虹冠電子工業股份有限公司
Champion Microelectronic Corporation

Specialized in Integrated High Efficient Switching Power Management Solutions

高整合高效率交換型電源管理方案之專業ＩＣ 設計

Datasheet Directory

Product Selector Guide Rev.9

Contents

Product Tree ---------- 3

General Ordering Information ---------- 4

PFC Introduce ---------- 5

Product Guide

Power Management ICs ---------- 6

Bus & Interface Products ---------- 7

Battery Management ICs ---------- 7

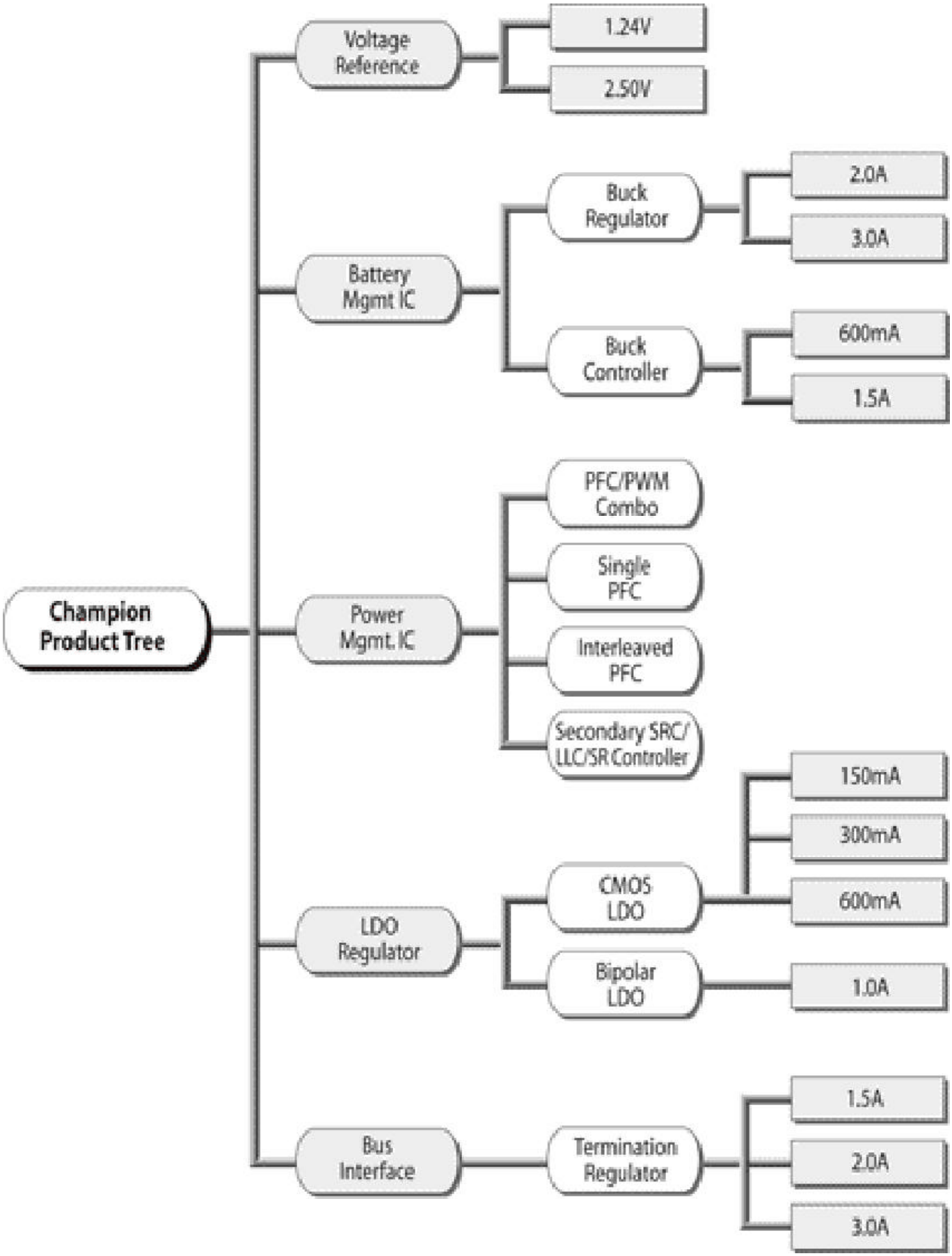
Low Dropout Regulators ---------- 8

Voltage Comparator & Reference -------- 10

Power MOSFETs ---------- 11

Schottky Barrier Diodes ---------- 12

Product Tree



General Ordering Information

I. PART NUMBER EXPLANATION

CMX XXXX (X) X X (XX)

- (XX): Tape & Reel (optional)
  - TR: Tape & Reel
  - TA: Tape Ammo.
- X: Package Type*
- X: Temperature Range
  - C= 0℃ to 70℃
  - E= -20℃ to 70℃
  - I= -40℃ to 85℃
- (X): Number or letter indicates electrical grade of part (optional)
- XXXX: Product part number
- X: Product Category
  - Blank: ICs
  - T: MOSFETs
  - S: Schottky
  - H: Hybrid
- CMX: Champion Microelectronic Prefix

* See Section II

Board Part Number Explanation

CMX XXXX - X X XX - XX

- XX: Others
- XX: Voltage
- X: Channel No.
- X: O/P connector function
  - A: 6 PUSH TERMINAL
  - B: 6 PUSH TERMINAL & VIDEO
- XXXX: Product part number
- X: Product Category
  - B: Board
- CMX: Champion Microelectronic Prefix

II. PACKAGE TYPE EXPLANATION

Letter Suffix	Description
P	Plastic DIP
R	Shrink Small Outline Package (SSOP)
S	Small Outline Package (SOIC)
T	Thin Shrink Small Outline Package (TSSOP)
M	SOT/TSOT Package
N	TO Package
Z	Single Inline Package (SIP)

III. TAPE & REEL - STANDARD PACKAGE TYPES; QUANTITY PER REEL

Champion Microelectronic can supply product on tape & reel. The following table shows packages available on tape & reel along with minimum reel quantities, reel size.
Champion Microelectronic provides this taping per industry standard specifications. All line items for tape & reel should be based on multiples of reel quantity.

