission	voltage	voltage	voltage	4.550
MM3860ALFZRE	SON-6F	Permission	voltage	voltage	voltage	4.530
MM3860ALGZRE	SON-6F	Permission	voltage	voltage	voltage	4.550
MM3860ALHZRE	SON-6F	Permission	voltage	voltage	voltage	4.250
MM3860ALJRR4	SSON-6UorV	Permission	voltage	voltage	voltage	4.555
MM3860ALKRR4	SSON-6UorV	Permission	voltage	voltage	voltage	4.555
MM3860ALLZRE	SON-6F	Permission	voltage	voltage	voltage	4.580
MM3860ALMZRE	SON-6F	Permission	voltage	voltage	voltage	4.580
MM3860ALNZRE	SON-6F	Permission	voltage	voltage	voltage	4.600
MM3860ALPZRE	SON-6F	Permission	voltage	voltage	voltage	4.580
MM3860ALQZRE	SON-6F	Permission	voltage	voltage	voltage	4.600
MM3860ALRZRE	SON-6F	Permission	voltage	voltage	voltage	4.580
MM3860ALSZRE	SON-6F	Permission	voltage	voltage	voltage	4.600
MM3860ALTRR4	SSON-6UorV	Permission	voltage	voltage	voltage	4.520
MM3860AN1ZRE	SON-6F	Permission	voltage	voltage	voltage	4.445
MM3860AN2ZRE	SON-6F	Permission	voltage	voltage	voltage	4.480
MM3860AN3ZRE	SON-6F	Permission	voltage	voltage	voltage	4.445
MM3860AN4ZRE	SON-6F	Permission	voltage	voltage	voltage	4.480
MM3860AN5ZRE	SON-6F	Permission	voltage	voltage	voltage	4.445
MM3860AN6ZRE	SON-6F	Permission	voltage	voltage	voltage	4.480
MM3860AN7ZRE	SON-6F	Permission	voltage	voltage	voltage	4.480
MM3860AN8ZRE	SON-6F	Permission	voltage	voltage	voltage	4.450
MM3860AN9ZRF	SON-6F	Permission	voltage	voltage	voltage	4.485

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Part Number	SON-6F	Permission	voltage	voltage	voltage	4.450
MM3860ANAZRE	SON-6F	Permission	voltage	voltage	voltage	4.450
MM3860ANBZRE	SON-6F	Permission	voltage	voltage	voltage	4.485
MM3860ANCZRE	SON-6F	Permission	voltage	voltage	voltage	4.490
MM3860ANDZRE	SON-6F	Permission	voltage	voltage	voltage	4.525
MM3860ANEZRE	SON-6F	Permission	voltage	voltage	voltage	4.490
MM3860ANFZRE	SON-6F	Permission	voltage	voltage	voltage	4.525
MM3860ANGZRE	SON-6F	Permission	voltage	voltage	voltage	4.490
MM3860ANHZRE	SON-6F	Permission	voltage	voltage	voltage	4.525
MM3860ANJZRE	SON-6F	Permission	voltage	voltage	voltage	4.490
MM3860ANKZRE	SON-6F	Permission	voltage	voltage	voltage	4.525
MM3860ANLZRE	SON-6F	Permission	voltage	voltage	voltage	4.490
MM3860ANMZRE	SON-6F	Permission	voltage	voltage	voltage	4.525
MM3860BC3ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.495
MM3860BC4ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.545
MM3860BC5ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.495
MM3860BF1ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.475
MM3860BF2ZRE	SON-6F	Prohibition	voltage	voltage	voltage	4.520
MM3860CF1ZRE	SON-6F	Prohibition	voltage	Latch	voltage	4.390
MM3860CF3RRE	SSON-6J	Prohibition	voltage	Latch	voltage	4.365
MM3860CM1RR4	SSON-6UorV	Prohibition	voltage	Latch	voltage	4.425
MM3860CN1RR4	SSON-6UorV	Permission	voltage	Latch	voltage	4.275
MM3860EF2RRE	SSON-6J	Prohibition	Latch	Latch	voltage	4.525
MM3860EF3RRE	SSON-6J	Prohibition	Latch	Latch	voltage	4.535
MM3860EM2RRE	SSON-6J	Prohibition	Latch	Latch	voltage	4.540
MM3860EM3RRE	SSON-6J	Prohibition	Latch	Latch	voltage	4.535
MM3860EM4RRE	SSON-6J	Prohibition	Latch	Latch	voltage	4.575
MM3860EM5RR4	SSON-6UorV	Prohibition	Latch	Latch	voltage	4.530
MM3860EM7RRE	SSON-6J	Prohibition	Latch	Latch	voltage	4.490
MM3860EM8RRE	SSON-6J	Prohibition	Latch	Latch	voltage	4.275
MM3860EN1RRE	SSON-6J	Permission	Latch	Latch	voltage	4.275

