

## High Reliability Integrated Circuits



Linear Circuits

Power Supply Circuits

Class-B QML-Qualified

DSCC Certified

## Introduction

Microsemi Corporation has long been a leading supplier of high reliability space and military discrete semiconductor components and modules. The Microsemi Analog Mixed Signal Group, AMSG supplies the Class B Integrated Circuit products and is certified by the Defense supply Center Columbus (DSCC) and has been placed on the Qualified Manufacturer's List (QML). Class B QML devices are supplied in conformance with the following Military Specifications:

- MIL-M-38510 slash sheets (JAN)
- Standard Microcircuit Drawings (SMD)
- MIL-STD-883, paragraph 1.2.1 compliant devices (/883B)
- Class S wafer processing, assembly and screening is performed at the MSC-AMSG facility in Garden Grove, CA. in accordance with MIL-STD-883, Method 5004, Table 1. Class S processing is specified and facilitated by individual customer requirements through Source Control Drawings (SCD).

As an option where appropriate, Microsemi also offers a broad range of commercial and industrial grade integrated circuits that include DC-DC controllers and voltage regulators, low drop-out linear voltage regulators, light sensors, LED drivers, CCFL Backlight inverter modules and integrated circuit controllers.

Certifications for AMSG Process and Products

- ISO 9001:2000
- MIL-PRF-38535QML

# Product Selection Guide

## Linear Circuits

### **Interface**

SG3081	Transistor Array, High Current
SG2001-24	Driver Array Series, 7 NPN's 50 to 95V, 500 to 600ma
SG2074	Quad 1.5A Darlington Switch
SG2801-24	Driver Array Series, 8 NPN's 50 to 95V, 500 to 600ma

### **MOSFET Drivers**

SG1626	Dual High Speed MOSFET Driver
SG1644	Inverting, Dual High Speed MOSFET Driver

### **Operational Amplifier**

SG143	Op Amp, 4V to 40V Supply
SG1436	Op Amp, High Voltage
SG1536	Op Amp, Low Offset, High Voltage
SG2101	Dual Op Amp, Un-compensated

### **Voltage Reference**

SG1503	Precision Reference, 2.5V
--------	---------------------------

### **Supervisory**

SG1543	Power Supply Supervisory Circuit
SG1544	Power Supply Supervisory Circuit Low Voltage Option
SG1548	Quad Power Fault Monitor
SG1549	Current Sense Latch

## Power Supply Circuits

### **Pulse Width Modulator IC Controllers**

SG1524	Voltage Mode PWM
SG1524B	Voltage Mode PWM, +/-1% Ref.
SG1525A	Voltage Mode PWM, Dual Sink /Source Outputs
SG1526	Voltage Mode PWM, 300Khz
SG1526B	Voltage Mode PWM, 500Khz
SG1527A	Voltage Mode PWM, Inverted Output from SG1525A
SG1529	Voltage Mode PWM, Inverted
SG1731	PWM Motor Controller
SG1825C	Current Mode PWM, 1.5Mhz

## Power Supply Circuits, continued

SG1842	Current Mode PWM, Off-line, 16V UVLO
SG1843	Current Mode PWM, Off-line, 8V UVLO
SG1844	Current Mode PWM, Off-line, 16V UVLO, Max Duty Cycle 100%
SG1845	Current Mode PWM, Off-line, 16V UVLO, Max Duty Cycle 50%
SG1846	Current Mode PWM, Dual Sink/Source Outputs, 8-40V

### **Linear Voltage Regulators**

SG109	Positive 5.0V Fixed, 1A
SG117	Positive Adjustable, 1.5A
SG117A	Positive Adjustable, +/-1% Tol., 1.5A
SGR117A	Rad Hard Positive, Adjustable, 1.5A
SG120	Negative: 5, 5.2, 8, 12, 15, 18, 20, 24V
SG120A	Negative: 5, 5.2, 8, 12, 15, 18, 20, 24V
SG137	Negative, Adjustable
SG137A	Negative, Adj., +/-1% Tol, 1.5A
SG140	Positive: 5, 5.2, 6, 8, 12, 15, 18, 20, 24V
SG140A	Positive: 5, 5.2, 6, 8, 12, 15, 18, 20, 24V
SG723	Precision Regulator/Controller, Adj. Positive or Negative Output
SG1532	Precision Regulator/Controller, Adj. Positive or Negative Output
SG78xx	Positive: 5, 6, 8, 12, 15, 18, 20, 24V Fixed
SG78xxA	Positive: 5, 6, 8, 12, 15, 18, 20, 24V Fixed
SG79xx	Negative 5, 5.2, 8, 12, 15, 18, 20, 24V Fixed
SG79xxA	Negative 5, 5.2, 8, 12, 15, 18, 20, 24V Fixed