Suffix	Description
TR	Tape & Reel
TA	Tape Ammo.

Package Type	Tape Ammo. Box
TO92	2,000

Package Type	Reel Quantity
SOT-23-3	3,000
SOT-23-5	3,000
SOT-89	1,000
SOT-223	2,500
S08	1,000 (7")
S08	2,500 (13")
S14	2,500
S16	2,500
T16	2,500
T20	2,500
TO252	2,500
TO263	800
SC-70	3,000

PFC Introduce

What's PFC?

Power factor correction (PFC) is a technique of counteracting the undesirable effects of electric loads that create a power factor (PF) that is less than 1.

Power factor correction may be applied either by an electrical power transmission utility to improve the stability and efficiency of the transmission network; or, correction may be installed by individual electrical customers to reduce the costs charged to them by their electricity supplier."

Explanation

When an electric load has a PF lower than 1, the apparent power delivered to the load is greater than the real power that the load consumes. Only the real power is capable of doing work, but the apparent power determines the amount of current that flows into the load, for a given load voltage.

Energy losses in transmission lines increase with increasing current. Power companies therefore require that customers, especially those with large loads, maintain the power factors of their respective loads within specified limits or be subject to additional charges. Engineers are often interested in the power factor of a load as one of the factors that affect the efficiency of power transmission.

Power factor correction returns the power factor of an electric AC power transmission system to very near unity by switching in or out banks of capacitors or inductors which act to cancel the inductive or capacitive effects of the load. For example, the inductive effect of motor loads may be offset by locally connected capacitors. It is also possible to effect power factor correction with an unloaded synchronous motor connected across the supply. The power factor of the motor is varied by adjusting the field excitation and can be made to behave like a capacitor when over excited."