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MM3860EN2RRE	SSON-6J	Permission	Latch	Latch	voltage	4.275
MM3860EN3ZRE	SON-6F	Permission	Latch	Latch	voltage	4.445

Product name	Overcharge release voltage [V]	Overdischarge detection voltage [V]	Overdischarge release voltage [V]	Discharging overcurrent detection voltage1 [V]	Discharging overcurrent detection voltage2 [V]	Charging overcurrent detection voltage [V]	Short-circuit detection voltage [V]
MM3860AC5ZRE	4.275	2.500	2.900	0.0070		-0.0110	0.025
MM3860AC6ZRE	4.320	2.300	2.500	0.0070		-0.0110	0.030
MM3860AC7ZRE	4.340	2.300	2.500	0.0070		-0.0110	0.030
MM3860AC8ZRE	4.390	2.300	2.500	0.0070		-0.0110	0.030
MM3860ACAZRE	4.340	2.300	2.500	0.0070		-0.0130	0.030
MM3860ACDRR4	4.350	2.600	3.000	0.0120		-0.0160	0.025
MM3860ACERR4	4.400	2.500	2.900	0.0150		-0.0190	0.035
MM3860ACJRR4	4.370	2.500	2.700	0.0130		-0.0130	0.030
MM3860ACKRR4	4.350	2.600	2.900	0.0120		-0.0160	0.030
MM3860ACLRR4	4.400	2.100	2.400	0.0150		-0.0190	0.040
MM3860AF1ZRE	4.350	2.300	2.500	0.0150	0.0220	-0.0200	0.040
MM3860AF2ZRE	4.375	2.100	2.300	0.0150	0.0220	-0.0200	0.040
MM3860AF4RR4	4.405	2.300	2.500	0.0150	0.0220	-0.0200	0.040
MM3860AF5RR4	4.405	2.300	2.500	0.0070	0.0110	-0.0130	0.022
MM3860AF6RR4	4.400	2.300	2.500	0.0070	0.0120	-0.0180	0.032
MM3860AF7RR4	4.380	2.350	2.550	0.0350	0.0550	-0.0250	0.125
MM3860AF8RR4	4.380	2.350	2.550	0.0105	0.0170	-0.0150	0.042
MM3860AF9RR4	4.400	2.100	2.300	0.0105	0.0170	-0.0180	0.042
MM3860AFARR4	4.380	2.350	2.550	0.0070	0.0120	-0.0120	0.028
MM3860AFBRR4	4.400	2.100	2.300	0.0070	0.0120	-0.0140	0.028
MM3860AFCRR4	4.380	2.350	2.550	0.0070	0.0120	-0.0150	0.028
MM3860AFDRR4	4.400	2.100	2.300	0.0070	0.0120	-0.0180	0.028
MM3860AFERR4	4.380	2.350	2.550	0.0070	0.0120	-0.0180	0.028
MM3860AFFRR4	4.400	2.100	2.300	0.0070	0.0120	-0.0200	0.028
MM3860AL1ZRE	4.275	2.500	2.900	0.0070	0.0200	-0.0070	0.070
MM3860AL2ZRE	4.330	2.100	2.300	0.0140	0.0200	-0.0200	0.055
MM3860AL3ZRE	4.330	2.100	2.300	0.0105	0.0150	-0.0150	0.040
MM3860AL4ZRE	4.350	2.100	2.300	0.0070	0.0100	-0.0100	0.027
MM3860AL5ZRE	4.275	2.500	2.900	0.0150		-0.0150	0.032
MM3860AL6ZRE	4.320	2.300	2.500	0.0150		-0.0150	0.036
MM3860AL7ZRE	4.300	2.100	2.300	0.0070	0.0100	-0.0130	0.027
MM3860AL8ZRE	4.295	2.350	2.550	0.0110	0.0150	-0.0150	0.040

