

Power MOSFETs

Recommended mounting pad for Renesas Power MOSFETs

Introduction

This document explains the recommended mounting pad for Renesas Power MOSFETs.

Contents

1. Package line-up.....	2
2. Mounting pad dimensions.....	3
2.1 DPAK(S), MP-3A	3
2.2 MP-3ZK, ZP	4
2.3 HSON.....	5
2.4 HSON Dual	5
2.5 HWSO8-8	6
2.6 LDKAK(S)	6
2.7 LDKAK.....	7
2.8 MP-25ZK, ZP	7
2.9 MP-25ZT	8
2.10 MP-25ZU.....	8
2.11 SOP-8	9
2.12 WPAK	9
2.13 μ SO8-FL	10
2.14 SO8-FL	10
2.15 TOLL.....	11
2.16 TOLG	11
2.17 TOLT	12

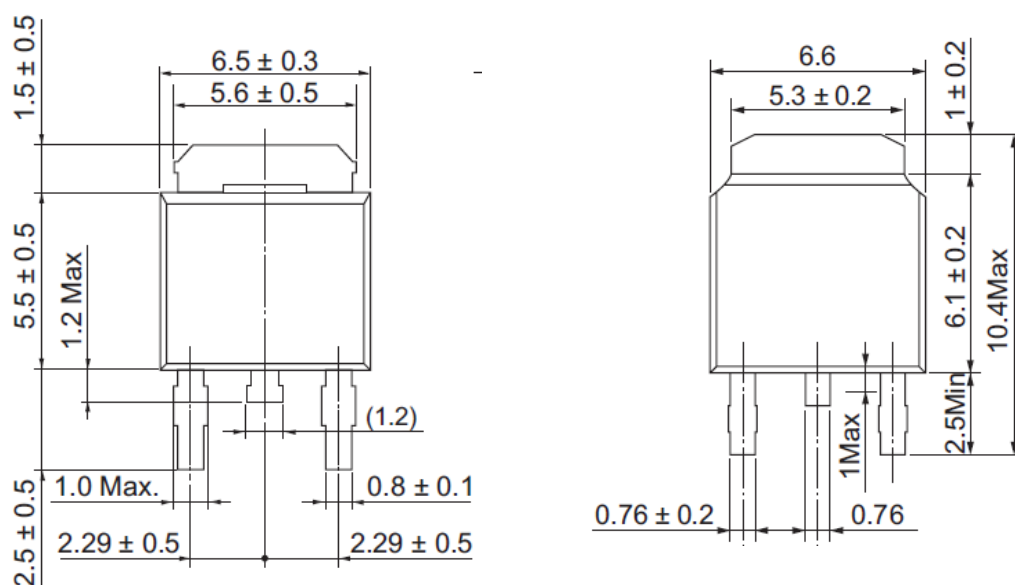
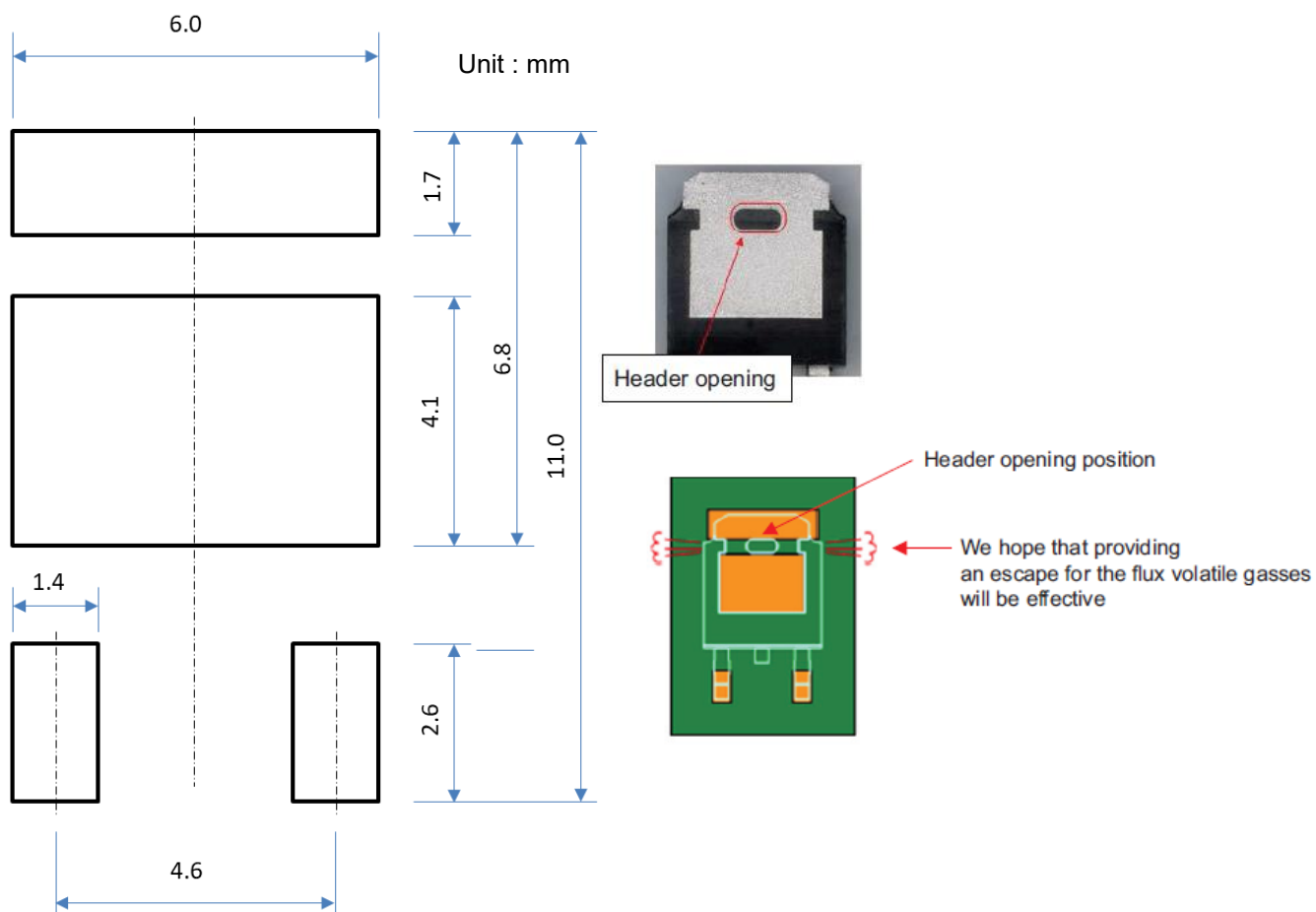
1. Package line-up