It is not possible to cancel out harmonic current using these techniques, so different techniques must be used to correct nonlinear loads"

What advantage is Champion can provide

- Champion provide best solution to your customer
- Champion provide best C/P ratio to your customer
- Champion provide best support to your customer
- Champion provide best FAE team to you
- Champion provide next solution to you for your new customer

Power Management ICs

PFC / PWM Combo

Part #	Features	SIP-09	PDIP-08	SOP-08	SOP-10	SSOP-10	PDIP-16	SOP-16
CM6800	Pin-to-pin compatible with ML4800 with short circuit protection, UVLO=13V, fpfc=fpwm						☆	☆
CM6800A	80+ PFC/PWM controller, pin to pin with CM6800, fpfc=fpwm						☆	☆
CM6802A	80++ PFC/PWM controller, pin to pin with CM6800A, fpfc=fpwm						☆	☆
CM6802B	80++ PFC/PWM controller, pin to pin with CM6800A, fpfc=2 x fpwm						☆	☆
CM6805A	10 pin Passive PFC to Active PFC, PFC/PWM controller, fpfc=fpwm=67.5K					☆		
CM6805B	10 pin Passive PFC to Active PFC, PFC/PWM controller, fpfc=fpwm=100K					☆		
CM6806	10 pin Green Mode PFC/PWM Combo Controller, with Tri-Fault Protection, fpfc=2 x fpwm 55K:110K					☆		
CM6807	10 pin Green Mode PFC/PWM Combo Controller, 85+ efficiency Low Cost AC Adapter Controller					☆		
CM6903A	9 pin DIP PFC/PWM Combo Controller, with feed forward function, fpfc=fpwm=67.5K	☆						
CM6903B	9 pin DIP PFC/PWM Combo Controller, with feed forward function, fpfc=fpwm=100K	☆						
CM6300*	90++ efficiency AC Adapter for 50W to 200W applications							☆
CM6307*	94++ efficiency AC Adapter for 120W to 200W applications							☆

Note*: New product will be available in the Q2 of year 2008

Only PFC Controller

Part #	Features	SIP-09	PDIP-08	SOP-08	SOP-10	SSOP-10	PDIP-16	SOP-16
CM6501	8 pin SOIC Single PFC with follower boost function						☆	
CM6502	8 pin DIP Single PFC with AC Brownout		☆					

Interleaved PFC

Part #	Features	SIP-09	PDIP-08	SOP-08	SOP-10	SSOP-10	PDIP-16	SOP-16
CM6565*	2 Phase 16 pin Interleaved PFC controller; a 90+ controller						☆	

Note*: New product will be available in the Q1 of year 2009

PFC/Standby Cmobo Controller

Part #	Features	SIP-09	PDIP-08	SOP-08	SOP-10	SSOP-10	PDIP-16	SOP-16
CM6803	10 pin PFC/Standby combo controller					☆		

Secondary SRC/LLC/SR Controller

Part #	Features	SIP-09	PDIP-08	SOP-08	SOP-10	SSOP-10	PDIP-16	SOP-16
CM6900	LLC/SRC + SR controller with both FM and PWM; a 90+ controller							☆

Bus & Interface Products

Switching Bus Terminators

Part #	Supply Voltage (V)	I_{OUT} (A)	I_{VCCA} (μA)	I_{PVDD} (μA)	fsw (MHz)	Features	Package: SOP-08	Package: SOP-16	Package: TSSOP-16
CM8500	2V~6V	3.0	200	500	0.6	1. Source & Sink Current 2. Integrated Power MOSFETs 3. Output Voltage Programmable 4. Separate Voltages of VCCQ and PVDD 5. Shutdown for Standby or Suspend Mode Operation 6. Thermal Shutdown Protection 7. Soft Start		☆	☆
CM8501	2V~6V	1.5	220	500	1.2			☆	☆
CM8501A	2V~6V	1.5	220	500	1.2		☆		
CM8501C	2V~6V	1.5	220	500	1.2		☆		