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MM3860AL9ZRE	4.350	2.100	2.300	0.0105	0.0150	-0.0180	0.042
MM3860ALCZRE	4.275	2.600	2.800	0.0150	0.0220	-0.0200	0.040
MM3860ALDZRE	4.330	2.350	2.550	0.0210	0.0330	-0.0240	0.080
MM3860ALEZRE	4.350	2.100	2.300	0.0210	0.0330	-0.0300	0.080
MM3860ALFZRE	4.330	2.350	2.550	0.0070	0.0120	-0.0120	0.028
MM3860ALGZRE	4.350	2.100	2.300	0.0070	0.0120	-0.0140	0.028
MM3860ALHZRE	4.150	2.800	3.000	0.0350	0.0550	-0.0080	0.080
MM3860ALJRR4	4.380	2.600	2.800	0.0150	0.0220	-0.0200	0.040
MM3860ALKRR4	4.380	2.600	2.800	0.0070	0.0110	-0.0130	0.022
MM3860ALLZRE	4.380	2.350	2.550	0.0350	0.0550	-0.0250	0.125
MM3860ALMZRE	4.380	2.350	2.550	0.0210	0.0330	-0.0240	0.080
MM3860ALNZRE	4.400	2.100	2.300	0.0210	0.0330	-0.0300	0.080
MM3860ALPZRE	4.380	2.350	2.550	0.0070	0.0120	-0.0120	0.028
MM3860ALQZRE	4.400	2.100	2.300	0.0070	0.0120	-0.0140	0.028
MM3860ALRZRE	4.380	2.350	2.550	0.0105	0.0170	-0.0150	0.042
MM3860ALSZRE	4.400	2.100	2.300	0.0105	0.0170	-0.0180	0.042
MM3860ALTRR4	4.320	2.800	3.000	0.0120		-0.0120	0.030
MM3860AN1ZRE	4.245	2.500	2.900	0.0210		-0.0160	0.060
MM3860AN2ZRE	4.380	2.300	2.700	0.0230		-0.0180	0.060
MM3860AN3ZRE	4.245	2.500	2.900	0.0210		-0.0220	0.060
MM3860AN4ZRE	4.380	2.300	2.700	0.0230		-0.0240	0.060
MM3860AN5ZRE	4.245	2.500	2.900	0.0110		-0.0125	0.030
MM3860AN6ZRE	4.380	2.300	2.700	0.0130		-0.0140	0.030
MM3860AN7ZRE	4.380	2.300	2.700	0.0070		-0.0075	0.018
MM3860AN8ZRE	4.250	2.500	2.900	0.0145	0.0220	-0.0160	0.060
MM3860AN9ZRE	4.385	2.300	2.700	0.0145	0.0240	-0.0180	0.060
MM3860ANAZRE	4.250	2.500	2.900	0.0075	0.0120	-0.0125	0.030
MM3860ANBZRE	4.385	2.300	2.700	0.0075	0.0140	-0.0140	0.030
MM3860ANCZRE	4.290	2.500	2.900	0.0110		-0.0085	0.030
MM3860ANDZRE	4.425	2.300	2.700	0.0130		-0.0100	0.030
MM3860ANEZRE	4.290	2.500	2.900	0.0110		-0.0125	0.030
MM3860ANFZRE	4.425	2.300	2.700	0.0130		-0.0140	0.030
MM3860ANGZRE	4.290	2.500	2.900	0.0075	0.0120	-0.0085	0.030
MM3860ANHZRE	4.425	2.300	2.700	0.0075	0.0140	-0.0100	0.030
MM3860ANJZRE	4.290	2.500	2.900	0.0075	0.0120	-0.0125	0.030
MM3860ANKZRE	4.425	2.300	2.700	0.0075	0.0140	-0.0140	0.030
MM3860ANLZRE	4.290	2.500	2.900	0.0075	0.0130	-0.0160	0.030
MM3860ANMZRE	4.425	2.300	2.700	0.0075	0.0160	-0.0175	0.030
MM3860BC3ZRE	4.295	2.500	2.900	0.0700		-0.0110	0.025

