

# 5KMC12AS ~ 5KMC100AS Series

## Transient Voltage Suppressor

**Voltage**

**12~100 V**

**Power**

**5000 W**

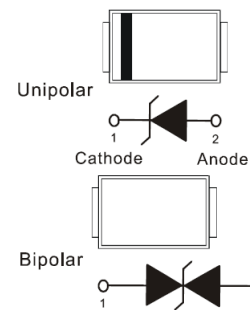
### Features

- For surface mounted applications in order to optimize board space.
- Package suitable for automated handling
- Low inductance
- High temperature soldering : 260°C/10 seconds at terminals
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : Molded plastic, SMC
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.2325 grams

SMC



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Peak Pulse Power Dissipation(tp = 10 / 1000 us) <sup>(Note 1,2)</sup>	P <sub>PP</sub>	5000	W
Peak Pulse Current on tp = 10 / 1000 us waveform <sup>(Fig.2)</sup> (Note 1)	I <sub>PPM</sub>	See table 1	A
Power Dissipation on Infinite Heat Sink at T <sub>L</sub> = 50 °C	P <sub>D</sub>	6.5	W
Peak Forward Surge Current (8.3ms single half sine-wave) for Unidirectional only	I <sub>FSM</sub>	300	A
ESD IEC61000-4-2(Air)	V <sub>ESD</sub>	±30	kV
ESD IEC61000-4-2(Contact)		±30	
Typical Thermal Resistance Junction to Ambient <sup>(Note 3)</sup>	R <sub>θJA</sub>	125	°C/W
Operating Junction Temperature Range	T <sub>J</sub>	-55~150	°C
Storage Temperature Range	T <sub>STG</sub>	-55~150	°C

Notes :

1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig.2
2. Mounted on 100cm<sup>2</sup> copper pads to each terminal
3. Mounted on a FR4 PCB, single-sided copper, standard footprint
4. Voltage of 12V~100V products's peak pulse power dissipation is 5000W. Bidirectional products 40V~58V are also 4500W.
5. A transient suppressor is selected according to the working peak reverse voltage(V<sub>RWM</sub>), which should be equal to or greater than the DC or continuous peak operation voltage level.
6. TVS is a transient protection device, it is strongly recommended not to use as a Zener.

