

# RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-RX*-A0263A/E	Rev.	1.00
Title	RX Family Addition of Package Codes for Products with QFN Package		Information Category	Technical Notification		
Applicable Product	RX110 Group, RX111 Group, RX130 Group, RX230 Group, RX231 Group	Lot No.	Reference Document	User's Manual: Hardware for applicable products (see the table at the last page)		
		All				

New package codes are added for the QFN packages of the above applicable products.

Along with this, the orderable part numbers of each product and package dimensions are added as follows.

## 1. Package Codes

New package codes are added for 64-, 48-, and 40-pin QFN packages as shown in Table 1.

**Table 1 List of QFN Packages**

Package	Package Code	Products
40-pin HWQFN	PWQN0040KD-A	RX110, RX111
48-pin HWQFN	PWQN0048KE-A	RX110, RX111, RX130, RX230, RX231
64-pin HWQFN	PWQN0064KD-A	RX230, RX231

## 2. Orderable Part Numbers

Tables 2 to 6 list the orderable part numbers added to the RX110, RX111, RX130, RX230, and RX231 Groups, respectively. The orderable part numbers listed here are current at the time of publication of this Technical Update. Please refer to our website for the latest orderable part numbers.

**Table 2 List of RX110 Group Products**

Group	Part No.	Orderable Part No.	Package	ROM Capacity	RAM Capacity	Operating Frequency (Max.)	Operating Temperature
RX110 (D-version)	R5F51105ADNE	R5F51105ADNE#20	PWQN0048KE-A	128 Kbytes	16 Kbytes	32 MHz	-40 to +85°C
		R5F51105ADNE#00					
	R5F51104ADNE	R5F51104ADNE#20		96 Kbytes			
		R5F51104ADNE#00					
	R5F51103ADNE	R5F51103ADNE#20		64 Kbytes			
		R5F51103ADNE#00					
	R5F51103ADNF	R5F51103ADNF#20		10 Kbytes			
		R5F51103ADNF#00					
	R5F51101ADNE	R5F51101ADNE#20		32 Kbytes			
		R5F51101ADNE#00					
	R5F51101ADNF	R5F51101ADNF#20		8 Kbytes			
		R5F51101ADNF#00					
R5F5110JADNE	R5F5110JADNE#20	16 Kbytes					
	R5F5110JADNE#00						
R5F5110JADNF	R5F5110JADNF#20	8 Kbytes					
	R5F5110JADNF#00						
R5F5110HADNF	R5F5110HADNF#20	8 Kbytes					
	R5F5110HADNF#00						
RX110 (G-version)	R5F51105AGNE	R5F51105AGNE#20	PWQN0048KE-A	128 Kbytes	16 Kbytes	32 MHz	-40 to +105°C
		R5F51105AGNE#00					
	R5F51104AGNE	R5F51104AGNE#20		96 Kbytes			
		R5F51104AGNE#00					
	R5F51103AGNE	R5F51103AGNE#20		64 Kbytes			
		R5F51103AGNE#00					
	R5F51103AGNF	R5F51103AGNF#20		10 Kbytes			
		R5F51103AGNF#00					
	R5F51101AGNE	R5F51101AGNE#20		32 Kbytes			
		R5F51101AGNE#00					
	R5F51101AGNF	R5F51101AGNF#20		8 Kbytes			
		R5F51101AGNF#00					
R5F5110JAGNE	R5F5110JAGNE#20	16 Kbytes					
	R5F5110JAGNE#00						
R5F5110JAGNF	R5F5110JAGNF#20	8 Kbytes					
	R5F5110JAGNF#00						
R5F5110HAGNF	R5F5110HAGNF#20	8 Kbytes					
	R5F5110HAGNF#00						