## Product Listing Sorted by SMD and JAN Number

Microsemi AMSG Part Number (/883B)	Standard Microcircuit Drawing (SMD)	MIL-M-38510/ (JAN)	Microsemi AMSG Part Number (/883B)	Standard Microcircuit Drawing (SMD)	MIL-M-38510/ (JAN)
SG2803L	5962-86058012A		SG7805AT	5962-8778201XA	
SG2803J	5962-8605801VA	M38510/14108BVA	SG7805AK	5962-8778201YA	
SG1842L	5962-86704012A		SG7805AR	5962-8778201ZA	
SG1842J	5962-8670401CA		SG7815AL	5962-88553012A	
SG1842F	5962-8670401HA		SG7815AG	5962-8855301TA	
SG1842Y	5962-8670401PA		SG7815AIG	5962-8855301UA	
SG1843L	5962-86704022A		SG7815AT	5962-8855301XA	
SG1843J	5962-8670402CA		SG7815AK	5962-8855301YA	
SG1843F	5962-8670402HA		SG7815AR	5962-8855301ZA	
SG1843Y	5962-8670402PA		SG7824AT	5962-8855401XA	
SG1844L	5962-86704032A		SG7824AK	5962-8855401YA	
SG1844J	5962-8670403CA		SG7824AR	5962-8855401ZA	
SG1844F	5962-8670403HA		SG3081J	5962-8866401EA	
SG1844Y	5962-8670403PA		SG1626J	5962-8871601CA	
SG1845L	5962-86704042A		SG1626T	5962-8871601GA	
SG1845J	5962-8670404CA		SG1626Y	5962-8871601PA	
SG1845F	5962-8670404HA		SG1626R	5962-8871601XA	
SG1845Y	5962-8670404PA		SG7905AL	5962-88746012A	
SG1846L	5962-86806012A		SG7905AG	5962-8874601TA	
SG1846J	5962-8680601EA		SG7905AIG	5962-8874601UA	
SG1846F	5962-8680601FA		SG7905AT	5962-8874601XA	
SG1549Y	5962-8684901PA		SG7905AK	5962-8874601YA	
SG1503Y	5962-8686101PA		SG7905AR	5962-8874601ZA	
SG1503T	5962-8686101YA		SG7912AL	5962-88747012A	
SG1524BJ	5962-8764501EA		SG7912AG	5962-8874701TA	
SG1825CL	5962-87681012A		SG7912AIG	5962-8874701UA	
SG1825CJ	5962-8768101EA		SG7912AT	5962-8874701XA	
SG1543L	5962-87740012A		SG7912AK	5962-8874701YA	
SG1543J	5962-8774001EA		SG7912AR	5962-8874701ZA	
SG1544J	5962-8774002VA		SG7915AL	5962-88748012A	
SG1532L	5962-87770012A		SG7915AG	5962-8874801TA	
SG1532J	5962-8777001CA		SG7915AIG	5962-8874801UA	
SG1532T	5962-8777001IA		SG7915AT	5962-8874801XA	
SG7812AL	5962-87776012A		SG7915AK	5962-8874801YA	
SG7812AG	5962-8777601TA		SG7915AR	5962-8874801ZA	
SG7812AIG	5962-8777601UA		SG1525AJ	5962-8951101EA	M38510/12602BEA
SG7812AT	5962-8777601XA		SG1525AF	5962-8951101FA	
SG7812AK	5962-8777601YA		SG1527AJ	5962-8951102EA	M38510/12604BVA
SG7812AR	5962-8777601ZA		SG7806AL	5962-89626012A	
SG7805AL	5962-87782012A		SG7806AT	5962-8962601XA	
SG7805AG	5962-8778201TA		SG7806AK	5962-8962601YA	
SG7805AIG	5962-8778201UA		SG7806AR	5962-8962601ZA	