## 5KMC12AS ~ 5KMC100AS Series

### Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

Part Number		V <sub>RWM</sub>	V <sub>BR</sub>			I <sub>R</sub> @V <sub>RWM</sub>		V <sub>C</sub> @I <sub>PP</sub>		Typical Temp. Coefficient of V <sub>BR</sub>	Marking Code	
			Min.	Max.	I <sub>T</sub>	uA						
UNI	BI	V	V	V	mA	UNI	BI	V	A	%/°C	UNI	BI
5KMC12AS	5KMC12CAS	12	13.3	14.7	10	5	5	19.9	252	0.062	5K12AS	5K12CAS
5KMC13AS	5KMC13CAS	13	14.4	15.9	10	5	5	21.5	233	0.063	5K13AS	5K13CAS
5KMC14AS	5KMC14CAS	14	15.6	17.2	10	5	5	23.2	216	0.065	5K14AS	5K14CAS
5KMC15AS	5KMC15CAS	15	16.7	18.5	1	5	5	24.4	205	0.066	5K15AS	5K15CAS
5KMC16AS	5KMC16CAS	16	17.8	19.7	1	5	5	26	193	0.067	5K16AS	5K16CAS
5KMC17AS	5KMC17CAS	17	18.9	20.9	1	5	5	27.6	181	0.068	5K17AS	5K17CAS
5KMC18AS	5KMC18CAS	18	20	22.1	1	5	5	29.2	172	0.069	5K18AS	5K18CAS
5KMC20AS	5KMC20CAS	20	22.2	24.5	1	5	5	32.4	155	0.069	5K20AS	5K20CAS
5KMC22AS	5KMC22CAS	22	24.4	26.9	1	5	5	35.5	141	0.07	5K22AS	5K22CAS
5KMC24AS	5KMC24CAS	24	26.7	29.5	1	5	5	38.9	129	0.071	5K24AS	5K24CAS
5KMC26AS	5KMC26CAS	26	28.9	31.9	1	5	5	42.1	119	0.071	5K26AS	5K26CAS
5KMC28AS	5KMC28CAS	28	31.1	34.4	1	5	5	45.4	110	0.071	5K28AS	5K28CAS
5KMC30AS	5KMC30CAS	30	33.3	36.8	1	5	5	48.4	103	0.072	5K30AS	5K30CAS
5KMC33AS	5KMC33CAS	33	36.7	40.6	1	5	5	53.3	93.9	0.073	5K33AS	5K33CAS
5KMC36AS	5KMC36CAS	36	40	44.2	1	5	5	58.1	86.1	0.073	5K36AS	5K36CAS
5KMC40AS	-	40	44.4	49.1	1	5	-	64.5	77.6	0.074	5K40AS	-
-	5KMC40CAS	40	44.4	49.1	1	-	5	64.5	69.8	0.074	-	5K40CAS
5KMC43AS	-	43	47.8	52.8	1	5	-	69.4	72.1	0.075	5K43AS	-
-	5KMC43CAS	43	47.8	52.8	1	-	5	69.4	64.8	0.075	-	5K43CAS
5KMC45AS	-	45	50	55.3	1	5	-	72.7	68.8	0.075	5K45AS	-
-	5KMC45CAS	45	50	55.3	1	-	5	72.7	61.9	0.075	-	5K45CAS
5KMC48AS	-	48	53.3	58.9	1	5	-	77.4	64.7	0.076	5K48AS	-
-	5KMC48CAS	48	53.3	58.9	1	-	5	77.4	58.1	0.076	-	5K48CAS
5KMC51AS	-	51	56.7	62.7	1	5	-	82.4	60.7	0.076	5K51AS	-
-	5KMC51CAS	51	56.7	62.7	1	-	5	82.4	54.6	0.076	-	5K51CAS
5KMC54AS	-	54	60	66.3	1	5	-	87.1	57.5	0.077	5K54AS	-
-	5KMC54CAS	54	60	66.3	1	-	5	87.1	51.7	0.077	-	5K54CAS
5KMC58AS	-	58	64.4	71.2	1	5	-	93.6	53.5	0.078	5K58AS	-
-	5KMC58CAS	58	64.4	71.2	1	-	5	93.6	48.1	0.078	-	5K58CAS
5KMC60AS	-	60	66.7	73.7	1	5	-	96.8	51.7	0.078	5K60AS	-
5KMC64AS	-	64	71.1	78.6	1	5	-	103	48.6	0.079	5K64AS	-
5KMC70AS	-	70	77.8	86	1	5	-	113	44.3	0.08	5K70AS	-
5KMC75AS	-	75	83.3	92.1	1	5	-	121	41.4	0.082	5K75AS	-
5KMC78AS	-	78	86.7	95.8	1	5	-	126	39.7	0.082	5K78AS	-
5KMC85AS	-	85	94.4	104	1	5	-	137	36.5	0.084	5K85AS	-
5KMC90AS	-	90	100	111	1	5	-	146	34.3	0.085	5K90AS	-
5KMC100AS	-	100	111	123	1	5	-	162	30.9	0.087	5K100AS	-