**Table 3 List of RX111 Group Products**

Group	Part No.	Orderable Part No.	Package	ROM Capacity	RAM Capacity	E2 DataFlash	Operating Frequency (Max.)	Operating Temperature
RX111 (D-version)	R5F51118ADNE	R5F51118ADNE#2A	PWQN0048KE-A	512 Kbytes	64 Kbytes	8 Kbytes	32 MHz	-40 to +85°C
		R5F51118ADNE#0A						
	R5F51117ADNE	R5F51117ADNE#2A		384 Kbytes				
		R5F51117ADNE#0A						
	R5F51116ADNE	R5F51116ADNE#2A		256 Kbytes 32 Kbytes				
		R5F51116ADNE#0A						
	R5F51115ADNE	R5F51115ADNE#2A		128 Kbytes				
		R5F51115ADNE#0A						
	R5F51114ADNE	R5F51114ADNE#2A		96 Kbytes				
		R5F51114ADNE#0A						
	R5F51113ADNE	R5F51113ADNE#2A		64 Kbytes				
		R5F51113ADNE#0A						
	R5F51113ADNF	R5F51113ADNF#2A		10 Kbytes				
		R5F51113ADNF#0A						
	R5F51111ADNE	R5F51111ADNE#2A		32 Kbytes				
		R5F51111ADNE#0A						
	R5F51111ADNF	R5F51111ADNF#2A		8 Kbytes				
		R5F51111ADNF#0A						
R5F5111JADNE	R5F5111JADNE#2A	16 Kbytes 8 Kbytes						
	R5F5111JADNE#0A							
R5F5111JADNF	R5F5111JADNF#2A	8 Kbytes						
	R5F5111JADNF#0A							
RX111 (G-version)	R5F51118AGNE	R5F51118AGNE#2A	PWQN0040KD-A	512 Kbytes	64 Kbytes	8 Kbytes	32 MHz	-40 to +105°C
		R5F51118AGNE#0A						
	R5F51117AGNE	R5F51117AGNE#2A		384 Kbytes				
		R5F51117AGNE#0A						
	R5F51116AGNE	R5F51116AGNE#2A		256 Kbytes 32 Kbytes				
		R5F51116AGNE#0A						
	R5F51115AGNE	R5F51115AGNE#2A		128 Kbytes				
		R5F51115AGNE#0A						
	R5F51114AGNE	R5F51114AGNE#2A		96 Kbytes				
		R5F51114AGNE#0A						
	R5F51113AGNE	R5F51113AGNE#2A		64 Kbytes				
		R5F51113AGNE#0A						
	R5F51113AGNF	R5F51113AGNF#2A		10 Kbytes				
		R5F51113AGNF#0A						
	R5F51111AGNE	R5F51111AGNE#2A		32 Kbytes				
		R5F51111AGNE#0A						
	R5F51111AGNF	R5F51111AGNF#2A		8 Kbytes				
		R5F51111AGNF#0A						
R5F5111JAGNE	R5F5111JAGNE#2A	16 Kbytes 8 Kbytes						
	R5F5111JAGNE#0A							
R5F5111JAGNF	R5F5111JAGNF#2A	8 Kbytes						
	R5F5111JAGNF#0A							

**Table 4 List of RX130 Group Products**

Group	Part No.	Orderable Part No.	Package	ROM Capacity	RAM Capacity	E2 DataFlash	Operating Frequency (Max.)	Operating Temperature
RX130 (D-version)	R5F51308ADNE	R5F51308ADNE#20	PWQN0048KE-A	512 Kbytes	48 Kbytes	8 Kbytes	32 MHz	-40 to +85°C
		R5F51308ADNE#00						
	R5F51307ADNE	R5F51307ADNE#20		384 Kbytes				
		R5F51307ADNE#00						
	R5F51306BDNE	R5F51306BDNE#20		256 Kbytes 32 Kbytes				
		R5F51306BDNE#00						
R5F51305ADNE	R5F51305ADNE#20	128 Kbytes 16 Kbytes						
	R5F51305ADNE#00							
R5F51303ADNE	R5F51303ADNE#20	64 Kbytes 10 Kbytes						
	R5F51303ADNE#00							
RX130 (G-version)	R5F51308AGNE	R5F51308AGNE#20	PWQN0048KE-A	512 Kbytes	48 Kbytes	8 Kbytes	32 MHz	-40 to +105°C
		R5F51308AGNE#00						
	R5F51307AGNE	R5F51307AGNE#20		384 Kbytes				
		R5F51307AGNE#00						
	R5F51306BGNE	R5F51306BGNE#20		256 Kbytes 32 Kbytes				
		R5F51306BGNE#00						
R5F51305AGNE	R5F51305AGNE#20	128 Kbytes 16 Kbytes						
	R5F51305AGNE#00							
R5F51303AGNE	R5F51303AGNE#20	64 Kbytes 10 Kbytes						
	R5F51303AGNE#00							