Standard Package	Renesas Package	Package size [mm]	Ref. page
TO-252	DPAK, MP-3A	6.6 x 10.4	Page 3
TO-252	MP-3ZK, ZP	6.5 x 9.5	Page 4
SON-8 5x6	HSON	5.0 x 6.0	Page 5
SON-8 5x6 Dual	HSON Dual	5.0 x 6.0	Page 5
SON-8 3.3x3.3	HWSO8-8	3.3 x 3.3	Page 6
TO-263/D2PAK	LDPAK(S)	10.2 x 13.0	Page 6
LFPAK56	LFPAK	4.9 x 5.25	Page 7
TO-263/D2PAK	MP-25ZK, ZP	10.0 x 15.25	Page 7
TO-263-7	MP-25ZT	10.0 x 14.85	Page 8
TO-263-7	MP-25ZU	10.0 x 11.85	Page 8
SOP-8	SOP-8	4.9 x 6.1	Page 9
SON-8 5x6	WPAK	5.1 x 6.1	Page 9
SON-8 3.3x3.3	μSO8-FL	3.3 x 3.3	Page 10
SON-8 5x6	SO8-FL	5.15 x 6.1	Page 10
TOLL	TOLL	9.8 x 11.68	Page 11
TOLG	TOLG	9.9 x 11.7	Page 11
TOLT	TOLT	9.9 x 15.0	Page 12

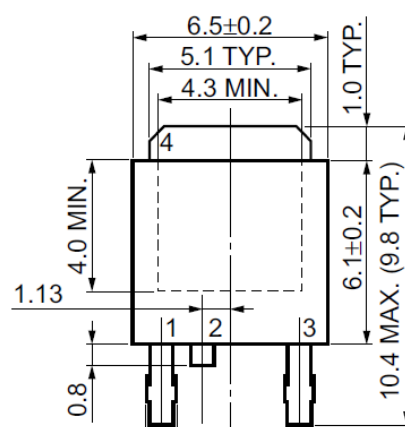
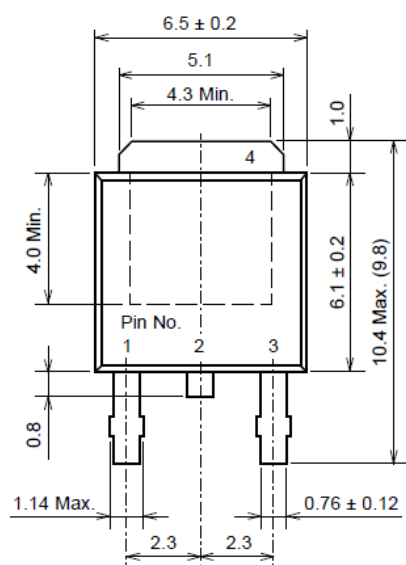
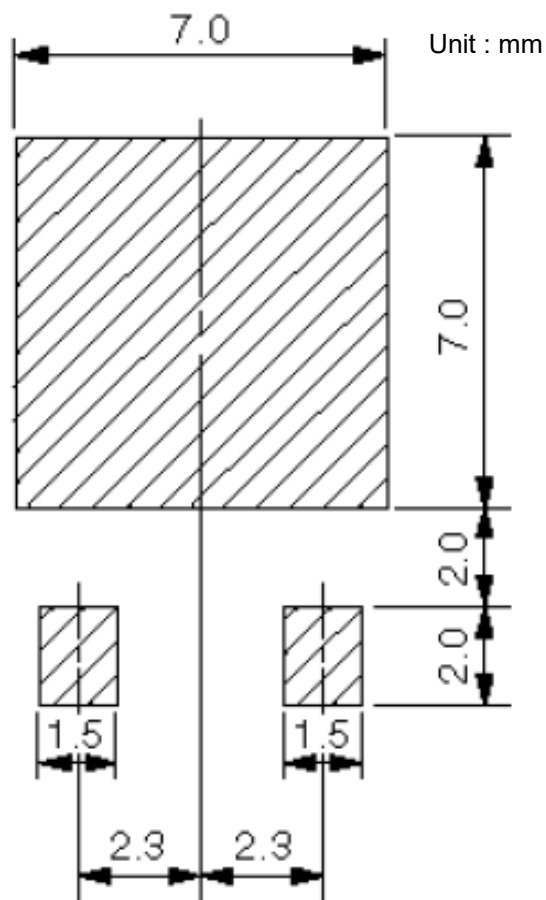
In actual PCB design, please optimize by consideration of mounting density, mountability, and dimensional tolerances, and other factors.