## Product Listing Sorted by SMD and JAN Number

Microsemi AMSG Part Number (/883B)	Standard Microcircuit Drawing (SMD)	MIL-M-38510/ (JAN)	Microsemi AMSG Part Number (/883B)	Standard Microcircuit Drawing (SMD)	MIL-M-38510/ (JAN)
SG7808AG	5962-8962801TA		SG117AIG	7703405UA	
SG7808AIG	5962-8962801UA		SG117AT	7703405XA	
SG7808AT	5962-8962801XA		SG117AK	7703405YA	
SG7808AK	5962-8962801YA		SG117AR	7703405ZA	
SG7808AR	5962-8962801ZA		SG137AL	77034062A	
SG2821L	5962-89684012A		SG137AT	7703406XA	
SG2821J	5962-8968401VA		SG143Y	7800303PA	
SG2823L	5962-89685012A		SG143T	7800303XA	
SG2823J	5962-8968501VA		SG1536Y	7800304PA	
SG2824L	5962-89686012A		SG1536T	7800304XA	
SG2824J	5962-8968601VA		SG1524J	7802801EA	M38510/12601BEA
SG7908AG	5962-8987001TA		SG1526BL	85515012A	
SG7908AIG	5962-8987001UA		SG1526BJ	8551501VA	M38510/12603BVA
SG7908AT	5962-8987001XA		SG2101AJ		M38510/10105BEA
SG7908AK	5962-8987001YA		SG723J		M38510/10201BCA
SG7908AR	5962-8987001ZA		SG723F		M38510/10201BHA
SG2023J	5962-8987601EA		SG723T		M38510/10201BIA
SG2023F	5962-8987601FA		SG109T		M38510/10701BXA
SG1548J	5962-8987801EA		SG7815T		M38510/10704BXA
SG7818AL	5962-89915012A		SG7805T		M38510/10702BXA
SG7818AIG	5962-8991501UA		SG7805K		M38510/10706BYA
SG7818AT	5962-8991501XA		SG7812T		M38510/10703BXA
SG7818AK	5962-8991501YA		SG7812K		M38510/10707BYA
SG7818AR	5962-8991501ZA		SG7815K		M38510/10708BYA
SG7820AK	5962-9152301MYA		SG7905T		M38510/11501BXA
SG7820AIG	5962-9152301MUA		SG7912T		M38510/11502BXA
SG7820AT	5962-9152301MXA		SG7915T		M38510/11503BXA
SG7820AR	5962-9152301MZA		SG7924T		M38510/11504XA
SG1644L	5962-9165301M2A		SG7905K		M38510/11505BYA
SG1644J	5962-9165301MCA		SG7912K		M38510/11506BYA
SG1644T	5962-9165301MGA		SG7915K		M38510/11507BYA
SG1644Y	5962-9165301MPA		SG7924K		M38510/11508YA
SG1731J	5962-9669901MEA		SG2001J		M38510/14101BEA
SG117L	77034012A		SG2002J		M38510/14102BEA
SG117G	7703401TA		SG2003J		M38510/14103BEA
SG117IG	7703401UA		SG2004J		M38510/14104BEA
SG117T	7703401XA	M38510/11703BXA	SG2005J		M38510/14105BEA
SG117K	7703401YA	M38510/11704BYA	SG2801J		M38510/14106BVA
SG117R	7703401ZA		SG2802J		M38510/14107BVA
SG137L	77034032A		SG2803J		M38510/14108BVA
SG137T	7703403XA		SG2804J		M38510/14109BVA
SG117AL	77034052A		SG2805J		M38510/14110BVA
SG117AG	7703405TA				

## Available Package Types

### Ceramic Dual-In-Line (DIP),

Microsemi designator “Y”: 8 pin

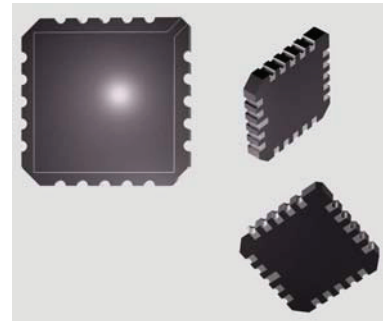
Microsemi designator “J”: 14, 16 and 18 pin



**Ceramic Flat Pack (Cerpac)**, Microsemi designator “F”: 10, 14, 16, 20 and 24 pin

### Ceramic Leadless Chip Carrier

(LCC), Microsemi designator “L”: 20 pin



### Metal Cans

Low Current (500ma)

TO-39, Microsemi designator “T”: 3 pin

TO-99, Microsemi designator “T”: 8 pin

TO-100, Microsemi designator “T”: 10 pin

Medium Current (1A)

TO-66, Microsemi designator “R”: 3 and 5 pin

High Current (>1.5A)

TO-3, Microsemi designator “K”: 3 pin

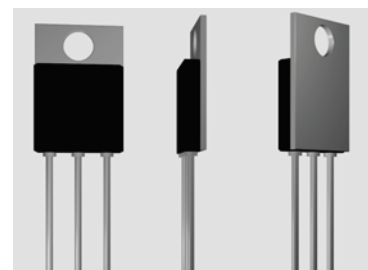


### Metal Case with mounting tab,

TO-257: 3 pin

Insulated case, Microsemi designator “IG”

Non-insulated case, Microsemi designator “G”



# Screening Standards

## **Customer Generated Source Control Drawings (SCD)**

Microsemi fully reviews the customer requirements, both the technical and processing, as specified in the SCD and purchase order. A special processing document (SPS) is generated by Microsemi to assure that the requirements of the SCD are met.

## **Microsemi Standard Class S Flow**

Microsemi has documented two standard Class S Flows, in the event an SCD is not published.

- **MIL-STD-883, paragraph 1.2.1 compliant**  
The process flow is defined in Method 5004, Class S. The quality conformance inspection is defined in Method 5005, Class S.
- **SCC / ESA 9000, Level B (Class S) compliant**

## **Microsemi Custom Class S Flow**

The standard Class S flow can be modified by adding or deleting screening procedures or process controls to fit the customer's needs. The negotiated processing requirements are documented in an SPS traveler to assure compliance to the purchase order requirements.

## **Other Offerings**

### **Radiation Hardness Assurance (RHA)**

Many products offered by Microsemi have been tested for radiation hardness. Contact the factory for generic data by device type. Radiation testing on a lot or wafer basis may be specified.

### **Customer or Government Source Inspection**

On-site inspections are available at any point in the processing or acceptance testing.

Microsemi Corporation  
Analog Mixed Signal Group  
High Reliability ICs  
One Enterprise  
Aliso Viejo, CA 92656



[www.microsemi.com](http://www.microsemi.com)