**Table 5 List of RX230 Group Products**

Group	Part No.	Orderable Part No.	Package	ROM Capacity	RAM Capacity	E2 DataFlash	Operating Frequency (Max.)	Security Function	SDHI	CAN	Operating Temperature
RX230 (D-version)	R5F52306ADND	R5F52306ADND#20	PWQN0064KD-A	256 Kbytes	32 Kbytes	8 Kbytes	54 MHz	Not available	Not available	Not available	-40 to +85°C
		R5F52306ADND#00									
	R5F52306ADNE	R5F52306ADNE#20	PWQN0048KE-A								
		R5F52306ADNE#00									
R5F52305ADND	R5F52305ADND#20	PWQN0064KD-A	128 Kbytes								
	R5F52305ADND#00										
R5F52305ADNE	R5F52305ADNE#20	PWQN0048KE-A									
	R5F52305ADNE#00										
RX230 (G-version)	R5F52306AGND	R5F52306AGND#20	PWQN0064KD-A	256 Kbytes	32 Kbytes	8 Kbytes	54 MHz	Not available	Not available	Not available	-40 to +105°C
		R5F52306AGND#00									
	R5F52306AGNE	R5F52306AGNE#20	PWQN0048KE-A								
		R5F52306AGNE#00									
R5F52305AGND	R5F52305AGND#20	PWQN0064KD-A	128 Kbytes								
	R5F52305AGND#00										
R5F52305AGNE	R5F52305AGNE#20	PWQN0048KE-A									
	R5F52305AGNE#00										

**Table 6 List of RX231 Group Products (1 / 2)**

Group	Part No.	Orderable Part No.	Package	ROM Capacity	RAM Capacity	E2 DataFlash	Operating Frequency (Max.)	Security Function	SDHI	CAN	Operating Temperature	
RX231 (D-version)	R5F52318ADND	R5F52318ADND#20	PWQN0064KD-A	512 Kbytes				Not available	Not available	Available		
		R5F52318ADND#00										
	R5F52318BDND	R5F52318BDND#20							Available	Available	Available	
		R5F52318BDND#00										
	R5F52318ADNE	R5F52318ADNE#20	PWQN0048KE-A						Not available	Not available	Available	
		R5F52318ADNE#00										
	R5F52318BDNE	R5F52318BDNE#20			64 Kbytes				Available	Not available	Available	
		R5F52318BDNE#00										
	R5F52317ADND	R5F52317ADND#20	PWQN0064KD-A						Not available	Not available	Available	
		R5F52317ADND#00										
	R5F52317BDND	R5F52317BDND#20			384 Kbytes				Available	Available	Available	
		R5F52317BDND#00										
	R5F52317ADNE	R5F52317ADNE#20	PWQN0048KE-A						Not available	Not available	Available	
		R5F52317ADNE#00										
	R5F52317BDNE	R5F52317BDNE#20				8 Kbytes		54 MHz	Available	Not available	Available	-40 to +85°C
		R5F52317BDNE#00										
	R5F52316ADND	R5F52316ADND#20	PWQN0064KD-A						Not available	Not available	Available	
		R5F52316ADND#00										
	R5F52316CDND	R5F52316CDND#20			256 Kbytes				Not available	Not available	Not available	
		R5F52316CDND#00										
	R5F52316ADNE	R5F52316ADNE#20	PWQN0048KE-A						Not available	Not available	Available	
		R5F52316ADNE#00										
	R5F52316CDNE	R5F52316CDNE#20				32 Kbytes			Not available	Not available	Not available	
		R5F52316CDNE#00										
R5F52315ADND	R5F52315ADND#20	PWQN0064KD-A						Not available	Not available	Available		
	R5F52315ADND#00											
R5F52315CDND	R5F52315CDND#20			128 Kbytes				Not available	Not available	Not available		
	R5F52315CDND#00											
R5F52315ADNE	R5F52315ADNE#20	PWQN0048KE-A						Not available	Not available	Available		
	R5F52315ADNE#00											
R5F52315CDNE	R5F52315CDNE#20							Not available	Not available	Not available		
	R5F52315CDNE#00											