2. Mounting pad dimensions

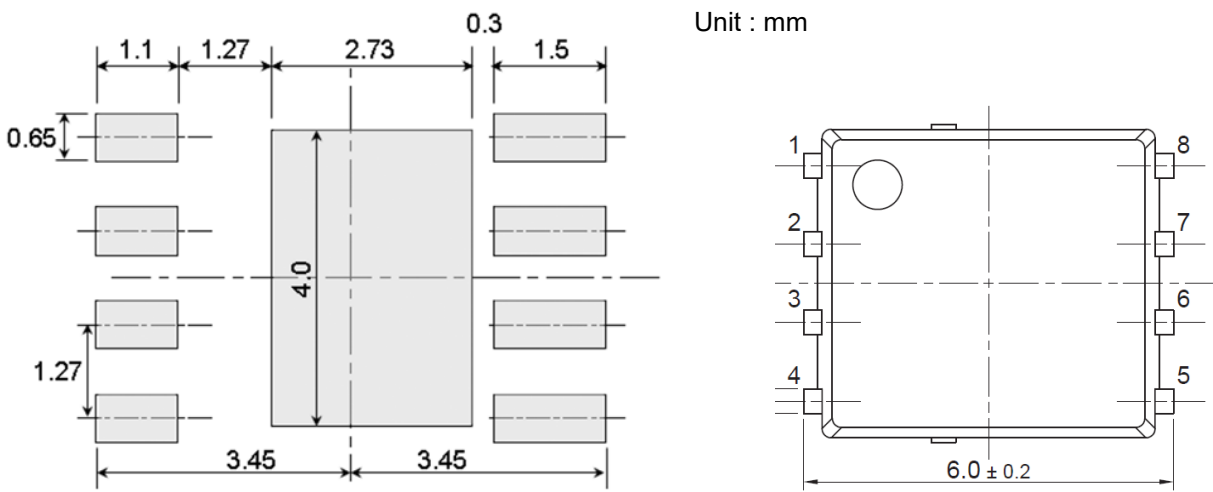
2.1 DPAK(S), MP-3A



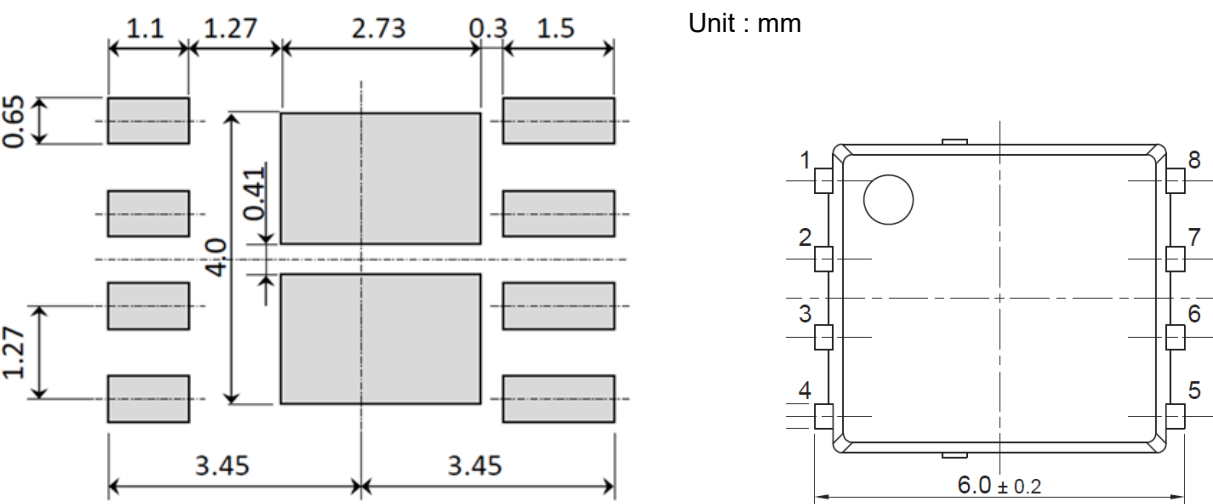
2.2 MP-3ZK, ZP



2.3 HSON



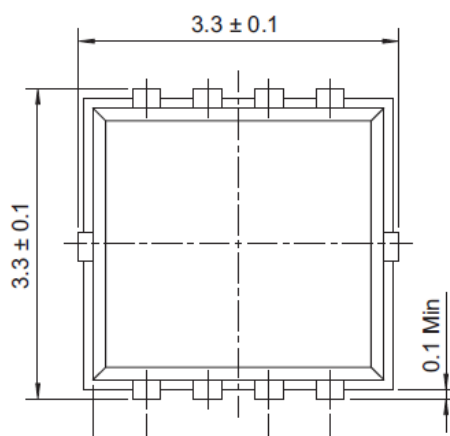
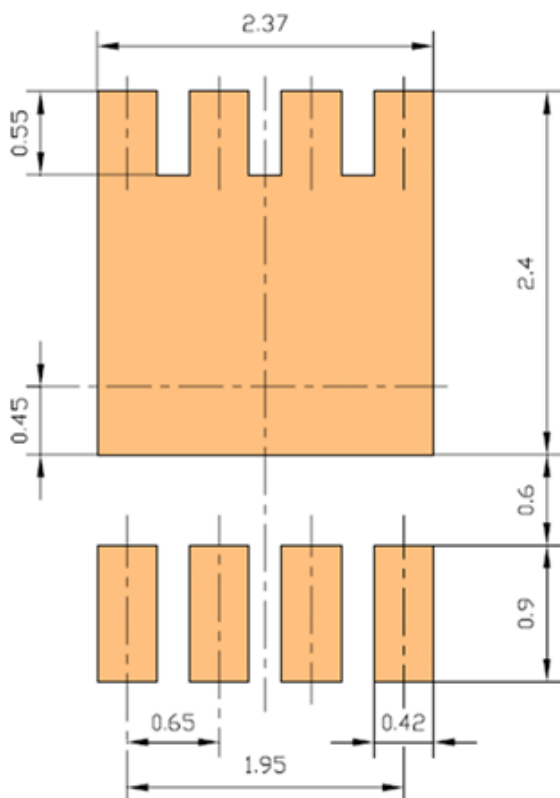
2.4 HSON Dual