Linear Bus Terminators

Part #	Supply Voltage (V)	I_{OUT} (A)	I_{VCCA} (μA)	IOP (mA)	Features	Package: SOP-08	Package: PSOP-08	Package: TO-252	Package: TO-263
CM8560	6	3.0	190	1.0	1. Source & Sink Current 2. Integrated Power MOSFETs 3. Output Voltage Programmable 4. Current Limit Protection and Short Circuit Protection 5. Shutdown for Standby or Suspend Mode Operation 6. Thermal Shutdown Protection 7. Minimum Exteral Components				☆
CM8561	6	1.5	190	1.2		☆			
CM8562	6	2.0	190	1.2			☆	☆	
CM8562P	6	2.0	190	1.2			☆		
CM8562B	6	1.8	190	1.2			☆		
CM8562C	6	1.8	190	1.2			☆		
CM8562A	6	2.0	190	1.2			☆		

Battery Management ICs

Low-Noise PWM Step-Down Regulators

Part #	Supply Voltage (V)	I_{OUT} (A)	I_{VCCA} (μA)	I_{PVDD} (μA)	fsw (MHz)	Features	Package: SOP-08	Package: TSSOP-08	Package: SOP-16	Package: TSSOP-16	Package: TO-220	Package: TO-263	Package: SOT-25
CM2593	1.23V~37V	2.0	70	200	0.052	1. Wide Input Voltage Range to 40V 2. Low Standby Current 3. Thermal Shutdown and Current Limit Protection	☆						
CM2596	1.23V~28V	3.0	70	200	0.150	1. Wide Input Voltage Range to 32V 2. Low Standby Current 3. Thermal Shutdown and Current Limit Protection					☆	☆	
CM2596S	1.23V~37V	3.0	70	200	0.150	1. Wide Input Voltage Range to 40V 2. Low Standby Current 3. Thermal Shutdown and Current Limit Protection					☆	☆	

Battery Management ICs

Low-Noise PWM Step-Down Regulators

Part #	Supply Voltage (V)	I_{OUT} (A)	I_{VCCA} (μA)	I_{PVDD} (μA)	fsw (MHz)	Features	SOP-08	TSSOP-08	SOP-16	TSSOP-16	TO-220	TO-263	SOT-25
CM3706	2.5V~5.5V	0.6	270		1.5	1.High Efficiency: Up to 96% 2.1.5Mhz Constant Switching Frequency 3.600mA Output Current at VIN=3V 4.Integrated Main switch and synchronous rectifier. No Schottky Diode Required 5.2.5V to 5.5V Input Voltage Range 6.Output Voltage as Low as 0.6V 7.100% Duty Cycle in Dropout 8.Low Quiescent Current: 300μA 9.Slope Compensated Current Mode Control for Excellent Line and Load Transient Response 10.Short Circuit Protection 11.Thermal Fault Protection 12.<1μA Shutdown Current							☆
CM3708	2V~6V	3.0	200	500	0.600	1. Source & Sink Current 2. Integrated Power MOSFETs 3. Output Voltage Programmable 4. Separate Voltages of VCCQ and PVDD 5. Shutdown for Standby or Suspend Mode Operation 6. Thermal Shutdown Protection 7. Soft Start			☆	☆			
CM3718	2V~6V	1.5	220	500	1.100		☆	☆					

Low Dropout Regulators

Low Dropout Linear Regulators

Part #	Supply Voltage(V)	V_{OUT} (V)	V_{ref} (Adj.) (V)	I_{OUT} (A)	Features	SOT-223	TO-220	TO-252	TO-263
CM1117	18	Adj. 1.8/2.5/3.3V	1.238~1.262	1.0	1. Full Current Rating Over Line & Temp. 2. Fast Transient Response	☆			
CM1117F	12	Adj. 1.8/2.5/3.3V	1.238~1.262	1.0		☆			
CM1117L	7	Adj. 1.8/2.5/3.3V	1.238~1.262	1.0		☆			

