

KMH Series

- Endurance with ripple current : 2,000 hours at 105°C
- Non solvent resistant type
- RoHS2 Compliant

KMM

Downsized
Longer life

KMH

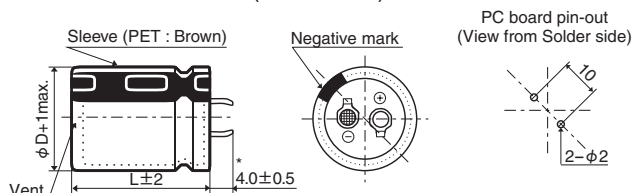


SPECIFICATIONS

Items	Characteristics										
Category	-40 to +105℃										
Temperature Range											
Rated Voltage Range	6.3 to 100V _{dc}										
Capacitance Tolerance	± 20% (M) (at 20℃, 120Hz)										
Leakage Current	I=0.02CV or 3mA, whichever is smaller Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 5 minutes)										
Dissipation Factor (tan δ)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	(at 20℃, 120Hz)
	tan δ (Max.)	0.60	0.50	0.40	0.30	0.25	0.20	0.15	0.15	0.15	
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	(at 120Hz)
	Z(-25℃)/Z(+20℃)	4	4	4	3	3	2	2	2	2	
	Z(-45℃)/Z(+20℃)	15	15	15	10	8	6	6	5	5	
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 2,000 hours at 105℃										
	Capacitance change	≤ ±20% of the initial value									
	D.F. (tan δ)	≤200% of the initial specified value									
	Leakage current	≤ The initial specified value									
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.										
	Capacitance change	≤ ±20% of the initial value									
	D.F. (tan δ)	≤150% of the initial specified value									
	Leakage current	≤ The initial specified value									

DIMENSIONS [mm]

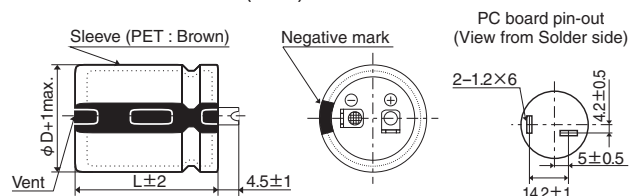
●Terminal Code : VS (φ22 to φ35) : Standard



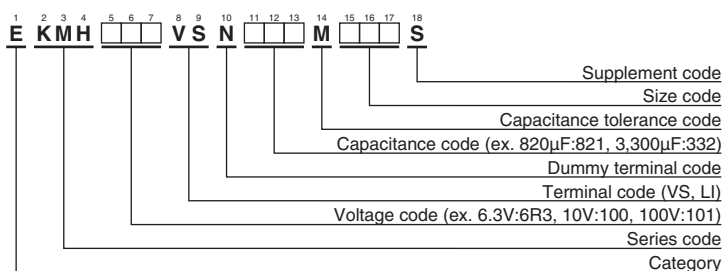
*φD=35mm : 3.5±0.5mm

The standard design has no plastic disc.

●Terminal Code : LI (φ35)



PART NUMBERING SYSTEM



Please refer to "Product code guide (snap-in type)"



◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.
6.3	12,000	22 × 25	0.60	1.54	EKM6R3VSN123MP25S	16	27,000	35 × 30	0.40	3.45	EKM160VSN273MA30S
	15,000	22 × 25	0.60	1.72	EKM6R3VSN153MP25S		33,000	30 × 45	0.40	4.30	EKM160VSN333MR45S
	18,000	22 × 30	0.60	1.95	EKM6R3VSN183MP30S		33,000	35 × 35	0.40	4.26	EKM160VSN333MA35S
	18,000	25.4 × 25	0.60	1.96	EKM6R3VSN183MQ25S		39,000	30 × 50	0.40	4.81	EKM160VSN393MR50S
	22,000	22 × 35	0.60	2.23	EKM6R3VSN223MP35S		39,000	35 × 40	0.40	4.79	EKM160VSN393MA40S
	22,000	25.4 × 30	0.60	2.25	EKM6R3VSN223MQ30S		47,000	35 × 45	0.40	5.43	EKM160VSN473MA45S
	22,000	30 × 25	0.60	2.28	EKM6R3VSN223MP25S		4,700	22 × 25	0.30	1.50	EKM250VSN472MP25S
	27,000	22 × 40	0.60	2.54	EKM6R3VSN273MP40S		5,600	22 × 25	0.30	1.63	EKM250VSN562MP25S
	27,000	25.4 × 35	0.60	2.57	EKM6R3VSN273MQ35S	25	6,800	22 × 30	0.30	1.86	EKM250VSN682MP30S
	27,000	30 × 25	0.60	2.52	EKM6R3VSN273MR25S		6,800	25.4 × 25	0.30	1.87	EKM250VSN682MQ25S
	33,000	22 × 45	0.60	2.88	EKM6R3VSN333MP45S		8,200	22 × 35	0.30	2.11	EKM250VSN822MP35S
	33,000	25.4 × 40	0.60	2.93	EKM6R3VSN333MQ40S		8,200	25.4 × 30	0.30	2.12	EKM250VSN822MQ30S
	33,000	30 × 30	0.60	2.89	EKM6R3VSN333MR30S		8,200	30 × 25	0.30	2.15	EKM250VSN822MR25S
	33,000	35 × 25	0.60	2.93	EKM6R3VSN333MA25S		10,000	22 × 40	0.30	2.39	EKM250VSN103MP40S
	39,000	25.4 × 40	0.60	3.18	EKM6R3VSN393MQ40S		10,000	25.4 × 35	0.30	2.42	EKM250VSN103MP35S
	39,000	30 × 35	0.60	3.26	EKM6R3VSN393MR35S		10,000	30 × 25	0.30	2.37	EKM250VSN103MR25S
	39,000	35 × 30	0.60	3.40	EKM6R3VSN393MA30S		12,000	22 × 45	0.30	2.69	EKM250VSN123MP45S
	47,000	25.4 × 50	0.60	3.69	EKM6R3VSN473MQ50S		12,000	25.4 × 40	0.30	2.74	EKM250VSN123MQ40S
	47,000	30 × 40	0.60	3.69	EKM6R3VSN473MR40S		12,000	30 × 30	0.30	2.70	EKM250VSN123MR30S
	47,000	35 × 30	0.60	3.73	EKM6R3VSN473MA30S		12,000	35 × 25	0.30	2.74	EKM250VSN123MA25S
	56,000	30 × 45	0.60	4.16	EKM6R3VSN563MR45S		15,000	25.4 × 45	0.30	3.15	EKM250VSN153MQ45S
	56,000	35 × 35	0.60	4.12	EKM6R3VSN563MA35S		15,000	30 × 35	0.30	3.13	EKM250VSN153MR35S
	68,000	30 × 50	0.60	4.71	EKM6R3VSN683MR50S		15,000	35 × 30	0.30	3.27	EKM250VSN153MA30S
	68,000	35 × 40	0.60	4.69	EKM6R3VSN683MA40S		18,000	25.4 × 50	0.30	3.54	EKM250VSN183MQ50S
	82,000	35 × 45	0.60	5.32	EKM6R3VSN823MA45S		18,000	30 × 40	0.30	3.54	EKM250VSN183MR40S
10	10,000	22 × 25	0.50	1.55	EKM100VSN103MP25S		18,000	35 × 30	0.30	3.58	EKM250VSN183MA30S
	12,000	22 × 30	0.50	1.77	EKM100VSN123MP30S		22,000	30 × 45	0.30	4.04	EKM250VSN223MP45S
	15,000	22 × 30	0.50	1.97	EKM100VSN153MP30S		22,000	35 × 35	0.30	3.64	EKM250VSN223MA35S
	15,000	25.4 × 25	0.50	1.96	EKM100VSN153MQ25S		27,000	35 × 45	0.30	4.73	EKM250VSN273MA45S
	18,000	22 × 35	0.50	2.21	EKM100VSN183MP35S	35	33,000	35 × 50	0.30	5.39	EKM250VSN333MA50S
	18,000	25.4 × 30	0.50	2.23	EKM100VSN183MQ30S		3,300	22 × 25	0.25	1.40	EKM350VSN332MP25S
	22,000	22 × 40	0.50	2.51	EKM100VSN223MP40S		3,900	22 × 30	0.25	1.57	EKM350VSN392MP30S
	22,000	25.4 × 35	0.50	2.54	EKM100VSN223MQ35S		4,700	22 × 30	0.25	1.72	EKM350VSN472MP30S