	Before reflow heating	After reflow heating
Conceptual drawings	<p>▲ Ends of the mounting pads ▲ Package heat sink</p>	<p>▲ Self alignment ▲ The lead end positions are affected</p>

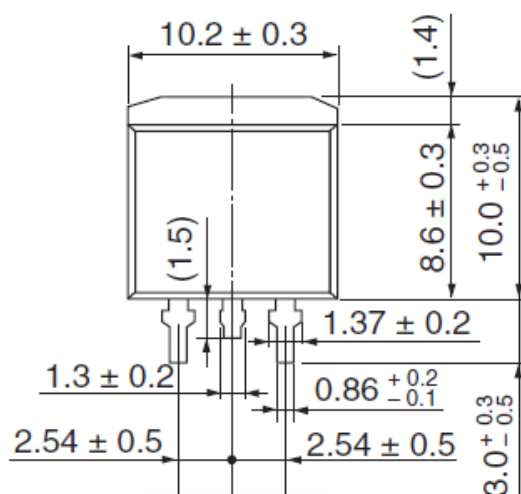
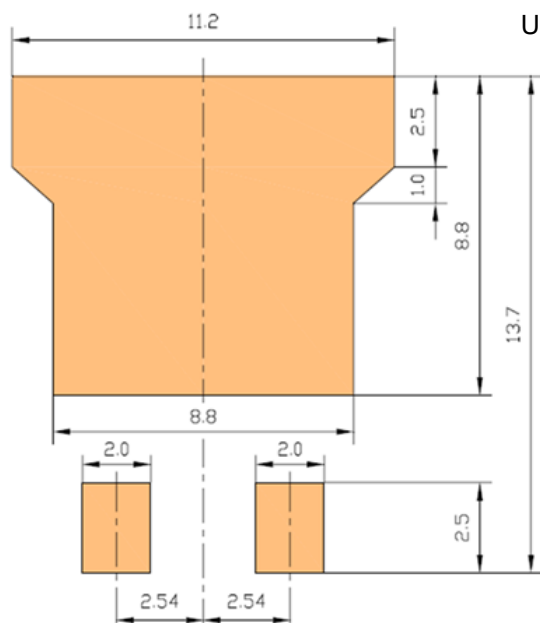
2.5 HWSO-8

Unit : mm



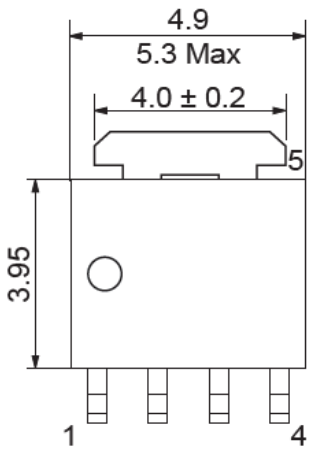
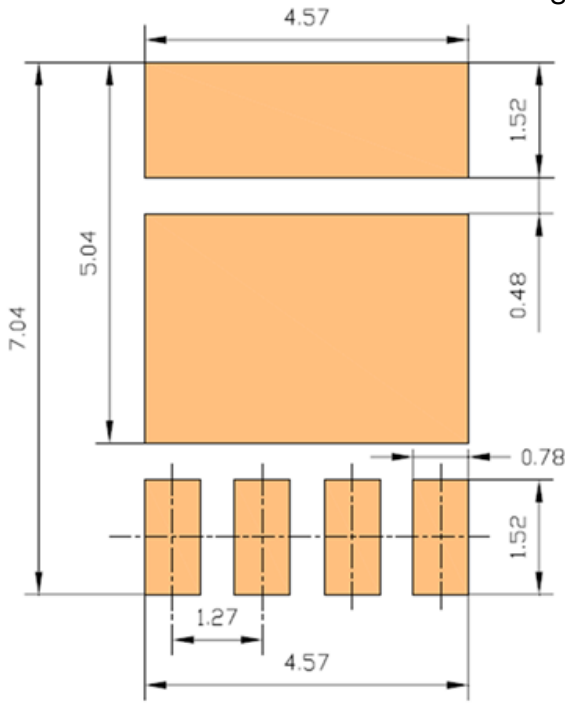
2.6 LDKPAK(S)