**Table 6 List of RX231 Group Products (2 / 2)**

Group	Part No.	Orderable Part No.	Package	ROM Capacity	RAM Capacity	E2 DataFlash	Operating Frequency (Max.)	Security Function	SDHI	CAN	Operating Temperature				
RX231 (G-version)	R5F52318AGND	R5F52318AGND#20	PWQN0064KD-A	512 Kbytes				Not available	Not available	Available	-40 to +105°C				
		R5F52318AGND#00													
	R5F52318BGND	R5F52318BGND#20	PWQN0048KE-A					64 Kbytes	Available	Available		Available	Not available	Not available	Available
		R5F52318BGND#00													
	R5F52318AGNE	R5F52318AGNE#20	PWQN0048KE-A					64 Kbytes	Available	Not available		Available	Not available	Not available	Available
		R5F52318AGNE#00													
	R5F52318BGNE	R5F52318BGNE#20	PWQN0064KD-A					8 Kbytes	Available	Not available		Available	Not available	Not available	Available
		R5F52318BGNE#00													
	R5F52317AGND	R5F52317AGND#20	PWQN0064KD-A					384 Kbytes	Not available	Not available		Available	Not available	Not available	Available
		R5F52317AGND#00													
	R5F52317BGND	R5F52317BGND#20	PWQN0048KE-A					8 Kbytes	Available	Available		Available	Not available	Not available	Available
		R5F52317BGND#00													
	R5F52317AGNE	R5F52317AGNE#20	PWQN0048KE-A					8 Kbytes	Available	Not available		Available	Not available	Not available	Available
		R5F52317AGNE#00													
	R5F52317BGNE	R5F52317BGNE#20	PWQN0064KD-A					256 Kbytes	Available	Not available		Available	Not available	Not available	Available
		R5F52317BGNE#00													
	R5F52316AGND	R5F52316AGND#20	PWQN0064KD-A					32 Kbytes	Not available	Not available		Available	Not available	Not available	Not available
		R5F52316AGND#00													
	R5F52316CGND	R5F52316CGND#20	PWQN0048KE-A					32 Kbytes	Not available	Not available		Available	Not available	Not available	Not available
		R5F52316CGND#00													
R5F52316AGNE	R5F52316AGNE#20	PWQN0048KE-A	32 Kbytes	Not available	Not available	Available	Not available	Not available	Not available						
	R5F52316AGNE#00														
R5F52316CGNE	R5F52316CGNE#20	PWQN0064KD-A	128 Kbytes	Not available	Not available	Available	Not available	Not available	Not available						
	R5F52316CGNE#00														
R5F52315AGND	R5F52315AGND#20	PWQN0064KD-A	128 Kbytes	Not available	Not available	Available	Not available	Not available	Available						
	R5F52315AGND#00														
R5F52315CGND	R5F52315CGND#20	PWQN0048KE-A	128 Kbytes	Not available	Not available	Available	Not available	Not available	Not available						
	R5F52315CGND#00														
R5F52315AGNE	R5F52315AGNE#20	PWQN0048KE-A	128 Kbytes	Not available	Not available	Available	Not available	Not available	Available						
	R5F52315AGNE#00														
R5F52315CGNE	R5F52315CGNE#20	PWQN0048KE-A	128 Kbytes	Not available	Not available	Available	Not available	Not available	Not available						
	R5F52315CGNE#00														

### 3. Package Dimensions

Figures 1 to 3 shows the package dimensions for 64-pin, 48-pin, 40-pin HWQFN, respectively.