# 5KMC12AS ~ 5KMC100AS Series

## TYPICAL CHARACTERISTIC CURVES

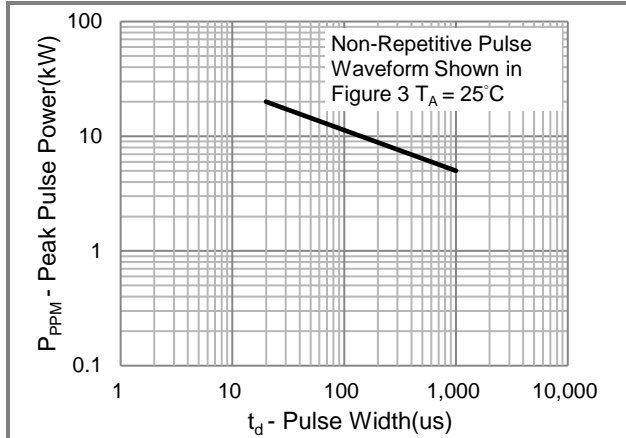


Fig.1 Pulse Power Rating Curve

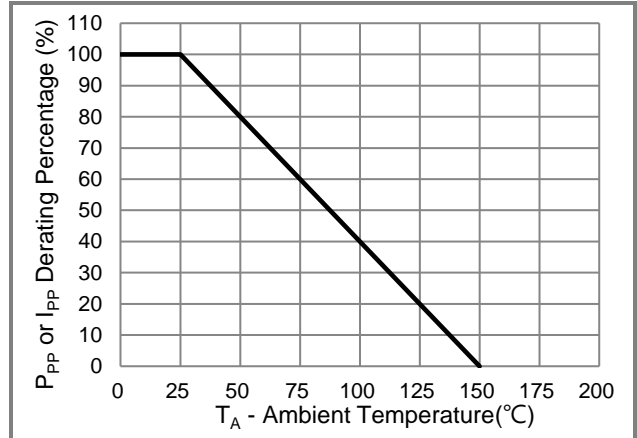


Fig.2 Derating Curve

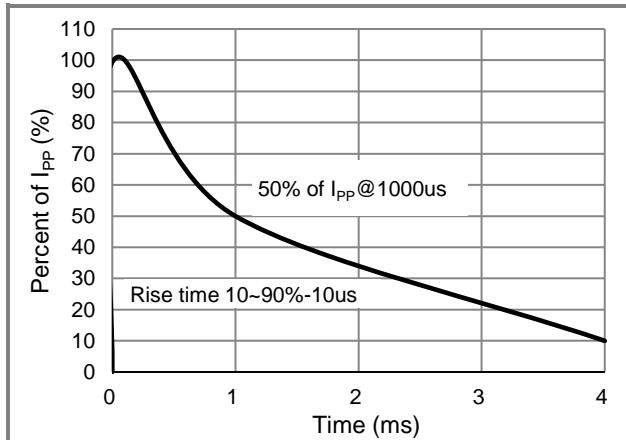


Fig.3 10/1000us Pulse Waveform

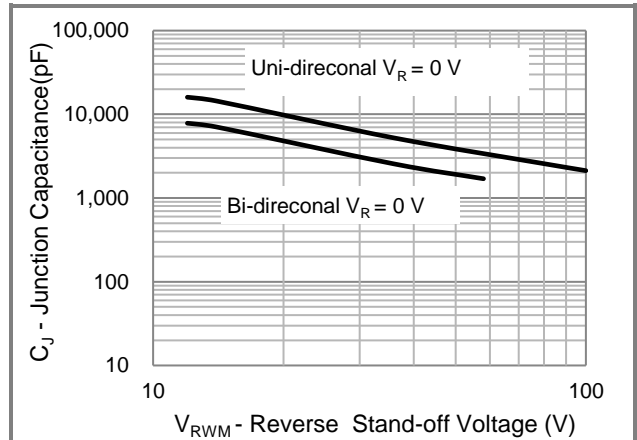


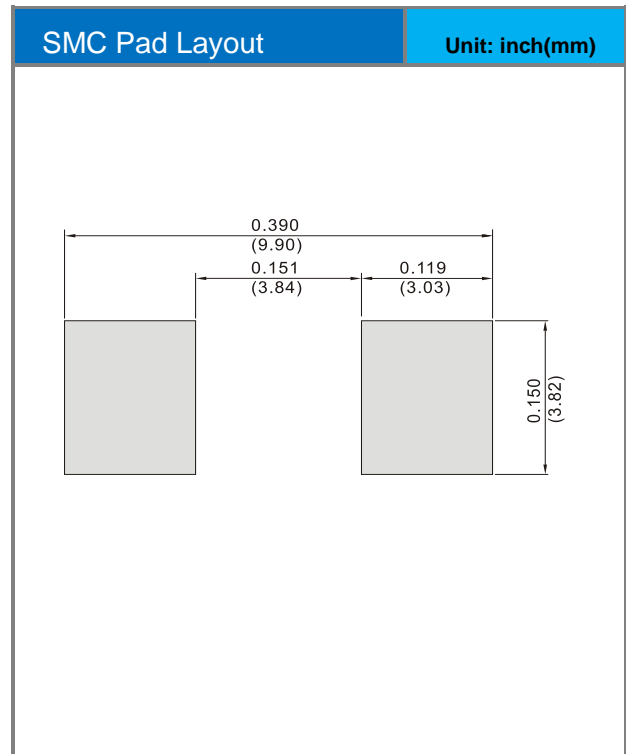
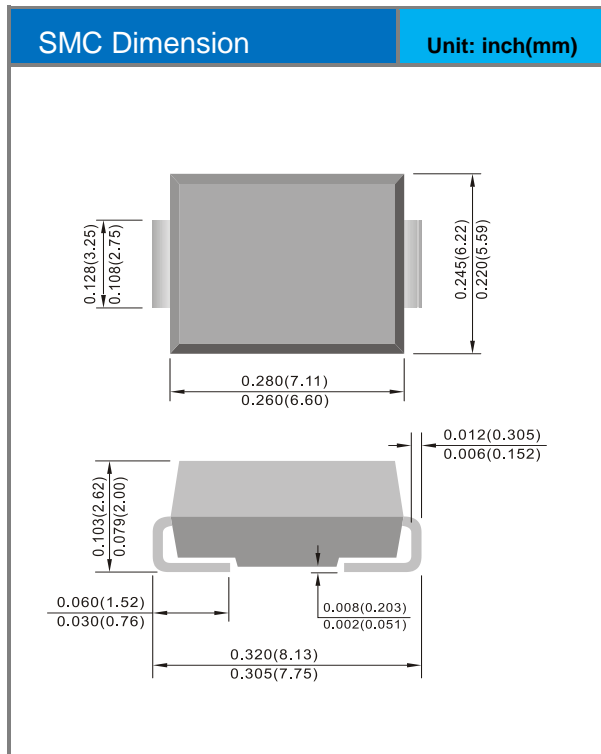
Fig.4 Typical Capacitance