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MM3860BC4ZRE	4.345	2.500	2.900	0.0070		-0.0110	0.025
MM3860BC5ZRE	4.295	2.500	2.900	0.0700		-0.0130	0.025
MM3860BF1ZRE	4.275	2.500	2.900	0.0150		-0.0150	0.040
MM3860BF2ZRE	4.320	2.300	2.500	0.0150		-0.0150	0.046
MM3860CF1ZRE	4.190	2.400	2.400	0.0060		-0.0060	0.030
MM3860CF3RRE	4.265	2.800	2.800	0.0100		-0.0110	0.030
MM3860CM1RR4	4.225	2.300	2.300	0.0170		-0.0100	0.040
MM3860CN1RR4	4.075	2.900	2.900	0.0060		-0.0060	0.030
MM3860EF2RRE	4.525	2.300	2.300	0.0065	0.0110	-0.0075	0.020
MM3860EF3RRE	4.535	2.300	2.300	0.0065	0.0120	-0.0075	0.020
MM3860EM2RRE	4.540	2.300	2.300	0.0100		-0.0130	0.030
MM3860EM3RRE	4.535	2.300	2.300	0.0220		-0.0090	0.050
MM3860EM4RRE	4.575	2.400	2.400	0.0100		-0.0090	0.030
MM3860EM5RR4	4.530	2.600	2.600	0.0150		-0.0140	0.025
MM3860EM7RRE	4.490	2.300	2.300	0.0100		-0.0102	0.030
MM3860EM8RRE	4.275	2.200	2.200	0.0200		-0.0060	0.084
MM3860EN1RRE	4.275	2.300	2.300	0.0200		-0.0060	0.084
MM3860EN2RRE	4.275	2.200	2.200	0.0200		-0.0060	0.084
MM3860EN3ZRE	4.445	2.600	2.600	0.0110		-0.0125	0.025

Product name	Overcharge detection delay time [s]	Overcharge release delay time [ms]	Overdischarge detection delay time [ms]	Overdischarge release delay time [ms]	Discharging overcurrent detection delay time 1 [ms]	Discharging overcurrent detection delay time 2 [ms]	Discharge overcurrent release delay time [ms]
MM3860AC5ZRE	0.512	1.0	64.0	1.0	128.0		8.00
MM3860AC6ZRE	1.024	1.0	64.0	1.0	256.0		8.00
MM3860AC7ZRE	1.024	1.0	64.0	1.0	256.0		8.00
MM3860AC8ZRE	1.024	1.0	64.0	1.0	256.0		8.00
MM3860ACAZRE	1.024	1.0	64.0	1.0	256.0		8.00
MM3860ACDRR4	1.024	16.0	20.0	1.0	12.0		1.00
MM3860ACERR4	1.024	16.0	32.0	1.0	20.0		1.00
MM3860ACJRR4	1.024	16.0	20.0	1.0	64.0		1.00
MM3860ACKRR4	1.024	16.0	20.0	1.0	12.0		1.00
MM3860ACLRR4	1.024	16.0	32.0	1.0	20.0		1.00
MM3860AF1ZRE	1.024	1.0	64.0	1.0	3072.0	256.0	8.00
MM3860AF2ZRE	1.024	1.0	64.0	1.0	3072.0	256.0	8.00
MM3860AF4RR4	1.024	1.0	64.0	1.0	3072.0		8.00
MM3860AF5RR4	1.024	1.0	64.0	1.0	3072.0		8.00
MM3860AF6RR4	1.024	16.0	20.0	1.0	3072.0	32.0	4.00

