To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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M62494SP/FP

SRS 3D Stereo + SRS 3D Mono 1Chip

REJ03F0220-0201
Rev.2.01
Mar 31, 2008

Description

M62494 has SRS 3D STEREO and SRS 3D MONO.

There are three modes, those are SRS 3D stereo SRS 3D mono and bypass.

Each mode can be set by terminals.

Features

- Each mode can be set by terminals.
- Mute Function

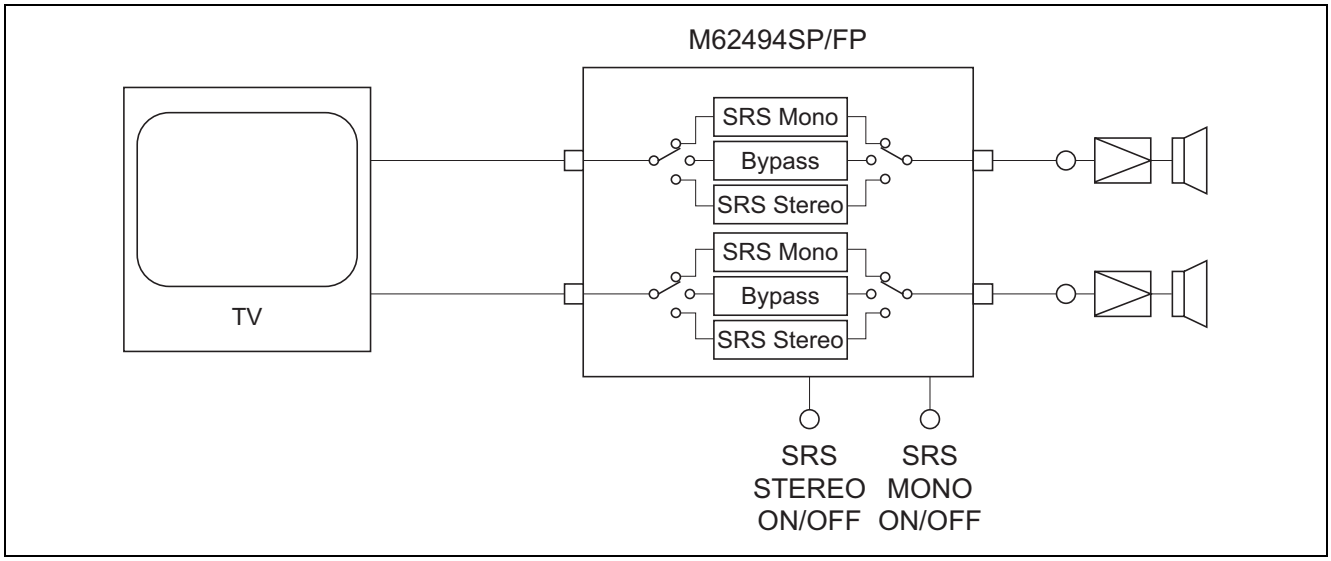
Application

