Preliminary Data Sheet Supplement

Subject:	PQFN64 Package Specification
Data Sheet Concerned:	MAS 35x9F, 6251-505-1PD, Aug. 1, 2001 MAS 3587F, 6251-542-2PD, Nov. 7, 2001
Supplement:	No. 4/ 6251-548-3PDS
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PQFN64 Package Specification for MAS 35x9F Version B4 and MAS 3587F Version B2:

1. Outline Dimensions

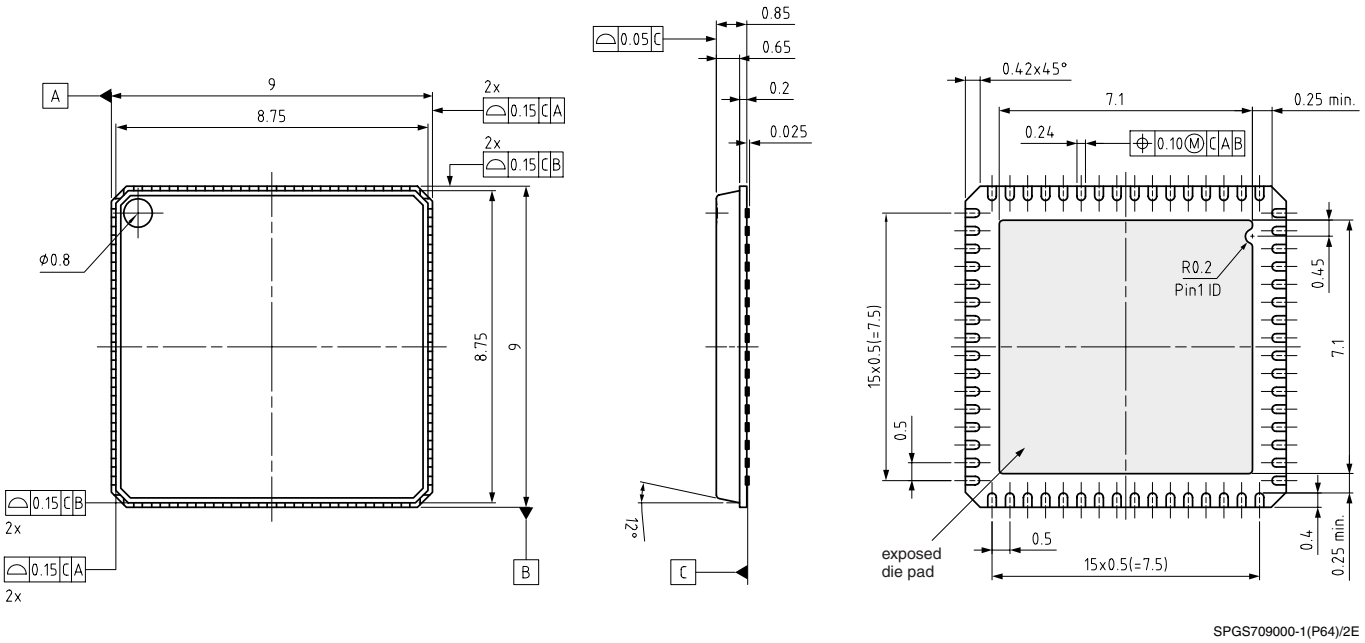

Fig. 0–1:
64-Pin Plastic Quad Flat No leads package
(PQFN64)
Weight approximately 0.235 g
Dimensions in mm

2. Pin Connections and Short Descriptions

NC not connected, leave vacant
LV If not used, leave vacant
X obligatory, pin must be connected as described in application information
VDD connect to positive supply
VSS connect to ground