Unit : mm



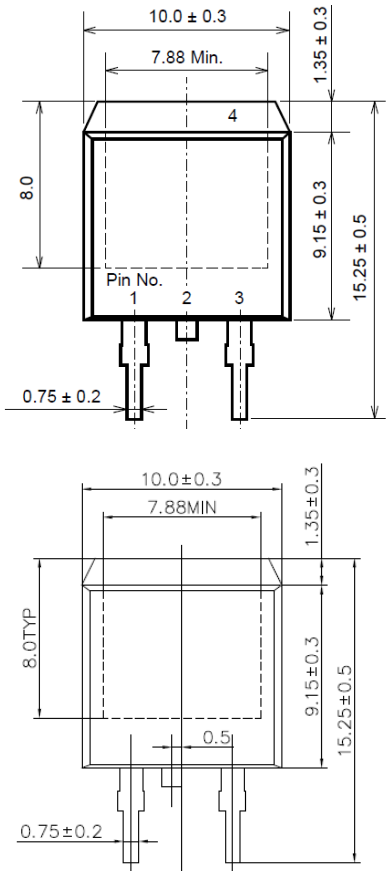
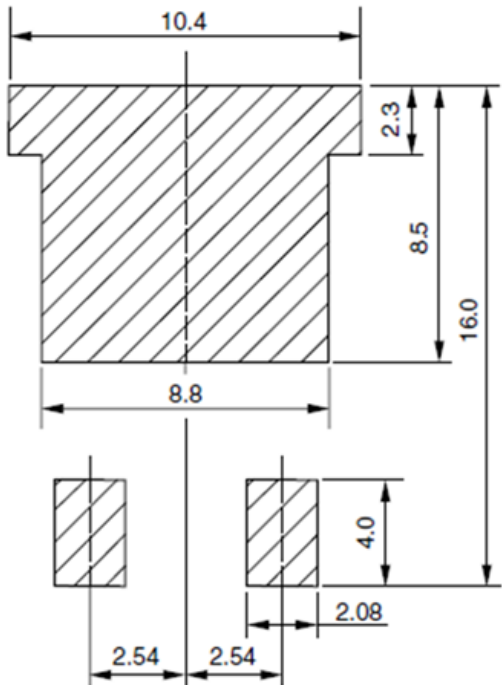
2.7 LFPAK