TV, Mini-Stereo, etc

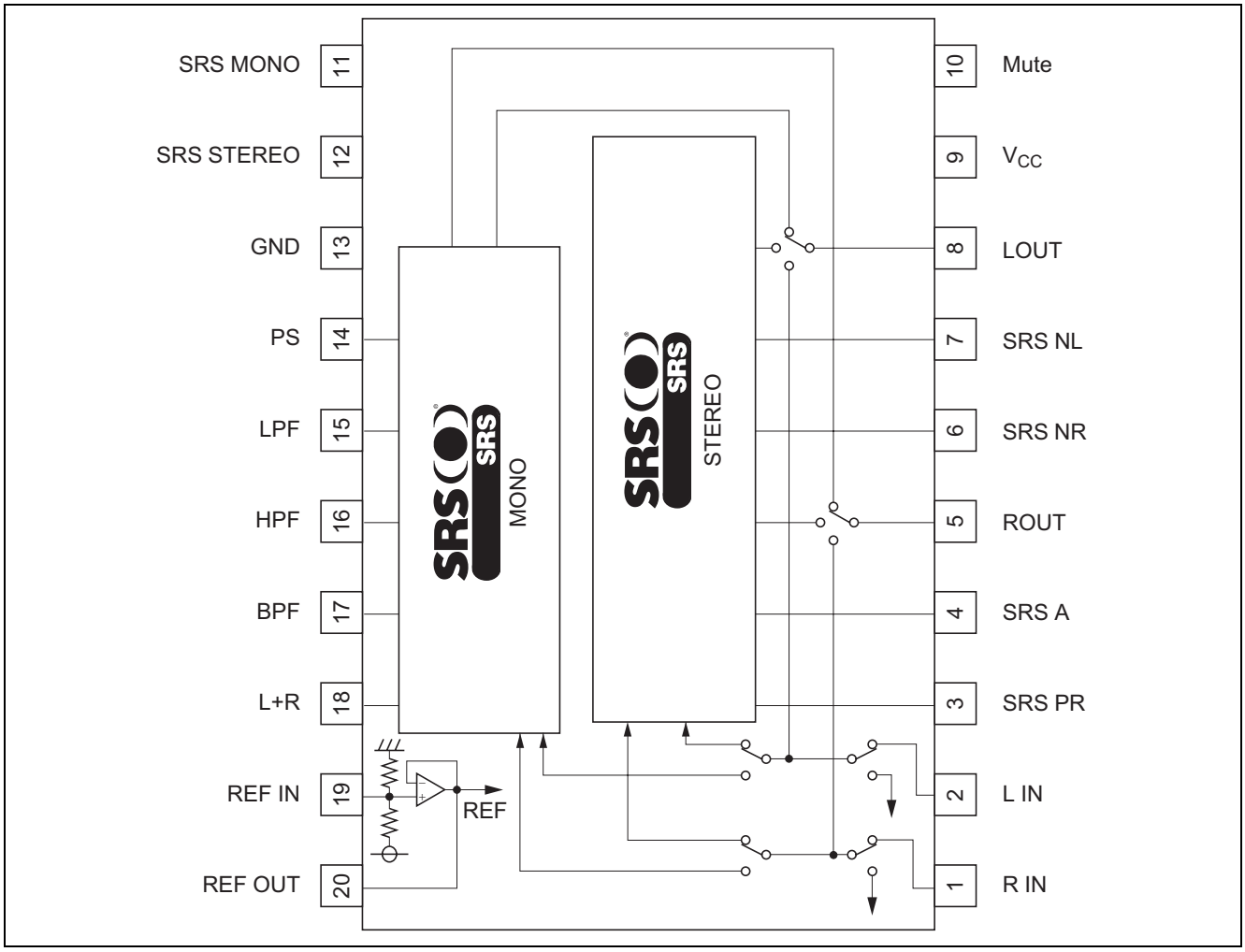
Recommended Operating Condition

- Supply voltage range: 6 to 9.5 V
- Rated supply voltage: 9 V

System Block Diagram

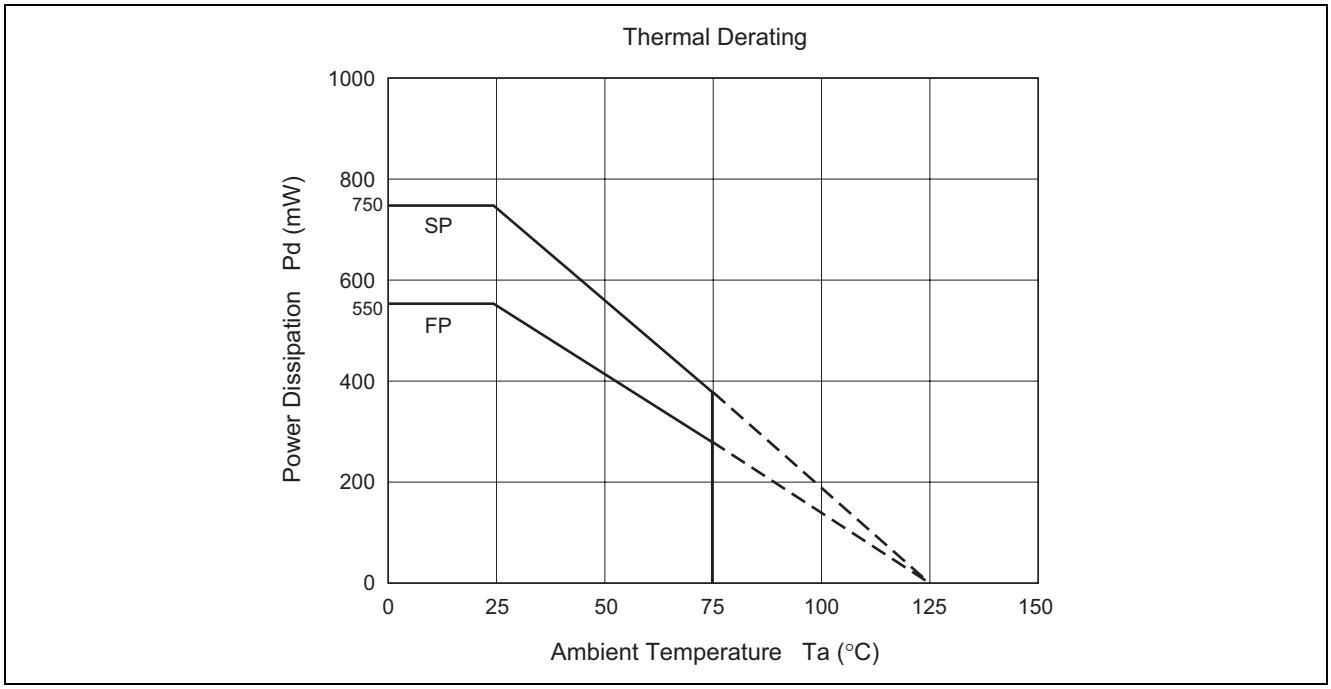


Block Diagram



Absolute Maximum Ratings

Item	Symbol	Ratings	Unit	Conditions
Supply voltage	V_{CC}	13.0	V	
Power dissipation	Pd	750 (SP)/550 (FP)	mW	Ta ≤ 25°C
Thermal derating	Kθ	7.5 (SP)/5.5 (FP)	mW/°C	Ta > 25°C
Operating temperature	Topr	–20 to 75	°C	
Storage temperature	Tstg	–40 to 125	°C	



Recommended Operating Conditions

Item	Symbol	Min	Typ	Max	Unit	Conditions
Supply voltage	V_{CC}	4.5	9.0	12.0	V	
High level input voltage	V_{IH}	2.1	—	V_{CC}	V	Pin-10, 11, 12
Low level input voltage	V_{IL}	0	—	0.8	V	Pin-10, 11, 12

Electrical Characteristics

(1) Power Supply Characteristics

Item	Symbol	Min	Typ	Max	Unit	Conditions
Circuit current	I_{CC}	—	16	35	mA	

(2) Input/Output Characteristics

(V_{CC} = 9 V, Ta = 25°C, Vi = 500 mVrms, pin 10 = 0 V)