Low Dropout Regulators

CMOS LDO Regulators

Part #	V_{OUT} (V) Adj.	V_{OUT} (V) Fixed	I_{OUT} (A)	Max. Dropout (V)	Max. V_{IN} (V)	Tol %	Features	Shutdown	SOT-23-3	SOT-23-5	SOT-89	SOT-353
150mA SINGLE OUTPUT LDO												
CM2816AC		1.2	0.15	0.3	7	2.0	1. Very Low Dropout Voltage 2. Guaranteed 300mA Output 3. High Output Voltage Accuracy 4. 30μA Quiescent Current 5. Thermal Shutdown 6. Current Limiting 7. Factory Pre-set Output Voltage 8. Short Circuit Current Fold-Back 9. Low Temperature Coefficient 10. Noise Reduction Bypass Capacitor 11. Power-Saving Shutdown Mode 12. Stability with Low ESR Capacitors		☆	☆	☆	☆
CM2816A		1.5	0.15	0.3	7	2.0			☆	☆	☆	☆
CM2816D		1.8	0.15	0.3	7	2.0			☆	☆	☆	☆
CM2816F		2.0	0.15	0.3	7	2.0			☆	☆	☆	☆
CM2816K		2.5	0.15	0.3	7	2.0			☆	☆	☆	☆
CM2816N		2.7	0.15	0.3	7	2.0			☆	☆	☆	☆
CM2816P		2.8	0.15	0.3	7	2.0			☆	☆	☆	☆
CM2816S		3.0	0.15	0.3	7	2.0			☆	☆	☆	☆
CM2816U		3.3	0.15	0.3	7	2.0			☆	☆	☆	☆
CM2816V		3.6	0.15	0.3	7	2.0			☆	☆	☆	☆
300mA SINGLE OUTPUT LDO												
CM2836AC		1.2	0.3	0.3	7	2.0	1. Very Low Dropout Voltage 2. Guaranteed 300mA Output 3. High Output Voltage Accuracy 4. 30μA Quiescent Current 5. Thermal Shutdown 6. Current Limiting 7. Factory Pre-set Output Voltage 8. Short Circuit Current Fold-Back 9. Low Temperature Coefficient 10. Noise Reduction Bypass Capacitor 11. Power-Saving Shutdown Mode 12. Stability with Low ESR Capacitors		☆	☆	☆	☆
CM2836A		1.5	0.3	0.3	7	2.0			☆	☆	☆	☆
CM2836D		1.8	0.3	0.3	7	2.0			☆	☆	☆	☆
CM2836F		2.0	0.3	0.3	7	2.0			☆	☆	☆	☆
CM2836K		2.5	0.3	0.3	7	2.0			☆	☆	☆	☆
CM2836N		2.7	0.3	0.3	7	2.0			☆	☆	☆	☆
CM2836P		2.8	0.3	0.3	7	2.0			☆	☆	☆	☆
CM2836S		3.0	0.3	0.3	7	2.0			☆	☆	☆	☆
CM2836U		3.3	0.3	0.3	7	2.0			☆	☆	☆	☆
CM2836V		3.6	0.3	0.3	7	2.0			☆	☆	☆	☆
300mA SINGLE OUTPUT LDO												
CM2835S		3.3	0.3	0.3	7	1.5	1. Very Low Dropout Voltage 2. Guaranteed 300mA Output 3. High Output Voltage Accuracy 4. 30μA Quiescent Current 5. Thermal Shutdown 6. Current Limiting 7. Factory Pre-set Output Voltage 8. Short Circuit Current Fold-Back 9. Low Temperature Coefficient 10. Noise Reduction Bypass Capacitor 11. Power-Saving Shutdown Mode 12. Stability with Low ESR Capacitors		☆		☆	
CM2838S		3.3	0.3	0.3	7	1.5				☆	☆	