# 5KMC12AS ~ 5KMC100AS Series

## Product and Packing Information

Part No.	Package Type	Packing Type	Marking
5KMCxxxAS	SMC	0.8K pcs / 7" reel	See Table

## Packaging Information & Mounting Pad Layout



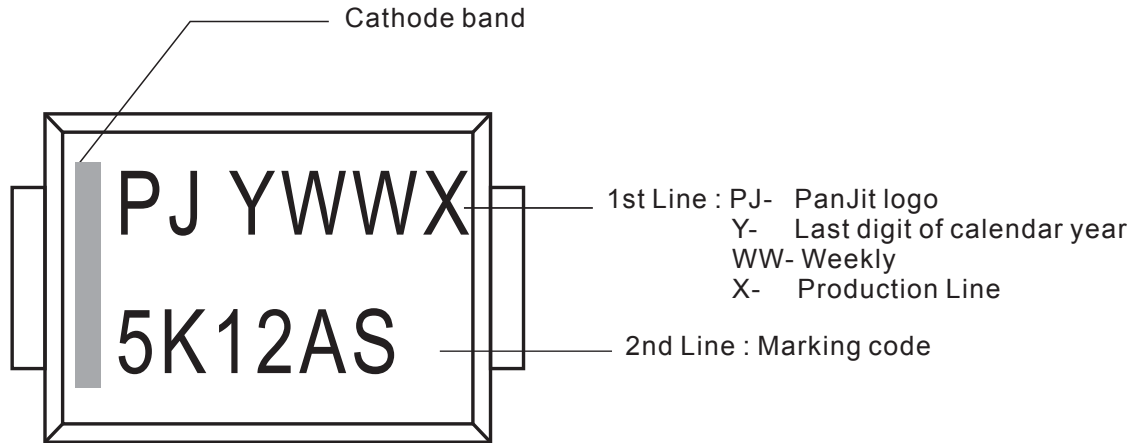
## 5KMC12AS ~ 5KMC100AS Series

### Disclaimer

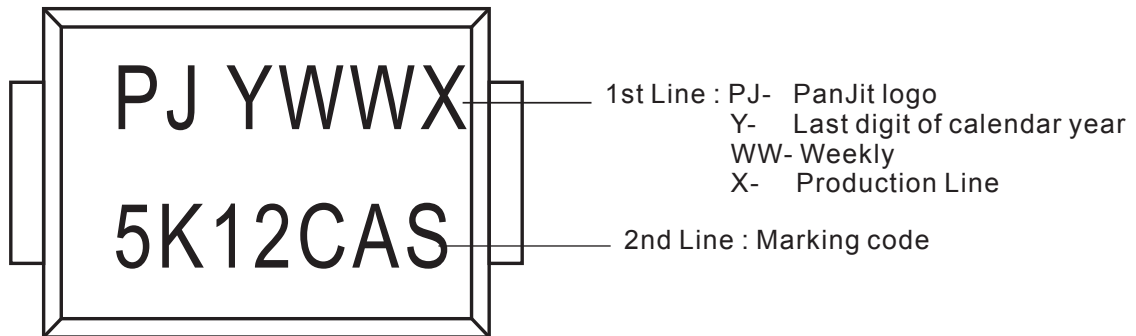
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## 2. MARKING