Item	Symbol	Limits			Unit	Conditions		Conditions
		Min	Typ	Max		Input	Output	
Input-output voltage gain1	Gv1	–3	0	+3	dB	pin1, 2 f = 1kHz	Pin5, 8 RL = 10kΩ	Bypass (pin11, 12 = 0V)
Input-output voltage gain2	G_V2	–0.5	+2.5	+5.5	dB	pin1, 2 f = 1kHz	Pin5, 8 RL = 10kΩ	SRS Stereo (pin12 = 5V/pin11 = 0V)
Input-output voltage gain3	G_V3	+7	+10	+13	dB	pin1, 2 f = 100Hz	Pin5, 8 RL = 10kΩ	SRS Stereo (pin12 = 5V/pin11 = 0V)
Input-output voltage gain4	G_V4	+4.5	+7.5	+10.5	dB	pin1, 2 f = 100Hz	Pin8 RL = 10kΩ	SRS Mono (pin12 = 0V/pin11 = 5V)
Input-output voltage gain5	G_V5	+2.5	+6	+9.5	dB	pin1, 2 f = 10kHz	Pin8 RL = 10kΩ	SRS Mono (pin12 = 0V/pin11 = 5V)
Maximum output voltage	V_{OM}	1.8	2.2	—	Vrms	pin1, 2 f = 1kHz	Pin5, 8 THD = 1% IHF-A filter RL = 10kΩ	Bypass (pin11, 12 = 0V)
Total harmonic distortion	THD	—	0.01	0.05	%	Pin1, 2 f = 1kHz Vi = 0dBm	Pin5, 8 DIN-A filter RL = 10kΩ	Bypass (pin11, 12 = 0V)
Mute	MUTE	—	55	45	dB	Pin1, 2 f = 1kHz Vi = 0dBm	Pin5, 8 IHF-A filter RL = 10kΩ	Mute (pin10 = 5V/pin11, 12 = 0V)

(V_{CC} = 9 V, Ta = 25°C, pin 10 = 0 V)

Item	Symbol	Limits			Unit	Conditions		Conditions
		Min	Typ	Max		Input	Output	
Output noise voltage1	V_{NO1}	—	3	10	μVrms		IHF-A filter	Bypass (pin11, 12 = 0V)
Output Noise voltage2	V_{NO2}	—	30	100	μVrms		IHF-A filter	SRS Stereo (pin12 = 5V/pin11 = 0V)
Output noise voltage2	V_{NO3}	—	30	100	μVrms		IHF-A filter	SRS Mono (pin12 = 0V/pin11 = 5V)