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MM3860AF7RR4	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AF8RR4	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AF9RR4	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AFARR4	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AFBRR4	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AFCRR4	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AFDRR4	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AFERR4	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AFFRR4	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AL1ZRE	1.024	1.0	64.0	1.0	4096.0	16.0	8.00
MM3860AL2ZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AL3ZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AL4ZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AL5ZRE	1.024	1.0	32.0	1.0	64.0		8.00
MM3860AL6ZRE	1.024	1.0	64.0	1.0	128.0		8.00
MM3860AL7ZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AL8ZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860AL9ZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALCZRE	1.024	1.0	64.0	1.0	3072.0	256.0	8.00
MM3860ALDZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALEZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALFZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALGZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALHZRE	1.024	16.0	128.0	1.0	2048.0	4.0	2.00
MM3860ALJRR4	1.024	1.0	64.0	1.0	3072.0	256.0	8.00
MM3860ALKRR4	1.024	1.0	64.0	1.0	3072.0	256.0	8.00
MM3860ALLZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALMZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALNZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALPZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALQZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALRZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALSZRE	1.024	1.0	64.0	1.0	3584.0	16.0	8.00
MM3860ALTRR4	1.024	16.0	20.0	1.0	32.0		1.00
MM3860AN1ZRE	1.024	16.0	128.0	4.0	16.0		4.00
MM3860AN2ZRE	1.024	16.0	128.0	1.0	32.0		4.00
MM3860AN3ZRE	1.024	16.0	128.0	4.0	16.0		4.00
MM3860AN4ZRE	1.024	16.0	128.0	1.0	32.0		4.00
MM3860AN5ZRE	1.024	16.0	128.0	4.0	16.0		4.00
MM3860AN6ZRE	1.024	16.0	128.0	1.0	32.0		4.00