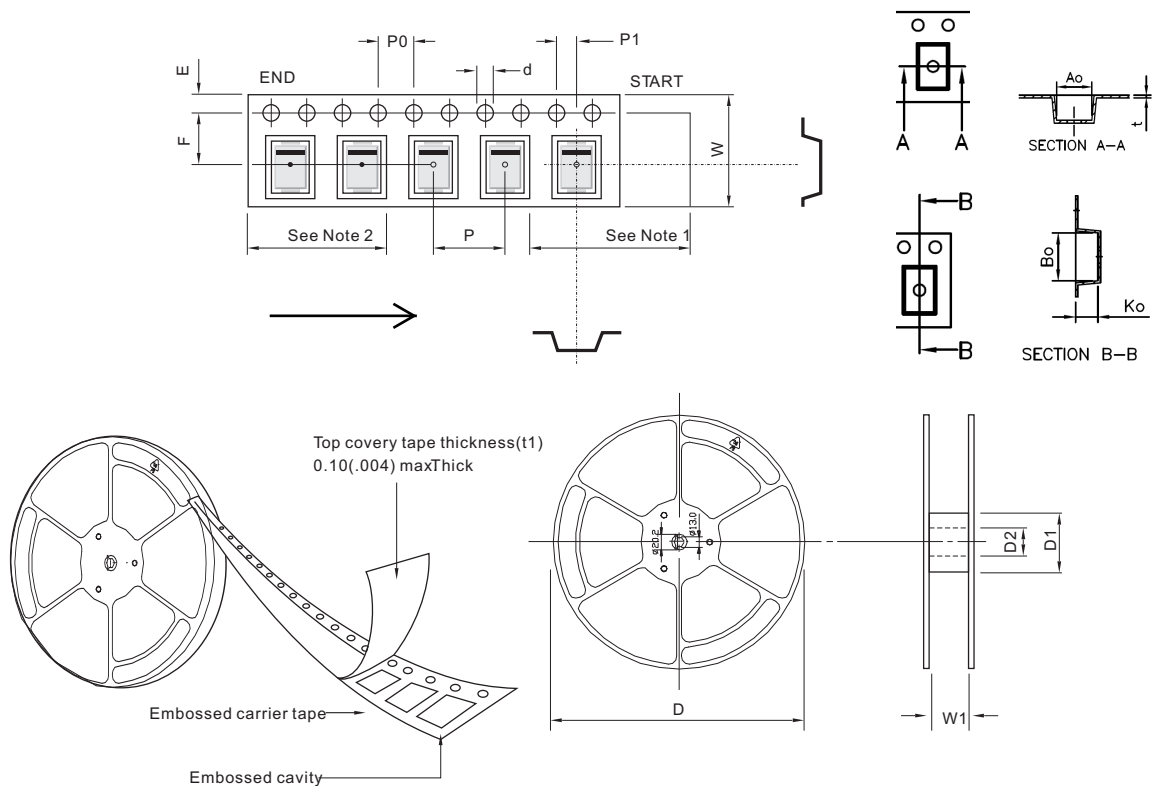
Unipolar



Bipolar



### 3. UNIPOLAR TAPING

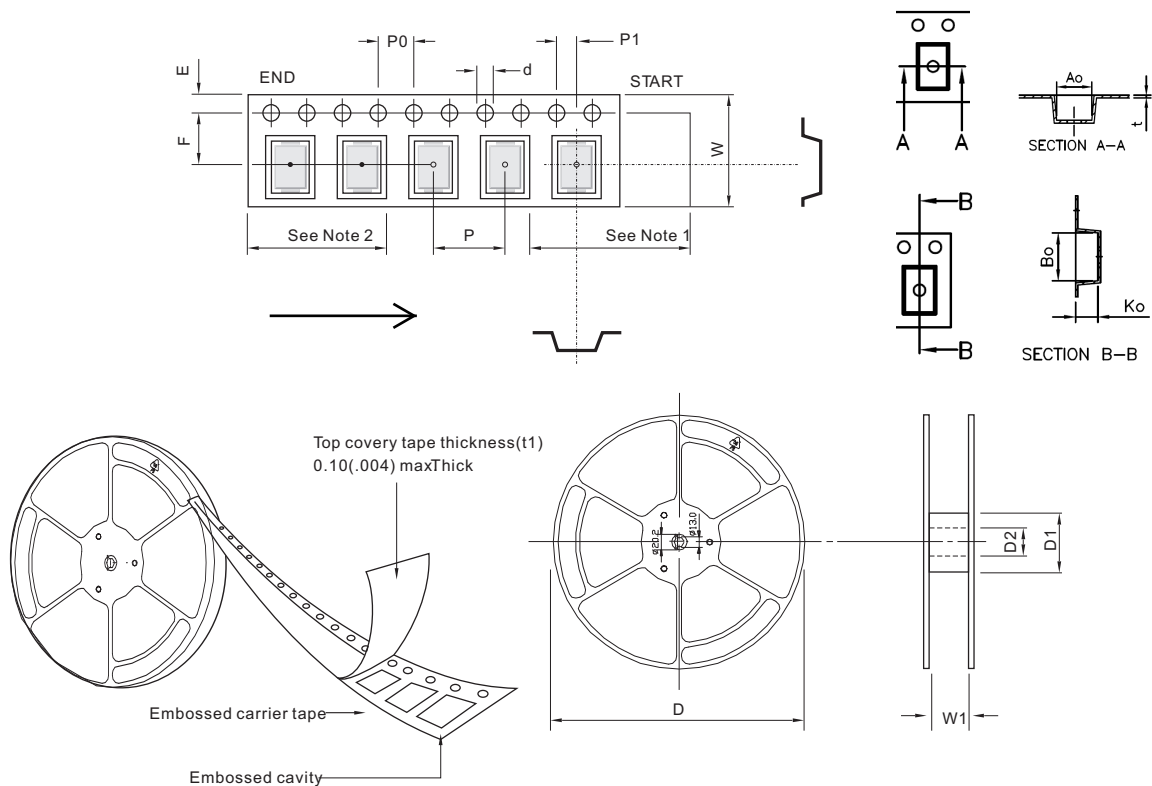


SYMBOL	mm(inch)	SYMBOL	mm(inch)	SYMBOL	mm(inch)
TYPE SIZE	12.00 (0.472)	TYPE SIZE	12.00 (0.472)	TYPE SIZE	16.00 (0.630)
Package	SMA/SMA(W)	Package	SMB	Package	SMC
d	1.55 ± 0.05 (0.06 ± 0.002)	d	1.55 ± 0.05 (0.06 ± 0.002)	d	1.50 ± 0.10 (0.06 ± 0.004)
D	178 (7.0)	D	178 (7.0)	D	178 (7.0)
D1	50.0min (1.97min)	D1	50.0min (1.97min)	D1	50.0min (1.97min)
D2	13.0 ± 0.2 (0.51 ± 0.008)	D2	13.0 ± 0.2 (0.51 ± 0.008)	D2	13.0 ± 0.50 (0.510 ± 0.020)
E	1.75 ± 0.10 (0.069 ± 0.004)	E	1.75 ± 0.10 (0.069 ± 0.004)	E	1.75 ± 0.10 (0.069 ± 0.004)
F	5.50 ± 0.10 (0.217 ± 0.004)	F	5.50 ± 0.05 (0.217 ± 0.002)	F	7.50 ± 0.10 (0.290 ± 0.004)
P	4.00 ± 0.10 (0.158 ± 0.004)	P	8.00 ± 0.10 (0.315 ± 0.004)	P	8.00 ± 0.10 (0.315 ± 0.004)
Po	4.00 ± 0.10 (0.158 ± 0.004)	Po	4.00 ± 0.10 (0.158 ± 0.004)	Po	4.00 ± 0.10 (0.158 ± 0.004)
P1	2.00 ± 0.10 (0.079 ± 0.004)	P1	2.00 ± 0.05 (0.079 ± 0.002)	P1	2.00 ± 0.10 (0.079 ± 0.004)