Low Dropout Regulators

CMOS LDO Regulators

Part #	V_{OUT} (V)	I_{OUT} (A)	Max. Dropout (V)	Max. V_{IN} (V)	Features	Package: SOT-223	Package: SOT-89
600mA SINGLE OUTPUT LDO							
CM2861K	2.5	0.6	0.8	7	1. Very Low Dropout Voltage 2. Guaranteed 600mA Output 3. High Output Voltage Accuracy 4. 30μA Quiescent Current 5. Over-Temperature Protection 6. Current Limiting 7. Factory Pre-set Output Voltage 8. Short Circuit Current Fold-Back 9. Low Temperature Coefficient	☆	☆
CM2861S	3.3	0.6	0.6	7		☆	☆
CM2865K	2.5	0.6	0.8	7		☆	☆
CM2865S	3.3	0.6	0.6	7		☆	☆

Voltage Comparator & Reference

Voltage Reference

Part #	Cathode Voltage (V)	Typ. V_{ref} (V)	Max. I_k (mA)	Features	Package: SOT-23-3	Package: SOT-23-5	Package: SOT-89	Package: TO-92	Package: SOP-08
CM431	37	2.5	100	1. Adjustable Output Voltage to 36V 2. Sink Current Capability from 1mA to 100mA 3. Dynamic Output Impedance 0.2Ω Typ.	☆	☆	☆	☆	
CM431A	18	2.5	100	1. Adjustable Output Voltage to 16V 2. Sink Current Capability from 1mA to 100mA 3. Dynamic Output Impedance 0.2Ω Typ.	☆	☆	☆	☆	☆
CM431L	20	1.25	100	1. Adjustable Output Voltage to 20V 2. Sink Current Capability from 1mA to 100mA 3. Dynamic Output Impedance 0.25Ω Typ.	☆	☆	☆	☆	

Power MOSFETs

Part #	$V_{(BR)DSS}$ (V)	I_D @ 25℃ (A)	$R_{DS(ON)}$ @ 10V (W) Max.	Package
HIGH VOLTAGE SINGLE N-CHANNEL				
CMT05N50	500	5	1.50	TO-220, TO-220FP
CMT08N50	500	8	0.80	TO-220, TO-220FP
CMT14N50	500	14	0.40	TO-3P
CMT01N60	600	1	8.00	TO-251, TO-252
CMT02N60	600	2	4.40	TO-252, TO-220, TO-220FP
CMT04N60	600	4	2.40	TO-220, TO-220FP
CMT06N60	600	6	1.20	TO-220, TO-220FP
LOW VOLTAGE DUAL N-CHANNEL				
CMT9926	20	6	28	SOP-08
LOW VOLTAGE DUAL P-CHANNEL				
CMT4953	-30	-5.3	90	SOP-08
LOW VOLTAGE SINGLE P-CHANNEL				
CMT9435	30	-4.5	90	SOP-08
LOW POWER SINGLE N-CHANNEL				
CMT2302	20	2.8	85	SOT-23-3
CMT2304	30	2.5	117	SOT-23-3
CMT2N7002	60	0.115	7.5	SOT-23-3
CMT2N7002W	60	0.115	7.5	SOT-323
LOW POWER SINGLE P-CHANNEL				
CMT2301	-20	-2.3	13	SOT-23-3
CMT2303	-30	-1.7	24	SOT-23-3