Switch Condition and the Mode

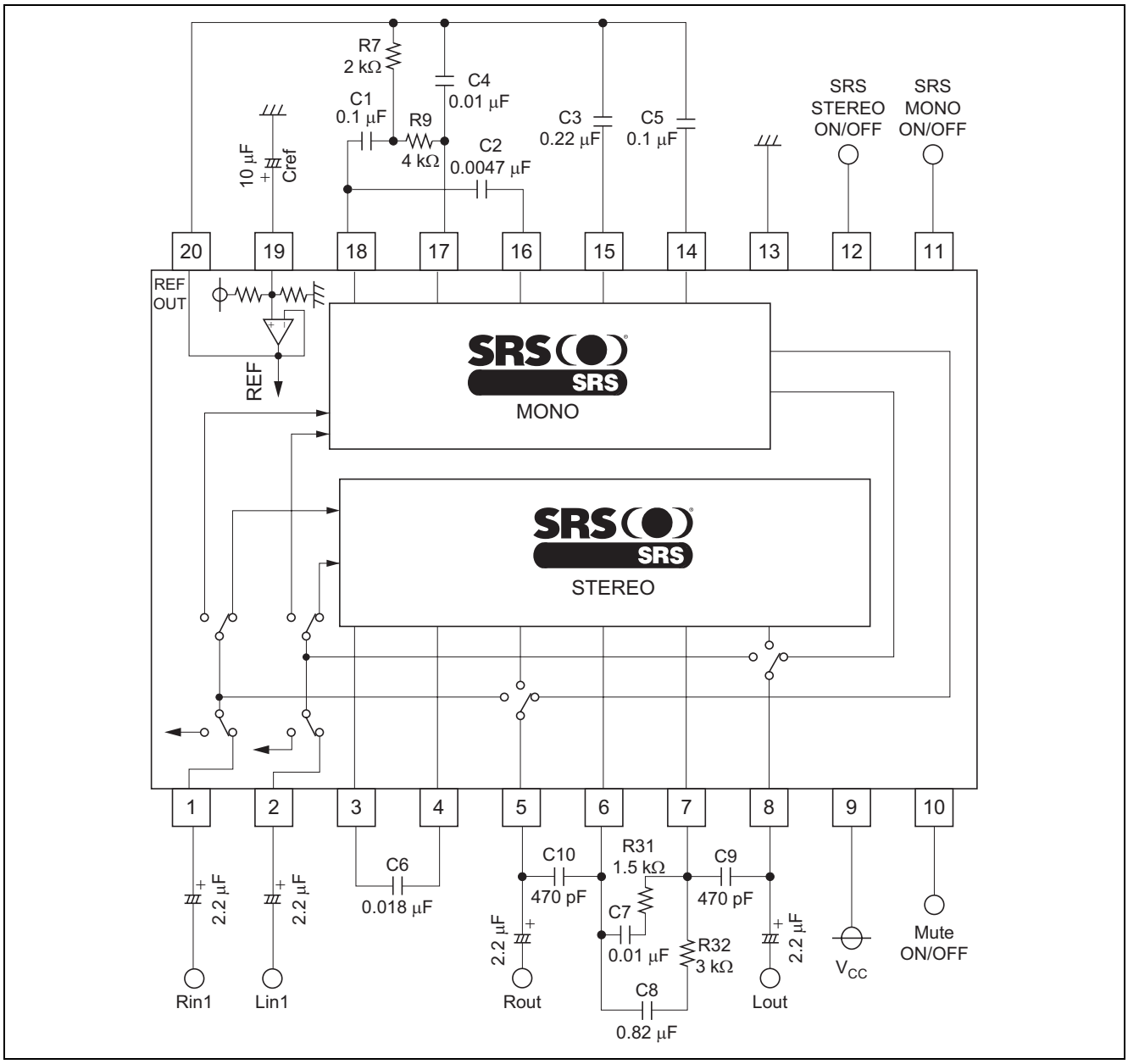
(10) Mute	Mute Switch
ON	H
OFF	L

(11) SRS MONO	SRS MONO Switch
ON	H
OFF	L

(12) SRS STEREO	SRS ON/OFF Switch
ON	H
OFF	L

Note: Bypass mode can be set by both SRS STEREO switch and SRS MONO switch are set to “L”.

SRS Stereo/Mono/Bypass Version

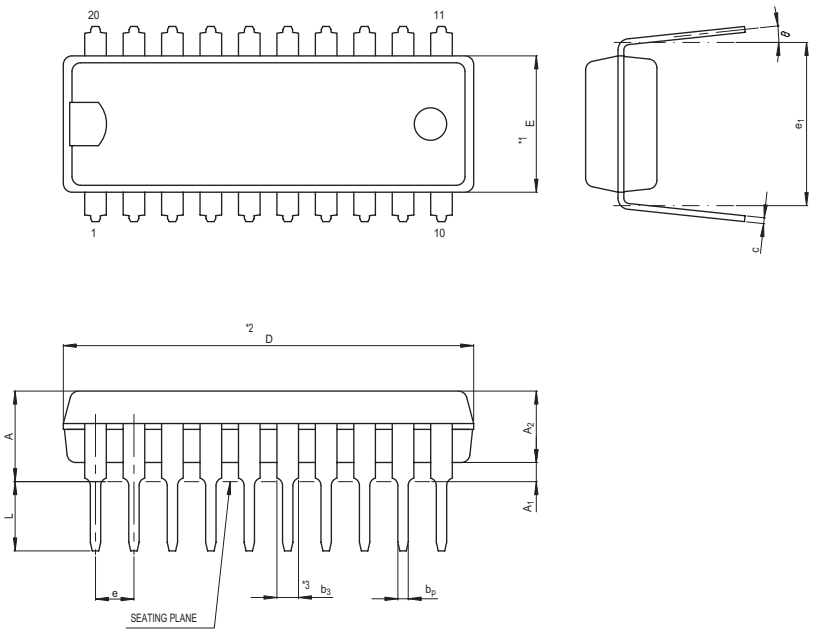


Note

Each switches (SRS ON/OFF, SRS MONO ON/OFF Switches) does not have the countermeasure for click noise, so that we recommend outside mute circuit.