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Product name	1.024	16.0	128.0	1.0	32.0	16.0	4.00
MM3860AN7ZRE	1.024	16.0	128.0	1.0	32.0		4.00
MM3860AN8ZRE	1.024	16.0	128.0	4.0	3584.0	16.0	4.00
MM3860AN9ZRE	1.024	16.0	128.0	1.0	3584.0	32.0	4.00
MM3860ANAZRE	1.024	16.0	128.0	4.0	3584.0	16.0	4.00
MM3860ANBZRE	1.024	16.0	128.0	1.0	3584.0	32.0	4.00
MM3860ANCZRE	1.024	16.0	128.0	4.0	16.0		4.00
MM3860ANDZRE	1.024	16.0	128.0	1.0	32.0		4.00
MM3860ANEZRE	1.024	16.0	128.0	4.0	16.0		4.00
MM3860ANFZRE	1.024	16.0	128.0	1.0	32.0		4.00
MM3860ANGZRE	1.024	16.0	128.0	4.0	2048.0	16.0	4.00
MM3860ANHZRE	1.024	16.0	128.0	1.0	3584.0	32.0	4.00
MM3860ANJZRE	1.024	16.0	128.0	4.0	2048.0	16.0	4.00
MM3860ANKZRE	1.024	16.0	128.0	1.0	3584.0	32.0	4.00
MM3860ANLZRE	1.024	16.0	128.0	4.0	2048.0	16.0	4.00
MM3860ANMZRE	1.024	16.0	128.0	1.0	3584.0	32.0	4.00
MM3860BC3ZRE	0.512	1.0	64.0	1.0	128.0		8.00
MM3860BC4ZRE	0.512	1.0	64.0	1.0	128.0		8.00
MM3860BC5ZRE	0.512	1.0	64.0	1.0	128.0		8.00
MM3860BF1ZRE	1.024	1.0	64.0	1.0	32.0		8.00
MM3860BF2ZRE	1.024	1.0	64.0	1.0	64.0		8.00
MM3860CF1ZRE	1.024	16.0	20.0	1.0	12.0		2.00
MM3860CF3RRE	1.024	16.0	96.0	4.0	12.0		2.00
MM3860CM1RR4	1.024	1.0	64.0	1.0	128.0		8.00
MM3860CN1RR4	1.024	1.0	32.0	1.0	16.0		1.00
MM3860EF2RRE	1.024	16.0	32.0	1.0	3584.0	32.0	8.00
MM3860EF3RRE	1.024	16.0	32.0	1.0	3584.0	32.0	8.00
MM3860EM2RRE	2.048	16.0	128.0	4.0	512.0		8.00
MM3860EM3RRE	2.048	16.0	64.0	4.0	128.0		256.00
MM3860EM4RRE	2.048	16.0	64.0	4.0	128.0		256.00
MM3860EM5RR4	1.024	16.0	128.0	4.0	32.0		4.00
MM3860EM7RRE	2.048	16.0	128.0	4.0	512.0		8.00
MM3860EM8RRE	1.024	32.0	256.0	1.0	1280.0		1.00
MM3860EN1RRE	1.024	16.0	96.0	1.0	512.0		1.00
MM3860EN2RRE	1.024	32.0	256.0	1.0	1280.0		1.00
MM3860EN3ZRE	1.024	16.0	128.0	4.0	16.0		4.00

Product name	Charging overcurrent detection delay time	Charging overcurrent release delay time [ms]	Short detection delay time [ms]
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MM3860 Series

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	[ms]		
MM3860AC5ZRE	32.0	1.0	0.280
MM3860AC6ZRE	64.0	1.0	0.280
MM3860AC7ZRE	64.0	1.0	0.280
MM3860AC8ZRE	64.0	1.0	0.280
MM3860ACAZRE	64.0	1.0	0.280
MM3860ACDRR4	16.0	1.0	0.250
MM3860ACERR4	32.0	1.0	0.500
MM3860ACJRR4	64.0	1.0	0.400
MM3860ACKRR4	16.0	1.0	0.250
MM3860ACLRR4	32.0	1.0	0.500
MM3860AF1ZRE	16.0	4.0	0.280
MM3860AF2ZRE	16.0	4.0	0.280
MM3860AF4RR4	16.0	4.0	0.280
MM3860AF5RR4	16.0	4.0	0.280
MM3860AF6RR4	64.0	1.0	0.400
MM3860AF7RR4	16.0	4.0	0.280
MM3860AF8RR4	16.0	1.0	0.280
MM3860AF9RR4	16.0	1.0	0.280
MM3860AFARR4	16.0	4.0	0.280
MM3860AFBRR4	16.0	4.0	0.280
MM3860AFCRR4	16.0	4.0	0.280
MM3860AFDRR4	16.0	4.0	0.280
MM3860AFERR4	16.0	4.0	0.280
MM3860AFFRR4	16.0	4.0	0.280
MM3860AL1ZRE	16.0	4.0	0.280
MM3860AL2ZRE	16.0	1.0	0.280
MM3860AL3ZRE	16.0	1.0	0.280
MM3860AL4ZRE	16.0	1.0	0.280
MM3860AL5ZRE	16.0	4.0	0.250
MM3860AL6ZRE	64.0	4.0	0.250
MM3860AL7ZRE	16.0	1.0	0.280
MM3860AL8ZRE	16.0	1.0	0.280
MM3860AL9ZRE	16.0	1.0	0.280
MM3860ALCZRE	16.0	4.0	0.280
MM3860ALDZRE	16.0	4.0	0.280
MM3860ALEZRE	16.0	4.0	0.280
MM3860ALFZRE	16.0	4.0	0.280
MM3860ALGZRE	16.0	4.0	0.280
MM3860ALHZRE	16.0	1.0	0.280