Schottky Barrier Diodes

8.0AMP Schottky Barrier Diodes						
Part #	**P_{IV} (V)**	**Io(A)**	**I_{FSM} (A_{PK})**	**V_{FM} (V)**	**I_R @ 25℃(mA)**	**Package**
SR820	20	8	150	0.58	5.0	DO-201
SR830	30	8	150	0.58	5.0	DO-201
SR840	40	8	150	0.58	5.0	DO-201
SR850	50	8	150	0.70	5.0	DO-201
SR860	60	8	150	0.70	5.0	DO-201
SR880	80	8	150	0.87	0.5	DO-201
SR8100	100	8	150	0.87	0.5	DO-201
10.0AMP Schottky Barrier Diodes						
Part #	**P_{IV} (V)**	**Io(A)**	**I_{FSM} (A_{PK})**	**V_{FM} (V)@5A**	**I_R @ 25℃(mA)**	**Package**
SR1020	20	10	120	0.55	0.3	TO-220
SR1030	30	10	120	0.55	0.3	TO-220
SR1040	40	10	120	0.55	0.3	TO-220
SR1050	50	10	120	0.70	0.15	TO-220
SR1060	60	10	120	0.70	0.15	TO-220
SR1080	80	10	120	0.87	0.05	TO-220
SR10100	100	10	120	0.87	0.05	TO-220
SR10150	150	10	120	0.87	0.1	TO-220
SR10200	200	10	120	0.87	0.1	TO-220
16.0AMP Schottky Barrier Diodes						
Part #	**P_{IV} (V)**	**Io(A)**	**I_{FSM} (A_{PK})**	**V_{FM} (V)@8A**	**I_R @ 25℃(mA)**	**Package**
SR1620	20	16	150	0.55	0.5	TO-220
SR1630	30	16	150	0.55	0.5	TO-220
SR1640	40	16	150	0.55	0.5	TO-220
SR1650	50	16	150	0.70	0.5	TO-220
SR1660	60	16	150	0.70	0.5	TO-220
SR1680	80	16	150	0.85	0.1	TO-220
SR16100	100	16	150	0.85	0.1	TO-220
SR16150	150	16	150	0.95	0.1	TO-220
SR16200	200	16	150	0.95	0.1	TO-220
20.0AMP Schottky Barrier Diodes						
Part #	**P_{IV} (V)**	**Io(A)**	**I_{FSM} (A_{PK})**	**V_{FM} (V)@10A**	**I_R @ 25℃ (mA)**	**Package**
SR2020	20	20	150	0.65	0.5	TO-220
SR2030	30	20	150	0.65	0.5	TO-220
SR2040	40	20	150	0.65	0.5	TO-220
SR2050	50	20	150	0.75	0.3	TO-220
SR2060	60	20	125	0.75	0.3	TO-220
SR2080	80	20	125	0.93	0.2	TO-220
SR20100	100	20	125	0.93	0.2	TO-220
SR20150	150	20	175	0.95	0.1	TO-220
SR20200	200	20	175	0.95	0.1	TO-220
30.0AMP Schottky Barrier Diodes						
Part #	**P_{IV} (V)**	**Io(A)**	**I_{FSM} (A_{PK})**	**V_{FM} (V)**	**I_R @ 25℃(mA)**	**Package**
SR3020	20	30	230	0.58	1.0	TO-220
SR3030	30	30	230	0.58	1.0	TO-220
SR3040	40	30	230	0.58	1.0	TO-220
SR3050	50	30	230	0.70	1.0	TO-220
SR3060	60	30	230	0.70	1.0	TO-220
SR3080	80	30	230	0.87	1.0	TO-220
SR30100	100	30	230	0.87	1.0	TO-220

ISO9001:2002 registered

Champion Microelectronic Corp.

Headquarters - HsinChu, Taiwan
5F, No.11, Park Avenue II,
Hsinchu Science-Based Industrial Park,
Hsinchu City, Taiwan 300
Phone: +886-3-567-9979
Fax: +886-3-567-9909
http: //www.championmicro.com.tw
http: //www.champion-micro.com

Worldwide Sales & Marketing Division
- Taipei, Taiwan
7F-6, No.32, Sec.1, Chenggong Rd.,
Nangang District, Taipei City 115, Taiwan
Phone: +886-2-2788-0558
Fax: +886-2-2788-2985
Email: sales@championmicro.com.tw
http: //www.championmicro.com.tw
http: //www.champion-micro.com

R&D Center - San Jose, CA, USA
4020 Moorpark Avenue, Suite 105,
San Jose, CA95117, U.S.A.
Phone: +1-408-9851898
Fax: +1-408-9851683

Shenzhen Office
17F-30, No.3037, Shennan Rd.,
Shenzhen P.R. China 518033
Phone: +86-755-83980936
Fax: +86-755-83981296

July, 2007, Rev.9