	22,000	30 × 25	0.50	2.40	EKM100VSN223MR25S		4,700	25.4 × 25	0.25	1.80	EKM350VSN472MQ25S
	27,000	22 × 50	0.50	2.93	EKM100VSN273MP50S		5,600	22 × 35	0.25	1.95	EKM350VSN562MP35S
	27,000	25.4 × 40	0.50	2.90	EKM100VSN273MQ40S		5,600	25.4 × 30	0.25	1.96	EKM350VSN562MQ30S
	27,000	30 × 30	0.50	2.87	EKM100VSN273MR30S		5,600	30 × 25	0.25	1.99	EKM350VSN562MR25S
	27,000	35 × 25	0.50	2.73	EKM100VSN273MA25S		6,800	22 × 40	0.25	2.20	EKM350VSN682MP40S
	33,000	25.4 × 45	0.50	3.30	EKM100VSN333MQ45S		6,800	25.4 × 35	0.25	2.23	EKM350VSN682MQ35S
	33,000	30 × 35	0.50	3.28	EKM100VSN333MR35S		6,800	30 × 25	0.25	2.19	EKM350VSN682MR25S
	33,000	35 × 30	0.50	3.16	EKM100VSN333MA30S		8,200	22 × 50	0.25	2.55	EKM350VSN822MP50S
	39,000	25.4 × 50	0.50	3.68	EKM100VSN393MQ50S		8,200	25.4 × 40	0.25	2.53	EKM350VSN822MQ40S
	39,000	30 × 40	0.50	3.69	EKM100VSN393MR40S		8,200	30 × 30	0.25	2.75	EKM350VSN822MR30S
	39,000	35 × 30	0.50	3.43	EKM100VSN393MA30S		8,200	35 × 25	0.25	2.75	EKM350VSN822MA25S
	47,000	30 × 45	0.50	4.17	EKM100VSN473MR45S		10,000	25.4 × 45	0.25	2.87	EKM350VSN103MQ45S
	47,000	35 × 35	0.50	3.76	EKM100VSN473MA35S		10,000	30 × 35	0.25	2.90	EKM350VSN103MR35S
	56,000	30 × 50	0.50	4.68	EKM100VSN563MR50S		10,000	35 × 30	0.25	2.91	EKM350VSN103MA30S
	56,000	35 × 40	0.50	4.67	EKM100VSN563MA40S		12,000	25.4 × 50	0.25	3.24	EKM350VSN123MQ50S
	68,000	35 × 50	0.50	5.46	EKM100VSN683MA50S		12,000	30 × 40	0.25	3.23	EKM350VSN123MR40S
16	6,800	22 × 25	0.40	1.57	EKM160VSN682MP25S		12,000	35 × 30	0.25	2.99	EKM350VSN123MA30S
	10,000	22 × 30	0.40	1.97	EKM160VSN103MP30S	50	15,000	30 × 45	0.25	3.72	EKM350VSN153MR45S
	10,000	25.4 × 25	0.40	1.97	EKM160VSN103MQ25S		15,000	35 × 35	0.25	3.67	EKM350VSN153MA35S
	12,000	22 × 35	0.40	2.22	EKM160VSN123MP35S		18,000	35 × 40	0.25	4.37	EKM350VSN183MA40S
	12,000	25.4 × 30	0.40	2.24	EKM160VSN123MQ30S		22,000	35 × 50	0.25	4.92	EKM350VSN223MA50S
	12,000	30 × 25	0.40	2.45	EKM160VSN123MR25S		1,800	22 × 25	0.20	1.33	EKM500VSN182MP25S
	15,000	22 × 40	0.40	2.55	EKM160VSN153MP40S		2,700	22 × 30	0.20	1.69	EKM500VSN272MP30S
	15,000	25.4 × 35	0.40	2.58	EKM160VSN153MQ35S		2,700	25.4 × 25	0.20	1.70	EKM500VSN272MQ25S
	15,000	30 × 25	0.40	2.52	EKM160VSN153MR25S		3,300	22 × 35	0.20	1.93	EKM500VSN332MP35S
	18,000	22 × 45	0.40	2.87	EKM160VSN183MP45S		3,300	25.4 × 30	0.20	1.85	EKM500VSN332MQ30S
	18,000	25.4 × 40	0.40	2.92	EKM160VSN183MQ40S		3,900	22 × 40	0.20	2.16	EKM500VSN392MP40S
	18,000	30 × 30	0.40	2.88	EKM160VSN183MR30S		3,900	25.4 × 35	0.20	2.18	EKM500VSN392MQ35S
	18,000	35 × 25	0.40	2.92	EKM160VSN183MA25S		3,900	30 × 25	0.20	1.95	EKM500VSN392MR25S
	22,000	25.4 × 45	0.40	3.32	EKM160VSN223MQ45S		4,700	22 × 45	0.20	2.43	EKM500VSN472MP45S
	22,000	30 × 35	0.40	3.29	EKM160VSN223MR35S		4,700	25.4 × 35	0.20	2.39	EKM500VSN472MQ35S
	22,000	35 × 25	0.40	3.23	EKM160VSN223MA25S		4,700	30 × 30	0.20	2.25	EKM500VSN472MR30S
	27,000	25.4 × 50	0.40	3.78	EKM160VSN273MQ50S		4,700	35 × 25	0.20	2.48	EKM500VSN472MA25S
	27,000	30 × 40	0.40	3.77	EKM160VSN273MR40S		5,600	22 × 50	0.20	2.75	EKM500VSN562MP50S

◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.
50	5,600	25.4 × 40	0.20	2.70	EKMH500VSN562MQ40S	80	1,800	25.4 × 30	0.15	1.76	EKMH800VSN182MQ30S
	5,600	30 × 35	0.20	2.76	EKMH500VSN562MR35S		1,800	30 × 25	0.15	1.65	EKMH800VSN182MR25S
	5,600	35 × 25	0.20	2.70	EKMH500VSN562MA25S		2,200	22 × 45	0.15	2.04	EKMH800VSN222MP45S
	6,800	25.4 × 50	0.20	3.30	EKMH500VSN682MQ50S		2,200	25.4 × 35	0.15	2.01	EKMH800VSN222MQ35S
	6,800	30 × 40	0.20	3.30	EKMH500VSN682MR40S		2,200	30 × 30	0.15	2.05	EKMH800VSN222MR30S
	6,800	35 × 30	0.20	3.25	EKMH500VSN682MA30S		2,200	35 × 25	0.15	2.07	EKMH800VSN222MA25S
	8,200	30 × 45	0.20	3.60	EKMH500VSN822MR45S		2,700	25.4 × 45	0.15	2.36	EKMH800VSN272MQ45S
	8,200	35 × 35	0.20	3.55	EKMH500VSN822MA35S		2,700	30 × 35	0.15	2.35	EKMH800VSN272MR35S
	10,000	30 × 50	0.20	4.04	EKMH500VSN103MR50S		2,700	35 × 25	0.15	2.29	EKMH800VSN272MA25S
	10,000	35 × 40	0.20	4.03	EKMH500VSN103MA40S		3,300	25.4 × 50	0.15	2.68	EKMH800VSN332MQ50S
63	1,200	22 × 25	0.15	1.19	EKMH630VSN122MP25S		3,300	30 × 40	0.15	2.68	EKMH800VSN332MR40S
	1,500	22 × 25	0.15	1.33	EKMH630VSN152MP25S		3,300	35 × 30	0.15	2.45	EKMH800VSN332MA30S
	1,800	22 × 30	0.15	1.51	EKMH630VSN182MP30S		3,900	30 × 45	0.15	3.00	EKMH800VSN392MR45S
	1,800	25.4 × 25	0.15	1.52	EKMH630VSN182MQ25S		3,900	35 × 35	0.15	2.98	EKMH800VSN392MA35S
	2,200	22 × 35	0.15	1.73	EKMH630VSN222MP35S		4,700	30 × 50	0.15	3.39	EKMH800VSN472MR50S
	2,200	25.4 × 30	0.15	1.74	EKMH630VSN222MQ30S		4,700	35 × 40	0.15	3.38	EKMH800VSN472MA40S
	2,700	22 × 40	0.15	1.97	EKMH630VSN272MP40S		5,600	35 × 45	0.15	3.80	EKMH800VSN562MA45S
	2,700	25.4 × 35	0.15	1.99	EKMH630VSN272MQ35S		6,800	35 × 50	0.15	3.90	EKMH800VSN682MA50S
	2,700	30 × 25	0.15	1.76	EKMH630VSN272MR25S	100	560	22 × 25	0.15	1.05	EKMH101VSN561MP25S
	3,300	22 × 50	0.15	2.29	EKMH630VSN332MP50S		820	22 × 30	0.15	1.32	EKMH101VSN821MP30S
	3,300	25.4 × 40	0.15	2.27	EKMH630VSN332MQ40S		820	25.4 × 25	0.15	1.33	EKMH101VSN821MQ25S