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Part Number	W (mm)	H (mm)	W (mm)
MM3860ALJRR4	16.0	4.0	0.280
MM3860ALKRR4	16.0	4.0	0.280
MM3860ALLZRE	16.0	4.0	0.280
MM3860ALMZRE	16.0	4.0	0.280
MM3860ALNZRE	16.0	4.0	0.280
MM3860ALPZRE	16.0	4.0	0.280
MM3860ALQZRE	16.0	4.0	0.280
MM3860ALRZRE	16.0	1.0	0.280
MM3860ALSZRE	16.0	1.0	0.280
MM3860ALTRR4	32.0	1.0	0.250
MM3860AN1ZRE	8.0	4.0	0.280
MM3860AN2ZRE	32.0	4.0	0.530
MM3860AN3ZRE	8.0	4.0	0.280
MM3860AN4ZRE	32.0	4.0	0.530
MM3860AN5ZRE	8.0	4.0	0.280
MM3860AN6ZRE	32.0	4.0	0.530
MM3860AN7ZRE	32.0	4.0	0.530
MM3860AN8ZRE	8.0	4.0	0.280
MM3860AN9ZRE	32.0	4.0	0.530
MM3860ANAZRE	8.0	4.0	0.280
MM3860ANBZRE	32.0	4.0	0.530
MM3860ANCZRE	8.0	4.0	0.280
MM3860ANDZRE	32.0	4.0	0.530
MM3860ANEZRE	8.0	4.0	0.280
MM3860ANFZRE	32.0	4.0	0.530
MM3860ANGZRE	8.0	4.0	0.280
MM3860ANHZRE	32.0	4.0	0.530
MM3860ANJZRE	8.0	4.0	0.280
MM3860ANKZRE	32.0	4.0	0.530
MM3860ANLZRE	8.0	4.0	0.280
MM3860ANMZRE	32.0	4.0	0.530
MM3860BC3ZRE	32.0	1.0	0.280
MM3860BC4ZRE	32.0	1.0	0.280
MM3860BC5ZRE	32.0	1.0	0.280
MM3860BF1ZRE	16.0	4.0	0.250
MM3860BF2ZRE	64.0	4.0	0.250
MM3860CF1ZRE	16.0	1.0	0.250
MM3860CF3RRE	8.0	4.0	0.250
MM3860CM1RR4	64.0	4.0	0.250

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MM3860CN1RR4	16.0	1.0	0.250
MM3860EF2RRE	32.0	1.0	0.250
MM3860EF3RRE	32.0	1.0	0.250
MM3860EM2RRE	32.0	8.0	0.400
MM3860EM3RRE	64.0	128.0	0.400
MM3860EM4RRE	64.0	128.0	0.400
MM3860EM5RR4	32.0	1.0	0.250
MM3860EM7RRE	32.0	8.0	0.400
MM3860EM8RRE	20.0	1.0	0.530
MM3860EN1RRE	10.0	1.0	0.300
MM3860EN2RRE	20.0	1.0	0.530
MM3860EN3ZRE	8.0	4.0	0.250

Package

[SSON-6J](#)[SSON-6M](#)[SON-6F](#)[SSON-6U](#)[SSON-6V](#)