JEITA Package code	RENESAS code	MASS(TYP.)[g]
P-HWQFN064-9x9-0.50	PWQN0064KD-A	0.17

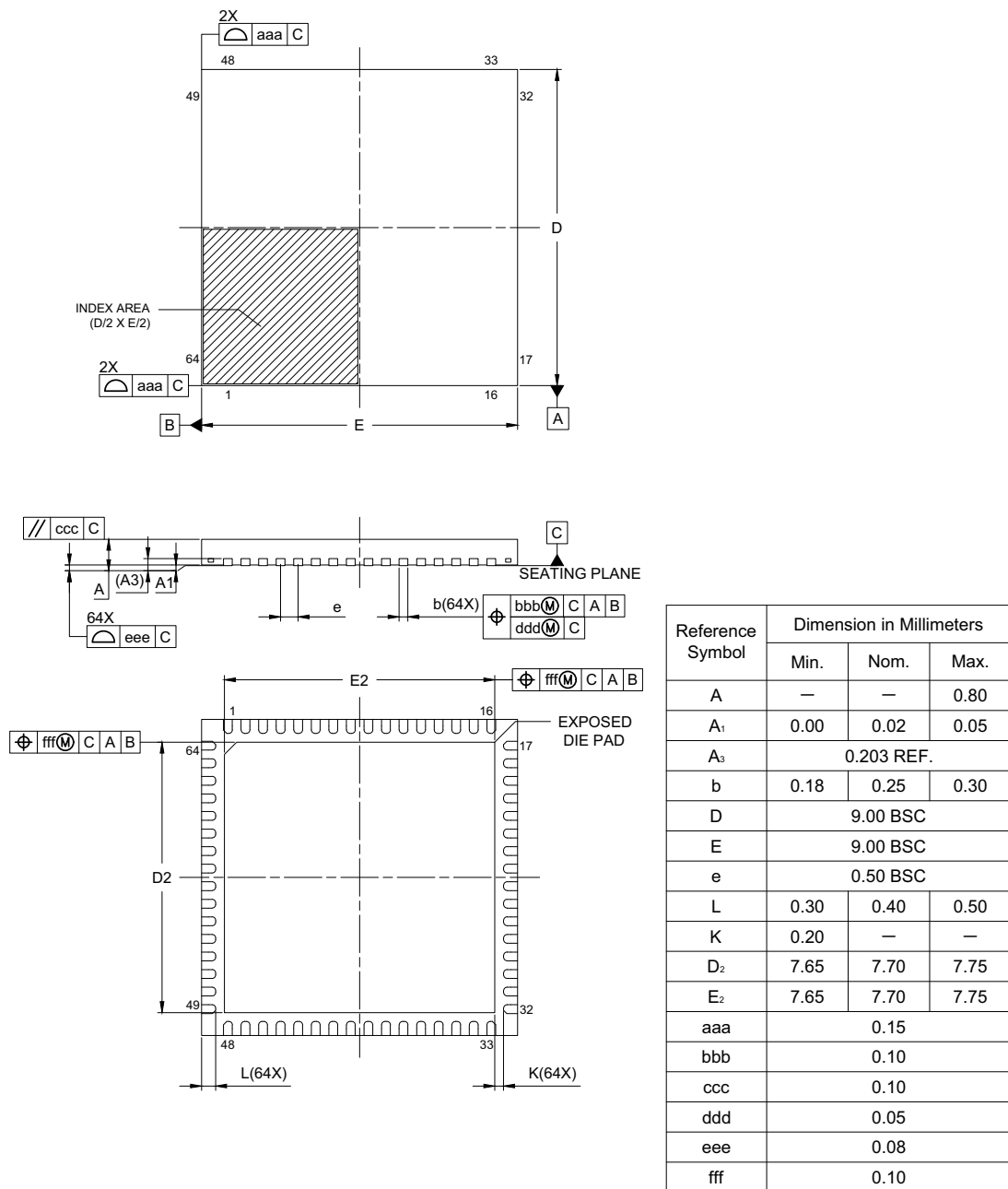


Figure 1. 64-Pin HWQFN (PWQN0064KD-A)