	3,300	30 × 30	0.15	2.24	EKMH630VSN332MR30S		1,000	22 × 35	0.15	1.50	EKMH101VSN102MP35S
	3,300	35 × 25	0.15	2.06	EKMH630VSN332MA25S		1,000	25.4 × 30	0.15	1.51	EKMH101VSN102MQ30S
	3,900	25.4 × 45	0.15	2.54	EKMH630VSN392MQ45S		1,200	22 × 40	0.15	1.69	EKMH101VSN122MP40S
	3,900	30 × 35	0.15	2.55	EKMH630VSN392MR35S		1,200	25.4 × 35	0.15	1.71	EKMH101VSN122MQ35S
	3,900	35 × 25	0.15	2.24	EKMH630VSN392MA25S		1,200	30 × 25	0.15	1.68	EKMH101VSN122MR25S
	4,700	25.4 × 50	0.15	2.86	EKMH630VSN472MQ50S		1,500	22 × 45	0.15	1.94	EKMH101VSN152MP45S
	4,700	30 × 40	0.15	2.86	EKMH630VSN472MR40S		1,500	25.4 × 40	0.15	1.98	EKMH101VSN152MQ40S
	4,700	35 × 30	0.15	2.79	EKMH630VSN472MA30S		1,500	30 × 30	0.15	1.95	EKMH101VSN152MR30S
	5,600	30 × 45	0.15	3.22	EKMH630VSN562MR45S		1,500	35 × 25	0.15	1.98	EKMH101VSN152MA25S
	5,600	35 × 35	0.15	3.19	EKMH630VSN562MA35S		1,800	25.4 × 45	0.15	2.23	EKMH101VSN182MQ45S
	6,800	30 × 50	0.15	3.65	EKMH630VSN682MR50S		1,800	30 × 35	0.15	2.50	EKMH101VSN182MR35S
	6,800	35 × 40	0.15	3.64	EKMH630VSN682MA40S		1,800	35 × 25	0.15	2.17	EKMH101VSN182MA25S
	8,200	35 × 45	0.15	3.90	EKMH630VSN822MR45S		2,200	25.4 × 50	0.15	2.53	EKMH101VSN222MQ50S
	10,000	35 × 50	0.15	4.40	EKMH630VSN103MA50S		2,200	30 × 40	0.15	2.70	EKMH101VSN222MR40S
80	820	22 × 25	0.15	1.11	EKMH800VSN821MP25S		2,200	35 × 30	0.15	2.50	EKMH101VSN222MA30S
	1,000	22 × 25	0.15	1.22	EKMH800VSN102MP25S		2,700	30 × 45	0.15	2.88	EKMH101VSN272MR45S
	1,200	22 × 30	0.15	1.38	EKMH800VSN122MP30S		2,700	35 × 35	0.15	2.86	EKMH101VSN272MA35S
	1,200	25.4 × 25	0.15	1.39	EKMH800VSN122MQ25S		3,300	30 × 50	0.15	3.28	EKMH101VSN332MR50S
	1,500	22 × 35	0.15	1.59	EKMH800VSN152MP35S		3,300	35 × 40	0.15	3.27	EKMH101VSN332MA40S
	1,500	25.4 × 30	0.15	1.61	EKMH800VSN152MQ30S		3,900	35 × 45	0.15	3.67	EKMH101VSN392MA45S
	1,800	22 × 40	0.15	1.80	EKMH800VSN182MP40S		4,700	35 × 50	0.15	3.80	EKMH101VSN472MA50S