Unit : mm



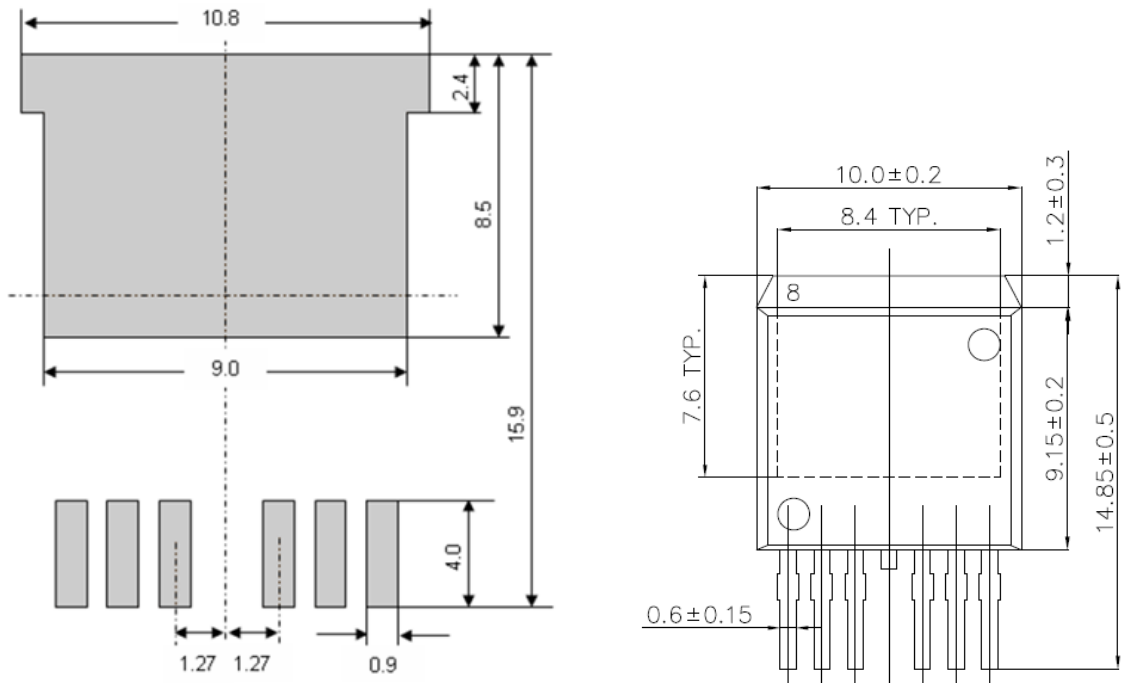
2.8 MP-25ZK, ZP

Unit : mm



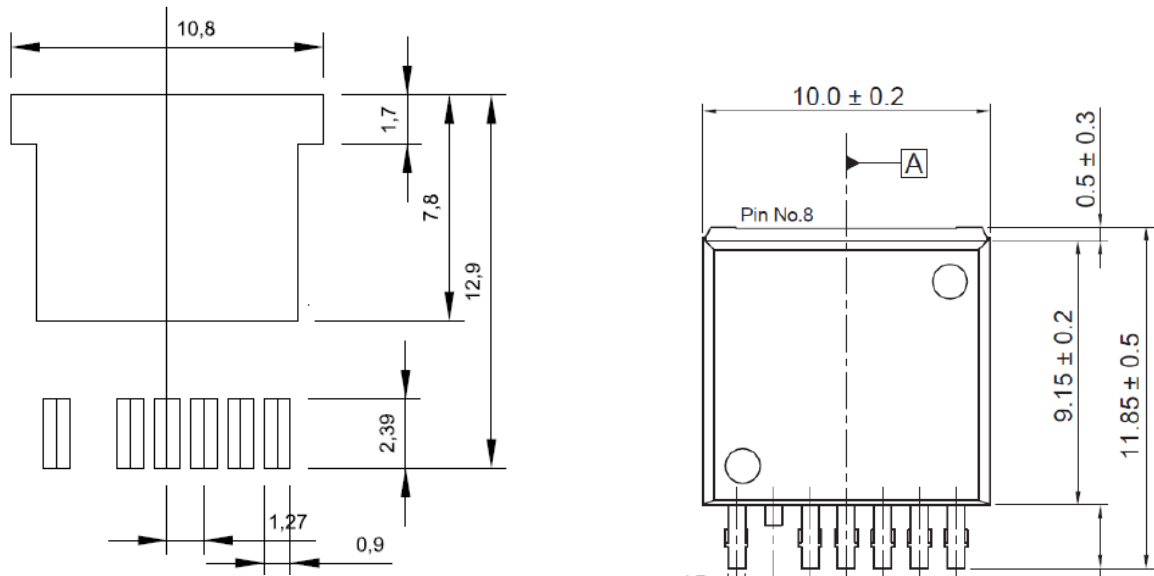
2.9 MP-25ZT

Unit : mm

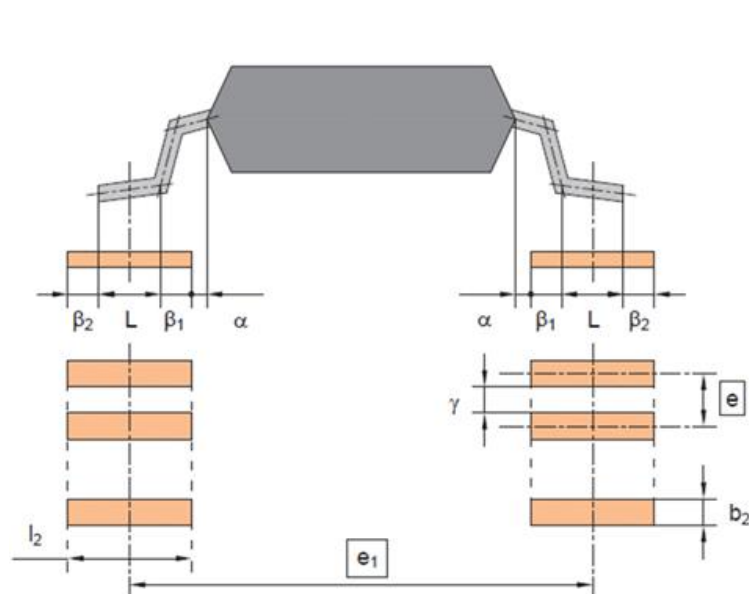


2.10 MP-25ZU

Unit : mm

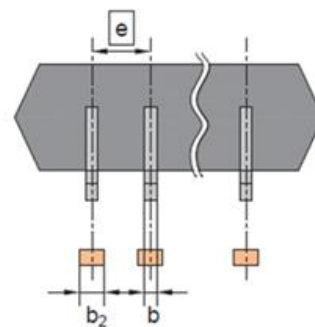


2.11 SOP-8



- Type of package width e_1 : Type 1 225 mil (5.72)
Type 2 300 mil (7.62)
Type 3 375 mil (9.53)
Type 4 450 mil (11.43)
Type 5 525 mil (13.34)
Type 6 600 mil (15.24)

- The constant parts are all the same from type 1 to 6.



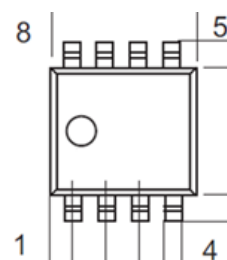
$$l_2 = L + \beta_1 + \beta_2$$

$$b \leq b_2 \leq e - \gamma$$

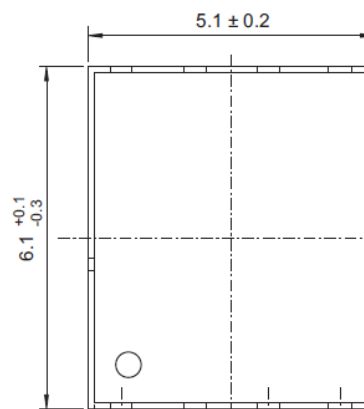
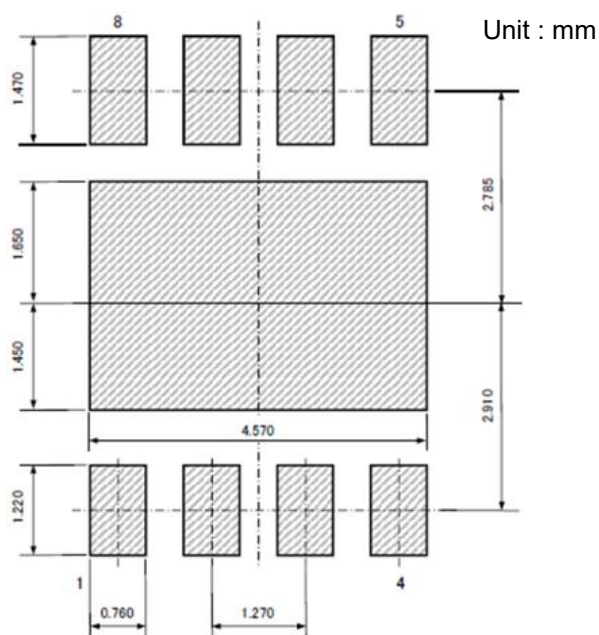
l_2 and b_2 can get by following formula and value e and b from package drawing figure and below parameter table.