Pin No. PQFN64 64-pin	Pin Name	Type	Connection (If not used)	Short Description
1	AGNDC		X	Analog reference voltage
2	MICIN	IN	LV	Input for internal microphone amplifier
3	MICBI	IN	LV	Bias for internal microphone
4	INL	IN	LV	Left A/D input
5	INR	IN	LV	Right A/D input
6	TE	IN	X	Test enable
7	XTI	IN	X	Crystal oscillator (ext. clock) input
8	XTO	OUT	LV	Crystal oscillator output
9	$\overline{\text{POR}}$	IN	X	Power on reset, active low
10	VSS	SUPPLY	X	DSP supply ground
11	XVSS	SUPPLY	X	Digital output supply ground
12	VDD	SUPPLY	X	DSP supply
13	XVDD	SUPPLY	X	Digital output supply
14	I2CVDD	SUPPLY	X	I^2C supply
15	DVS	IN	X	I^2C device address selector
16	VSENS1	IN/OUT	VDD	Sense input and power output of DC/DC 1 converter
17	DCSO1	SUPPLY	LV	DC/DC 1 switch output
18	DCSG1	SUPPLY	VSS	DC/DC 1 switch ground
19	DCSG2	SUPPLY	VSS	DC/DC 2 switch ground
20	DCSO2	SUPPLY	LV	DC/DC 2 switch output
21	VSENS2	IN/OUT	VDD	Sense input and power output of DC/DC 2 converter
22	DCEN	IN	VSS	DC/DC enable (both converters)
23	CLKO	OUT	LV	Clock output
24	I2CC	IN/OUT	X	I^2C clock
25	I2CD	IN/OUT	X	I^2C data

Pin No. PQFN64 64-pin	Pin Name	Type	Connection (If not used)	Short Description
26	SYNC	OUT	LV	Sync output
27	VBAT	IN	LV	Battery voltage monitor input
28	PUP	OUT	LV	DC Converters Power-Up Signal
29	$\overline{\text{EOD}}$	OUT	LV	PIO end of DMA, active low
30	$\overline{\text{PRTR}}$	OUT	LV	PIO ready to read, active low
31	$\overline{\text{PRTW}}$	OUT	LV	PIO ready to write, active low
32	PR	IN	VDD	PIO DMA request, active high
33	$\overline{\text{PCS}}$	IN	VSS	PIO chip select, active low
34	PI19	IN/OUT	LV	PIO data bit[7] (MSB)
35	PI18	IN/OUT	LV	PIO data bit[6]
36	PI17	IN/OUT	LV	PIO data bit[5]
37	PI16	IN/OUT	LV	PIO data bit[4]
38	PI15	IN/OUT	LV	PIO data bit[3]
39	PI14	IN/OUT	LV	PIO data bit[2]
40	PI13	IN/OUT	LV	PIO data bit[1]
41	PI12	IN/OUT	LV	PIO data bit[0] (LSB)
42	SOD	OUT	LV	Serial output data
43	SOI	OUT	LV	Serial output word identification
44	SOC	OUT	LV	Serial output clock
45	SID	IN/OUT	X	Serial input data, interface A
46	SII	IN/OUT	X	Serial input word identification, interface A
47	SIC	IN/OUT	X	Serial input clock, interface A
48	SPDO	OUT	LV	S/PDIF output interface
49	SIBD	IN	VSS	Serial input data, interface B
50	SIBC	IN	VSS	Serial input clock, interface B
51	SIBI	IN	VSS	Serial input word identification, interface B
52	SPDI2	IN	LV	Active differential S/PDIF input 2
53	SPDI1	IN	LV	Active differential S/PDIF input 1
54	SPDIR	IN	LV	Reference differential S/PDIF input 1 and 2
55	FILTL	IN	X	Feedback input for left amplifier
56	AVDD0	SUPPLY	X	Analog supply for output amplifiers

Pin No. PQFN64 64-pin	Pin Name	Type	Connection (If not used)	Short Description
57	OUTL	OUT	LV	Left analog output
58	OUTR	OUT	LV	Right analog output
59	AVSS0	SUPPLY	X	Analog ground for output amplifiers
60	FILTR	IN	X	Feedback for right output amplifier
61	AVSS1	SUPPLY	X	Analog ground
62	VREF		X	Analog reference ground
63	PVDD	SUPPLY	X	Internal power supply
64	AVDD1	SUPPLY	X	Analog Supply

4. Electrical Characteristics

4.1. Absolute Maximum Ratings

Symbol	Parameter	Pin Name	Min.	Max.	Unit
T_A	Ambient operating temperature – operating conditions – extended temperature range[1)]		 0 –40	 65 65	 °C °C
T_S	Storage temperature		–40	125	°C
P_{TOT}	Power dissipation	VDD, XVDD, AVDD0/1, I2CVDD		650	mW

[1)] The functionality of the device in the "extended temperature range" was checked by electrical characterization on sample base. Data sheet parameters are valid for "operating conditions" only.

Stresses beyond those listed in the “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only. Functional operation of the device at these or any other conditions beyond those indicated in the “Recommended Operating Conditions/Characteristics” of this specification is not implied. Exposure to absolute maximum ratings conditions for extended periods may affect device reliability.