*For the rated voltage $\geq 160V_{dc}$, please use KMR and KMQ series.

◆RATED RIPPLE CURRENT MULTIPLIERS

◎Frequency Multipliers

Frequency(Hz)	50	120	300	1k	10k	50k
6.3 to 50V _{dc}	0.95	1.00	1.03	1.05	1.08	1.08
63 to 100V _{dc}	0.92	1.00	1.07	1.13	1.19	1.20

The deterioration of aluminum electrolytic capacitors accelerates their life due to the internal heating produced by ripple current. For details, refer to Section "5-3 Ripple Current Effect on Lifetime" in the catalog, Technical Note.



- Always read "Notes on Use" before using the product in order to enable you to use the product correctly and prevent any faults and accidents from occurring.
- Request the Product Specification on the product of NIPPON CHEMI-CON CORPORATION to refer to it as well as this brochure prior to the order of the products. Some specific notes on use of the ordered product may be described in the specifications.
- The products listed in this catalog are designed and manufactured for general electronics equipment use and are not intended for use in applications that can adversely affect human life; where the malfunction of equipment may cause damage to life or property. In addition, our products are not intended to be used in specific applications that may cause a major social impact. Please consult with us in advance of usage of our products in the following listed applications. ① Aerospace equipment ② Power generation equipment such as thermal power, nuclear power etc. ③ Medical equipment ④ Transport equipment (automobiles, trains, ships, etc.) ⑤ Transportation control equipment ⑥ Disaster prevention / crime prevention equipment ⑦ Highly publicized information processing equipment ⑧ Submarine equipment ⑨ Other applications that are not considered general-purpose applications.
- The circuits described as examples in this catalog and the "delivery specifications" are featured in order to show the operations and usage of our products, however, this fact does not guarantee that the circuits are available to function in your equipment systems. We are not in any case responsible for any failures or damage caused by the use of information contained herein. You should examine our products, of which the characteristics are described in the "delivery specifications" and other documents, and determine whether or not our products suit your requirements according to the specifications of your equipment systems. Therefore, you bear final responsibility regarding the use of our products.
Please make sure that you take appropriate safety measures such as use of redundant design and malfunction prevention measures in order to prevent fatal accidents and/or fires in the event any of our products malfunction.
- We strongly recommend our customers to purchase Nippon Chemi-Con products only through our official sales channels. We assume no responsibility for any defects or damages caused by using products purchased from outside our official sales channel or of counterfeit goods. In addition, we will ask the customer to pay the investigation cost for products purchased outside our official sales channel.
- We reserve the right to discontinue production and delivery of products. We do not guarantee that all the products included in this catalog will be available in the future.
The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products
- We continually strive to improve the quality and reliability of our products, but in any case that our product does not meet our published specifications, please stop using it promptly and contact us immediately. As for compensation for non-conforming goods delivered by Chemi-Con, we will limit it only to goods found in non-compliance of our published specifications. This may be accomplished by a no cost replacement of non-conforming individual products, a credit of the piece price paid per each individual non-conforming product, or in other ways deemed necessary.
In addition, we have an established system with enhanced traceability, therefore we will limit the applicable lot items for any potential compensation.

[Part Numbering System](#)

[Part Numbering System \(Appendix\)](#)

[Standardization](#)

[Available Items by Manufacturing Locations](#)

[Environmental Measures](#)

[Technical Note](#)

[Precautions and Guidelines](#)

[Recommended Soldering Conditions](#)

[Taping, Lead-preforming and Packaging](#)

[Available Terminals for Snap-in and Screw Mount Type](#)