• Dimension parameter (Unit: mm)	
e	1.27
α	Over 0.20
β_1	0.20 to 0.50
β_2	0.20
γ	0.30

(Reference values based on the former EIAJ ED-7402-1 standard)

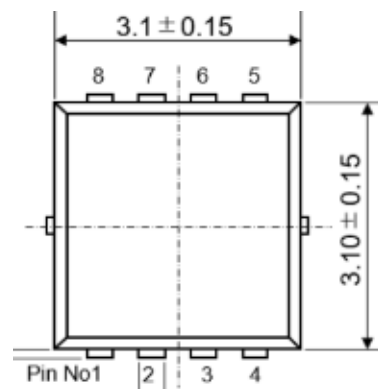
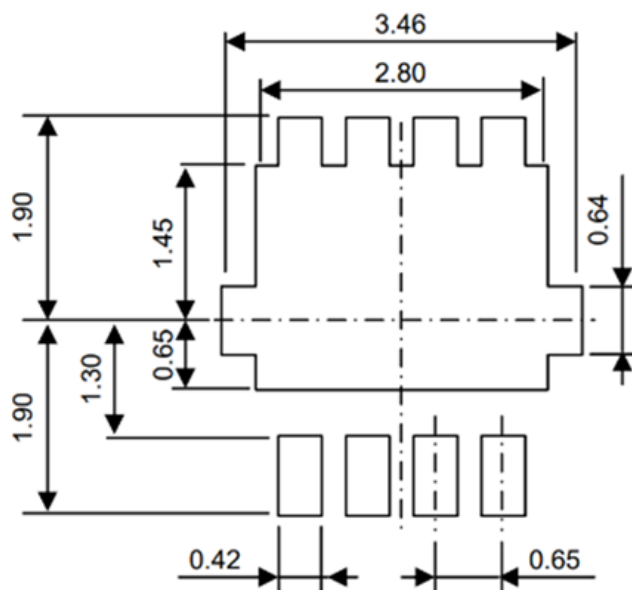


2.12 WPAK



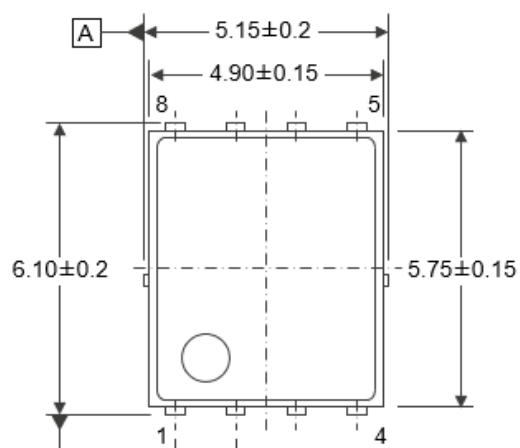
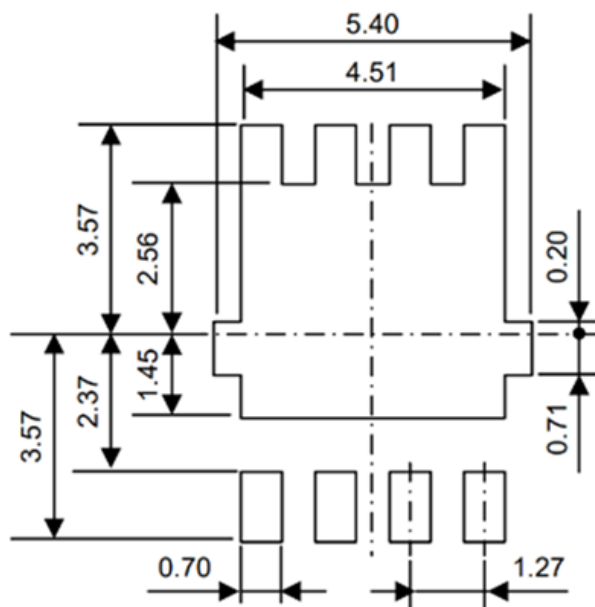
2.13 μ SO8-FL