Package Dimensions

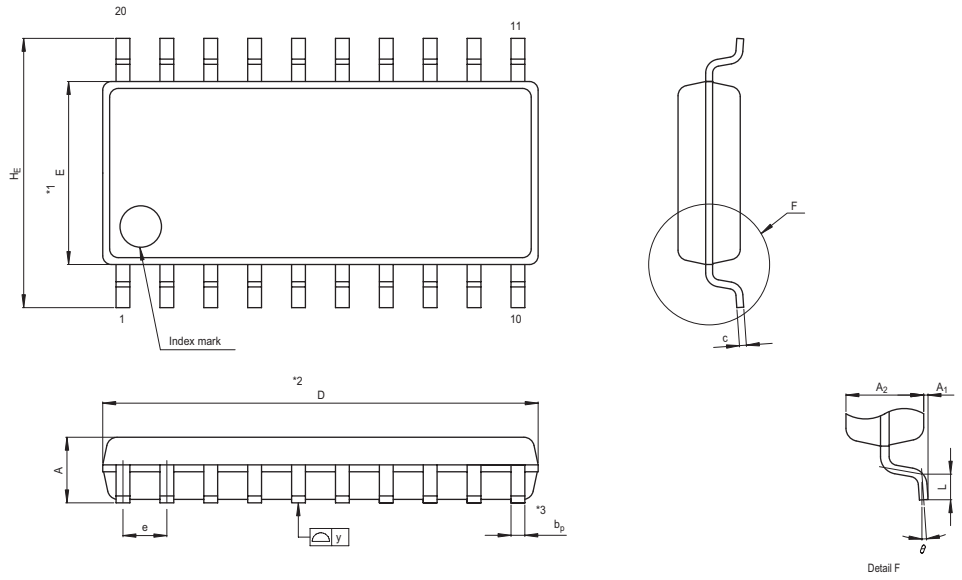
JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
P-SDIP20-6.3x19-1.78	PRDP0020BA-A	20P4B	1.0g



NOTE)
1. DIMENSIONS "*1" AND "*2" DO NOT INCLUDE MOLD FLASH.
2. DIMENSION "*3" DOES NOT INCLUDE TRIM OFFSET.

Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
e_1	7.32	7.62	7.92
D	18.8	19.0	19.2
E	6.15	6.3	6.45
A	—	—	4.5
A_1	0.51	—	—
A_2	—	3.3	—
b_p	0.38	0.48	0.58
b_3	0.9	1.0	1.3
c	0.22	0.27	0.34
θ	0°	—	15°
e	1.528	1.778	2.028
L	3.0	—	—

JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
P-SOP20-5.3x12.6-1.27	PRSP0020DA-A	20P2N-A	0.3g



NOTE)
1. DIMENSIONS "*1" AND "*2" DO NOT INCLUDE MOLD FLASH.
2. DIMENSION "*3" DOES NOT INCLUDE TRIM OFFSET.

Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	12.5	12.6	12.7
E	5.2	5.3	5.4
A_2	—	1.8	—
A_1	0	0.1	0.2
A	—	—	2.1
b_p	0.35	0.4	0.5
c	0.18	0.2	0.25
θ	0°	—	8°
H_E	7.5	7.8	8.1
e	1.12	1.27	1.42
y	—	—	0.1
L	0.4	0.6	0.8

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Colophon .7.2