By Category PDF

Category Speech Synthesis LSI

ICs

Speech Synthesis LSIs IC

Speech Synthesis LSIs

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Speech Synthesis LSIs with Automotive Grade (LAPIS Technology products)

Internal Flash Memory type

Part No.	Operating Voltage (V)	Operating Frequency (MHz)	Oscillator	Operating Temperature (°C)	ROM Capacity (bit)	Number of Phrases	Maximum Playback Time	CPU I/F	SP Amplifier Output (W)/ Class	Number of Mixing (Internal) (ch)	Others	Package	Automotive Grade	AEC-Q100 standard
ML22Q532	2.7 to 3.6 or 3.3 to 5.5	4.096 4.000	Built-in External		Flash 2M	4,096	99sec*2	I²C/ Clock synchronous serial	1.0/ AB-class	4	Rewrite Flash from MCU*4/ Serial Audio Interface/ Failure detection	P-TQFP48 -0707-0.50-Z6K6-MC	YES	✔
ML22Q533					Flash 4M		202sec*2					P-TQFP48 -0707-0.50-Z6K6-MC	YES	✔
ML22Q274	2.0 to 5.5	4.096	Built-in	−40 to +105	Flash 692K*1	30/62	28sec*3	Clock synchronous serial	1.0/ D-class	1	Disconnection and short circuit detection function	P-TSSOP20 -0225-0.65-TK6	YES	✔
ML22Q284						30		Stand-alone				P-TSSOP20 -0225-0.65-TK6	YES	✔
ML22Q294						30/62		I²C				P-TSSOP20 -0225-0.65-TK6	YES	✔

External Memory type

Part No.	Operating Voltage (V)	Operating Frequency (MHz)	Oscillator	Operating Temperature (°C)	ROM Capacity (bit)	Number of Phrases	Maximum Playback Time	CPU I/F	SP Amplifier Output (W)/ Class	Number of Mixing (Internal) (ch)	Others	Package	Automotive Grade	AEC-Q100 standard
New ML22120	2.7 to 3.6	4.096 4.000	Built-in External	−40 to +105 (+125*5)	External maximum 128M	64	17min*6	I²C/ Clock synchronous serial	—	4	Pitch and volume control 5band Equalizer Serial Audio Interface Failure detection	P-TQFP32 -0707-0.80-ZK6 P-WQFN24 -0404-0.50-A63	YES	—*8
ML22530	2.7 to 3.6 or 3.3 to 5.5	4.096 4.000	Built-in External	−40 to +105	External maximum 128M	4,096	109min*7	I²C/ Clock synchronous serial	1.0/ AB-class	4	Rewrite Flash from MCU*4/Serial Audio Interface/Failure detection	P-TQFP48 -0707-0.50-Z6K6	YES	✔

◎ Ky's Technology HQ-ADPCM: A high quality sound compression technology developed by Ky's. Ky's is a registered trademark of Kyushu Institute of Technology.

*1 When 30 phrases are selected. When 62 phrases are selected, 688 Kbit.
*2 Maximum playback time when the sampling frequency is 6.4kHz in HQ-ADPCM.
*3 Maximum playback time when the sampling frequency is 6.4kHz in ADPCM2.
*4 While using it clock synchronization serial.
*5 Key interlocking application.
*6 With an external memory module (Max 128Mbit). Maximum playback time when the sampling frequency is 8kHz in 16bit PCM.
*7 With an external memory module (Max 128Mbit). Maximum playback time when the sampling frequency is 6.4kHz in HQ-ADPCM.
*8 Scheduled to be compliant with AEC-Q100.

Speech Synthesis LSIs with Long-time Playback (LAPIS Technology products)