Unit : mm

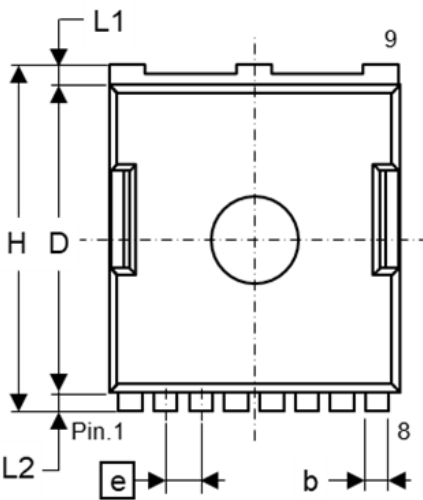
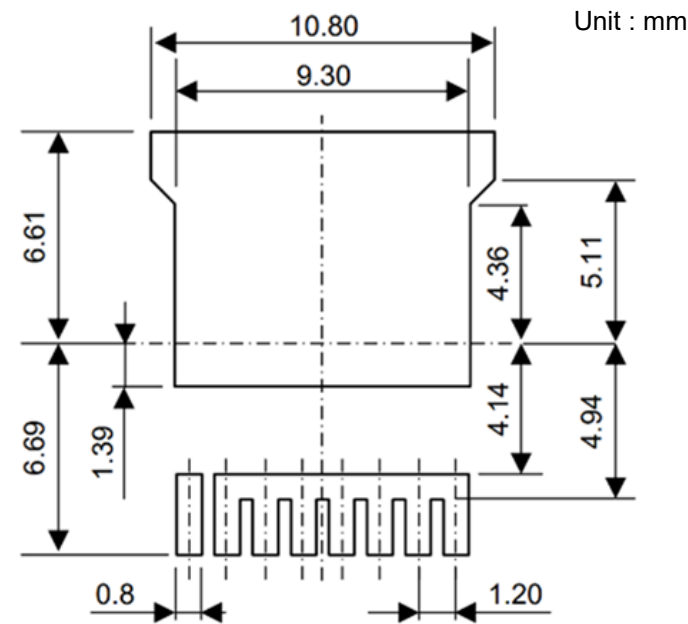


2.14 SO8-FL

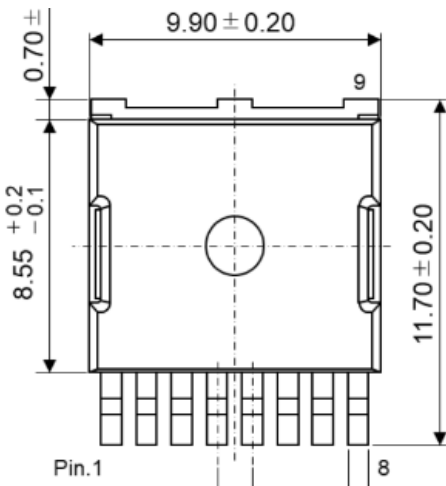
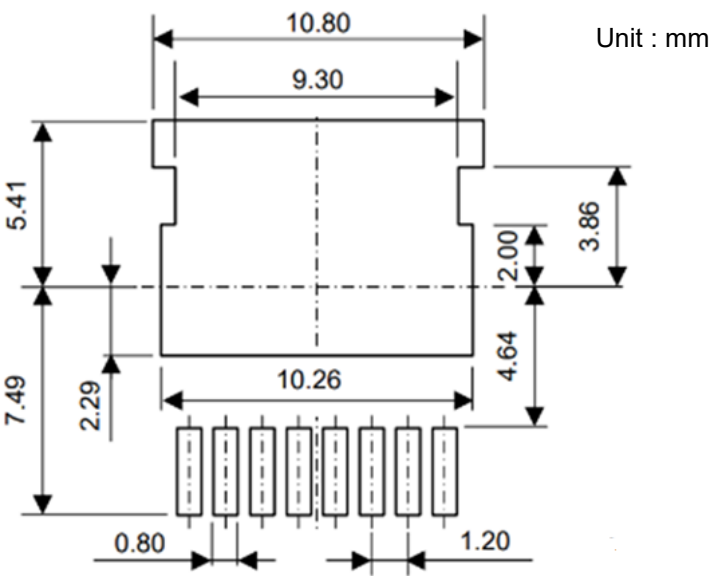
Unit : mm



2.15 TOLL

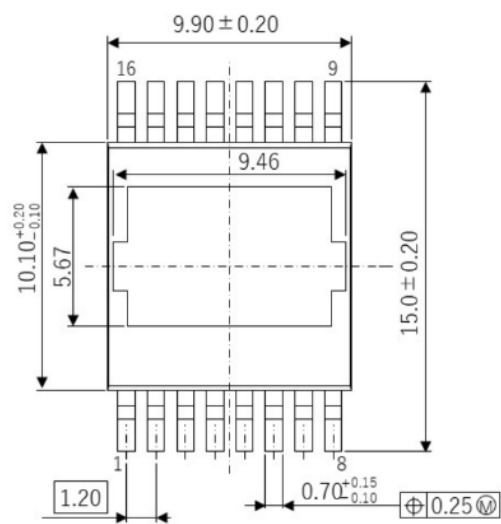
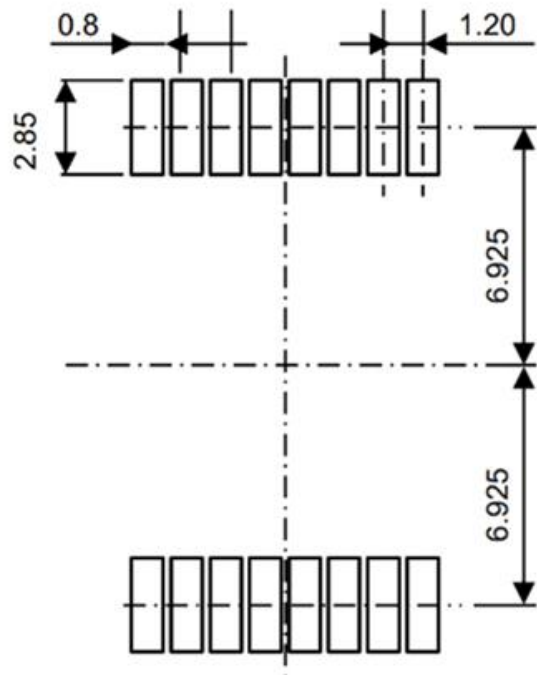


2.16 TOLG



2.17 TOLT

Unit : mm



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