P1	2.00 ± 0.05 (0.079 ± 0.002)	W	12.0 ± 0.30 (0.472 ± 0.012)	W	16+0.3/-0.1 (0.63+0.012/-0.004)
W	12.0 ± 0.30 (0.472 ± 0.012)	W1	12.40~14.40 Max. (0.49~0.57)	W1	16.40~18.40 Max. (0.64~0.72)
W	12.0 ± 0.10 (0.472 ± 0.004)	Ao	3.81 ± 0.10 (0.150 ± 0.004)	Ao	6.07 ± 0.10 (0.240 ± 0.004)
W1	12.40~14.40 Max. (0.49~0.57)	t	0.29 ± 0.02 (0.011 ± 0.001)	t	0.32 ± 0.02 (0.013 ± 0.001)
Ao	2.72 ± 0.10 (0.107 ± 0.004)	Bo	5.74 ± 0.10 (0.226 ± 0.004)	Bo	8.31 ± 0.10 (0.327 ± 0.004)
Ao	2.85 ± 0.10 (0.112 ± 0.004)	Ko	2.41 ± 0.10 (0.100 ± 0.004)	Ko	2.34 ± 0.10 (0.092 ± 0.004)
t	0.29 ± 0.02 (0.011 ± 0.001)				
t	0.25 ± 0.05 (0.010 ± 0.002)				
t	0.23 ± 0.02 (0.010 ± 0.001)				
Bo	5.32 ± 0.10 (0.209 ± 0.004)				
Bo	5.40 ± 0.10 (0.213 ± 0.004)				
Ko	2.45 ± 0.10 (0.100 ± 0.004)				

**Note:**

1. There shall be a leader of 400 mm minimum of cover tape and carrier tape with empty compartments.
2. There shall be a trailer of 160 mm minimum of cover tape and carrier tape with empty compartments.
3. Devices are packed in accordance with EIA standard EIA-481 and specifications given above.