Internal Flash Memory type

Part No.	Operating Voltage (V)	Operating Frequency (MHz)	Oscillator	Operating Temperature (°C)	ROM Capacity (bit)	Number of Phrases	Maximum Playback Time*1	CPU I/F	SP Amplifier Output (W)/ Class	Number of Mixing (Internal) (ch)	Others	Package	Automotive Grade	Industrial Grade
ML22Q623	2.7 to 3.6 or 3.3 to 5.5	4.096 4.000	Built-in External	−40 to +70	Flash 4M	4,096	202sec	Clock synchronous serial	1.0/ AB-class, D-class	4	Rewrite Flash from MCU/ Failure detection	P-TQFP32 -0707-0.80-Z6K6-MC P-WQFN32 -0505-0.50-A63-MC	−	✔
ML22Q624					Flash 8M		406sec					P-TQFP32 -0707-0.80-Z6K6-MC P-WQFN32 -0505-0.50-A63-MC	−	✔
ML22Q625					Flash 16M		14min					P-TQFP32 -0707-0.80-Z6K6-MC P-WQFN32 -0505-0.50-A63-MC	−	✔
ML22Q626					Flash 32M		27min					P-TQFP32 -0707-0.80-Z6K6-MC P-WQFN32 -0505-0.50-A63-MC	−	✔
ML22Q663					Flash 4M		202sec	I²C			Failure detection	P-TQFP32 -0707-0.80-Z6K6-MC P-WQFN32 -0505-0.50-A63-MC	−	✔
ML22Q664					Flash 8M		406sec					P-TQFP32 -0707-0.80-Z6K6-MC P-WQFN32 -0505-0.50-A63-MC	−	✔
ML22Q665					Flash 16M		14min					P-TQFP32 -0707-0.80-Z6K6-MC P-WQFN32 -0505-0.50-A63-MC	−	✔
ML22Q666					Flash 32M		27min					P-TQFP32 -0707-0.80-Z6K6-MC P-WQFN32 -0505-0.50-A63-MC	−	✔

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*1 Maximum playback time when the sampling frequency is 6.4kHz in HQ-ADPCM.

Speech Synthesis LSIs

Speech Synthesis LSIs with Short-time Playback (LAPIS Technology products)

Internal D-class Speaker Amplifier type

Part No.	Operating Voltage (V)	Operating Frequency (MHz)	Oscillator	Operating Temperature (°C)	ROM Capacity (bit)	Number of Phrases	Maximum Playback Time	CPU I/F	SP Amplifier Output (W)/ Class	Number of Mixing (Internal) (ch)	Others	Package	Automotive Grade	Industrial Grade
ML22Q234	2.0 to 5.5	8.192	Built-in	−40 to +85	Flash 676K*1	30/62	34sec*3	Clock synchronous serial	1.0/ D-class	1	Disconnection and short circuit detection function	P-TSSOP20 -0225-0.65-TK6	−	✔
ML22Q244					Flash 692K*2			Stand-alone				P-TSSOP20 -0225-0.65-TK6	−	✔
ML22Q254					Flash 676K*1			I²C				P-TSSOP20 -0225-0.65-TK6	−	✔

○ **Ky's Technology** HQ-ADPCM: A high quality sound compression technology developed by Ky's. Ky's is a registered trademark of Kyushu Institute of Technology.

*1 When 30 phrases are selected. When 62 phrases are selected, 676 Kbit.
*2 When 30 phrases are selected. When 62 phrases are selected, 688 Kbit.
*3 Maximum playback time when the sampling frequency is 6.4kHz in HQ-ADPCM.

Speech Synthesis LSIs with External Memory (LAPIS Technology products)

Internal AB-class/D-class Speaker Amplifier type

Part No.	Operating Voltage (V)	Operating Frequency (MHz)	Oscillator	Operating Temperature (°C)	ROM Capacity (bit)	Number of Phrase	Maximum Playback Time	CPU I/F	SP Amplifier Output (W)/ Class	Number of Mixing (Internal) (ch)	Others	Package	Automotive Grade	Industrial Grade
ML22620	2.7 to 3.6 or 3.3 to 5.5	4.096 4.000	Built-in External	−40 to +85	External maximum 128M	4,096	109min*1	Clock synchronous serial	1.0/ AB-class, D-class	4	Rewrite Flash from MCU/ Failure detection	P-TQFP32 -0707-0.80-Z6K6 P-WQFN32 -0505-0.50-A63	−	✔
ML22660								I²C			Failure detection	P-TQFP32 -0707-0.80-Z6K6 P-WQFN32 -0505-0.50-A63	−	✔

Internal AB-class Speaker Amplifier type

Part No.	Operating Voltage (V)	Operating Frequency (MHz)	Oscillator	Operating Temperature (°C)	ROM Capacity (bit)	Number of Phrase	Maximum Playback Time	CPU I/F	SP Amplifier Output (W)/ Class	Number of Mixing (Internal) (ch)	Others	Package	Automotive Grade	Industrial Grade
ML22420	2.7 to 5.5	4.096	External	−40 to +85	External maximum 128M	1,024	87min*2	Clock synchronous serial	0.7/ AB-class	4	−	P-SSOP30 -56-0.65-ZK6	−	✔
ML22460								I²C				P-SSOP30 -56-0.65-ZK6	−	✔

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*1 With an external memory module (Max 128Mbit). Maximum playback time when the sampling frequency is 6.4kHz in HQ-ADPCM.
*2 With an external memory module (Max 128Mbit). Maximum playback time when the sampling frequency is 6.4kHz in ADPCM2.

Speech Synthesis LSIs