JEITA Package code	RENESAS code	MASS(TYP.)[g]
P-HWQFN048-7x7-0.50	PWQN0048KE-A	0.13

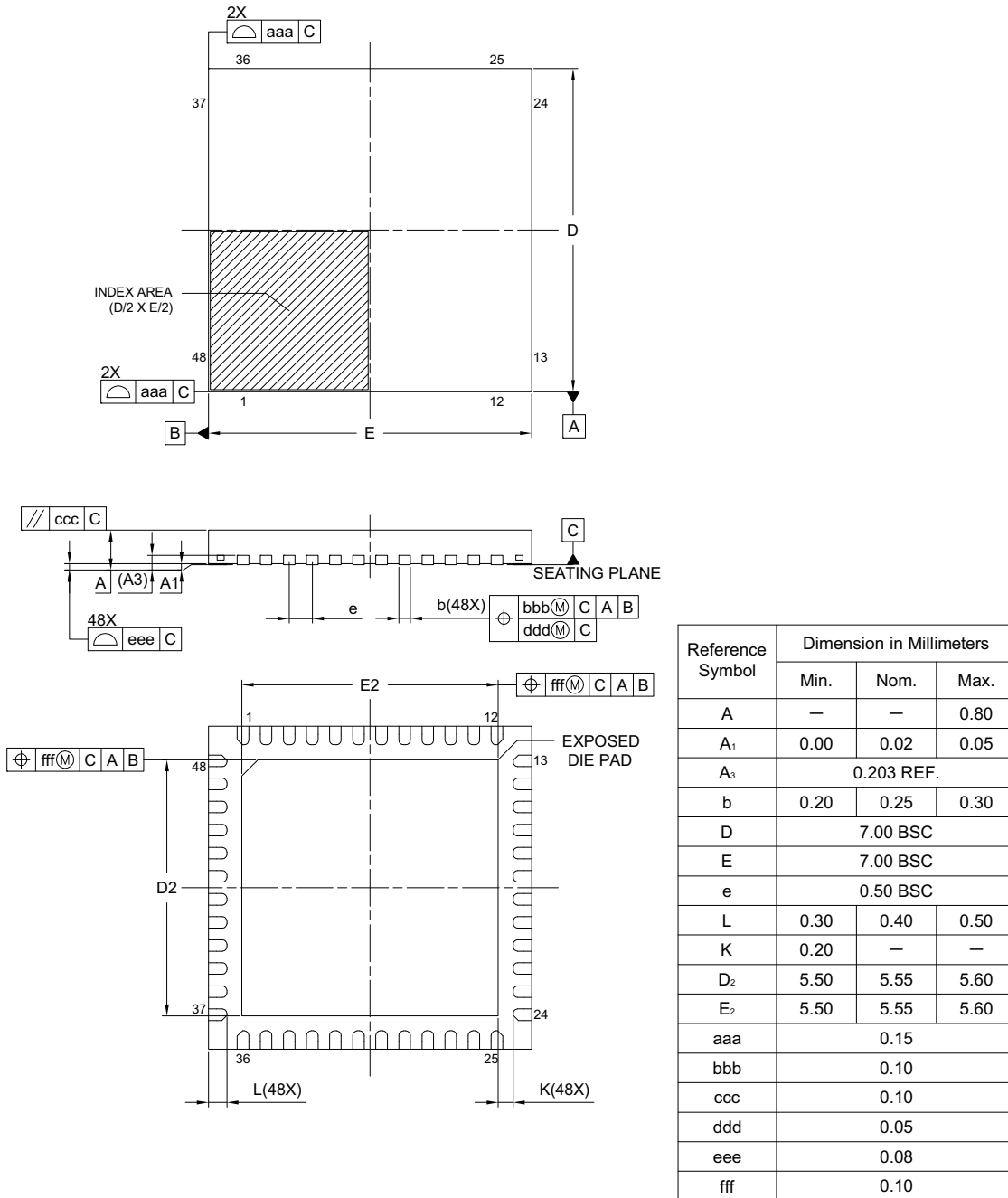
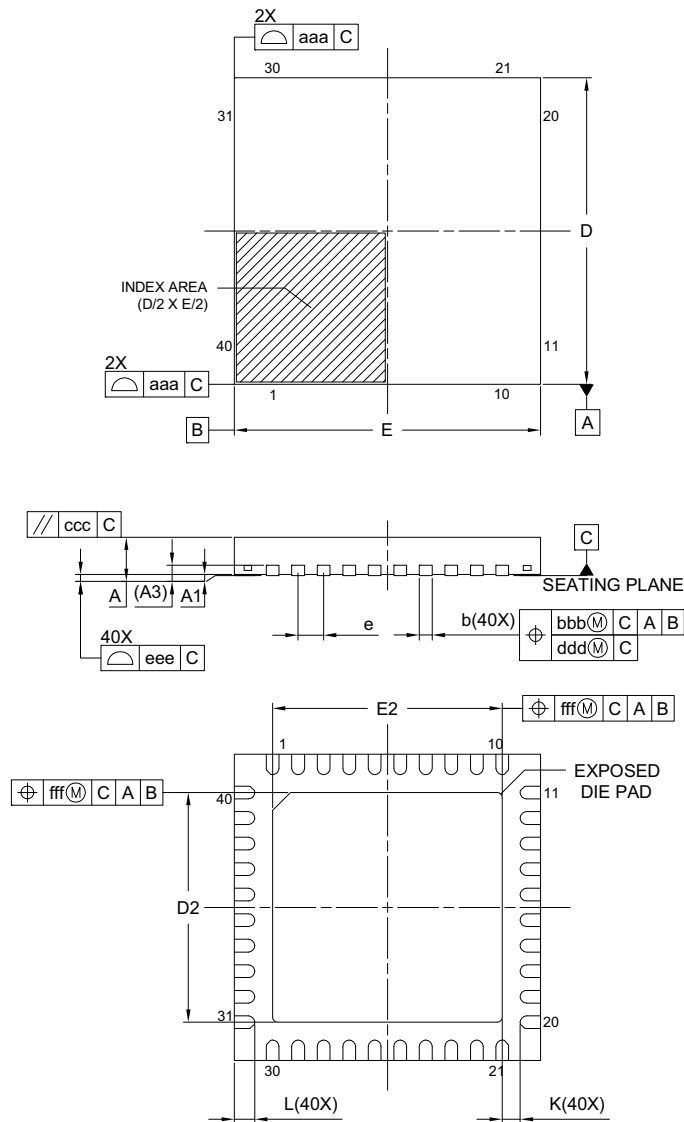


Figure 2. 48-Pin HWQFN (PWQN0048KE-A)



JEITA Package code	RENESAS code	MASS(TYP.)[g]
P-HWQFN040-6x6-0.50	PWQN0040KD-A	0.08



Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	0.80
A <sub>1</sub>	0.00	0.02	0.05
A <sub>3</sub>	0.203 REF.		
b	0.18	0.25	0.30
D	6.00 BSC		
E	6.00 BSC		
e	0.50 BSC		
L	0.30	0.40	0.50
K	0.20	—	—
D <sub>2</sub>	4.45	4.50	4.55
E <sub>2</sub>	4.45	4.50	4.55
aaa	0.15		
bbb	0.10		
ccc	0.10		
ddd	0.05		
eee	0.08		
fff	0.10		

Figure 3. 40-Pin HWQFN (PWQN0040KD-A)

**Reference Documents**

Applicable Products	Manual Title (Document Number)
RX110 Group	RX110 Group User's Manual: Hardware Rev1.20 (R01UH0421EJ0120)
RX111 Group	RX111 Group User's Manual: Hardware Rev1.30 (R01UH0365EJ0130)
RX130 Group	RX130 Group User's Manual: Hardware Rev3.00 (R01UH0560EJ0300)
RX230 Group, RX231 Group	RX230 Group, RX231 Group User's Manual: Hardware Rev1.20 (R01UH0496EJ0120)