### 3. BIPOLAR TAPING



SYMBOL	mm(inch)	SYMBOL	mm(inch)	SYMBOL	mm(inch)
TYPE SIZE	12.00 (0.472)	TYPE SIZE	12.00 (0.472)	TYPE SIZE	16.00 (0.630)
Package	SMA/SMA(W)	Package	SMB	Package	SMC
d	1.55 ± 0.05 (0.06 ± 0.002)	d	1.55 ± 0.05 (0.06 ± 0.002)	d	1.50 ± 0.10 (0.06 ± 0.004)
D	178 (7.0)	D	178 (7.0)	D	178 (7.0)
D1	50.0min (1.97min)	D1	50.0min (1.97min)	D1	50.0min (1.97min)
D2	13.0 ± 0.2 (0.51 ± 0.008)	D2	13.0 ± 0.2 (0.51 ± 0.008)	D2	13.0 ± 0.50 (0.510 ± 0.020)
E	1.75 ± 0.10 (0.069 ± 0.004)	E	1.75 ± 0.10 (0.069 ± 0.004)	E	1.75 ± 0.10 (0.069 ± 0.004)
F	5.50 ± 0.10 (0.217 ± 0.004)	F	5.50 ± 0.05 (0.217 ± 0.002)	F	7.50 ± 0.10 (0.290 ± 0.004)
P	4.00 ± 0.10 (0.158 ± 0.004)	P	8.00 ± 0.10 (0.315 ± 0.004)	P	8.00 ± 0.10 (0.315 ± 0.004)
Po	4.00 ± 0.10 (0.158 ± 0.004)	Po	4.00 ± 0.10 (0.158 ± 0.004)	Po	4.00 ± 0.10 (0.158 ± 0.004)
P1	2.00 ± 0.10 (0.079 ± 0.004)	P1	2.00 ± 0.05 (0.079 ± 0.002)	P1	2.00 ± 0.10 (0.079 ± 0.004)
P1	2.00 ± 0.05 (0.079 ± 0.002)	W	12.0 ± 0.30 (0.472 ± 0.012)	W	16+0.3/-0.1 (0.63+0.012/-0.004)
W	12.0 ± 0.30 (0.472 ± 0.012)	W1	12.40~14.40 Max. (0.49~0.57)	W1	16.40~18.40 Max. (0.64~0.72)
W	12.0 ± 0.10 (0.472 ± 0.004)	Ao	3.81 ± 0.10 (0.150 ± 0.004)	Ao	6.07 ± 0.10 (0.240 ± 0.004)
W1	12.40~14.40 Max. (0.49~0.57)	t	0.29 ± 0.02 (0.011 ± 0.001)	t	0.32 ± 0.02 (0.013 ± 0.001)
Ao	2.72 ± 0.10 (0.107 ± 0.004)	Bo	5.74 ± 0.10 (0.226 ± 0.004)	Bo	8.31 ± 0.10 (0.327 ± 0.004)
Ao	2.85 ± 0.10 (0.112 ± 0.004)	Ko	2.41 ± 0.10 (0.100 ± 0.004)	Ko	2.34 ± 0.10 (0.092 ± 0.004)
t	0.29 ± 0.02 (0.011 ± 0.001)				
t	0.25 ± 0.05 (0.010 ± 0.002)				
t	0.23 ± 0.02 (0.010 ± 0.001)				
Bo	5.32 ± 0.10 (0.209 ± 0.004)				
Bo	5.40 ± 0.10 (0.213 ± 0.004)				
Ko	2.45 ± 0.10 (0.100 ± 0.004)				

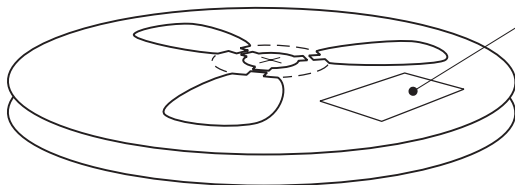
**Note:**

1. There shall be a leader of 400 mm minimum of cover tape and carrier tape with empty compartments.
2. There shall be a trailer of 160 mm minimum of cover tape and carrier tape with empty compartments.
3. Devices are packed in accordance with EIA standard EIA-481 and specifications given above.



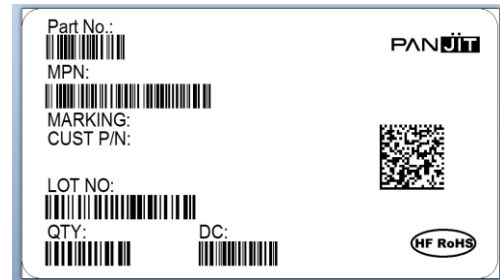
## 4. PACKING

### REEL PACKING

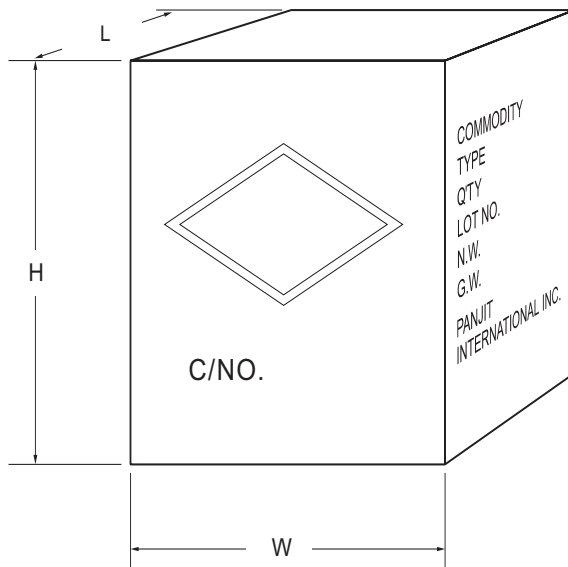


Quantity per Reel:

#### LABEL TYPE

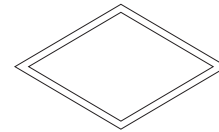


### CARTON



Box Dimensions : mm  
Quantity per Box:

#### SHIPPING MARK



C/NO.  
PRODUCT COUNTRY

#### SIDE MARK

COMMODITY:  
TYPE:  
Q'TY:  
LOT NO.  
N.W.  
G.W.  
PANJIT  
INTERNATIONAL INC.

Line	Package	Packing	Size	Quantity	Inner box size LxWxH (m/m)	Carton Quantity	Carton size LxWxH (m/m)
SMD	SMA	T/R	7"	1,800	188x188x67	10box/72K	390x220x370
	SMB	T/R		800	188x188x67	10box/32K	390x220x370
	SMC	T/R		800	188x188x67	10box/24K	390x220x370
	SMA(W)	T/R	13"	1,800	188x188x67	8box/100.8K	390x240x420
	SMA	T/R		7,500	350x337x44	8box/120K	375x360x390
	SMB	T/R		3,000	350x337x44	8box/48K	375x360x390
	SMC	T/R		3,000	350x337x44	7box/42K	375x360x390
	SMA(W)	T/R		7,500	350x337x44	10box/150K	355x355x400

**Packing Specifications**

Package	Reel Size	Reel	Carton	Carton Size	Approx. Gross Weight
	(inch)	(pcs)	(EA)	(mm)	(kg)
Reel Packing					
DFN0603	7	10,000	800,000	390 x 270 x 400	9.0
DFN0603-2L	7	10,000	800,000	390 x 270 x 400	9.0
DFN 2L	7	8,000	640,000	390 x 270 x 400	8.6
DFN 3L	7	8,000	640,000	390 x 270 x 400	8.6
DFN1006-2L	7	10,000	800,000	390 x 270 x 400	5.0
DFN1006-3L	7	10,000	800,000	390 x 270 x 400	5.0
DFN1010-6L(ESD)	7	5,000	400,000	455 x 270 x 440	8.84
DFN1010B-6L(ESD)	7	5,000	400,000	455 x 270 x 440	8.84
DFN1608-2L	7	3,000	240,000	390 x 270 x 400	9.7
DFN1610-2L	7	3,000	240,000	390 x 270 x 400	9.7
DFN2020-6L(ESD)	7	3,000	240,000	455 x 270 x 440	12.3
DFN2020B-6L(ESD)	7	3,000	240,000	455 x 270 x 440	12.3
DFN2020-8L(ESD)	7	3,000	240,000	455 x 270 x 440	11.2
DFN2510-10L	7	5,000	400,000	390 x 270 x 400	10.5
	13	12,000	144,000	375 x 360 x 213	6.4
DFN2510A-10L(ESD)	7	3,000	240,000	455 x 270 x 440	10.95
DFN3030B-8L(ESD)	7	3,000	240,000	455 x 270 x 440	10.5
DFN3333-8L	13	5,000	80,000	375 x 360 x 422	10.5
DFN3333B-8L	13	5,000	80,000	375 x 360 x 422	10.5
DFN3810-9L(ESD)	7	3,000	120,000	390 x 240 x 420	4.4
DFN5060-8L(ESD)	13	3,000	48,000	375 x 360 x 422	14.19
DFN5060B-8L(ESD)	13	3,000	48,000	375 x 360 x 422	14.19
DFN5060X-8L(ESD)	13	3,000	48,000	375 x 360 x 422	14.19
DFN5515-14L	7	3,000	240,000	390 x 270 x 400	12.9
DSN1608-2L	7	10,000	800,000	390 x 270 x 400	10
SOP-8	13	2,500	40,000	375 x 360 x 422	7.4
SOD-923	7	8,000	640,000	390 x 270 x 400	7.7
SOD-523	7	5,000	400,000	390 x 270 x 400	9.1
	13	12,000	144,000	375 x 360 x 230	5.4
SOD-323HE	7	5,000	400,000	390 x 270 x 400	11.9
	13	12,000	144,000	375 x 360 x 230	8.3
SOD-323	7	5,000	400,000	390 x 270 x 400	9.4
	13	12,000	144,000	375 x 360 x 230	5.9
SOD-323S	7	3,000	240,000	410 x 290 x 410	
SOD-123HE	7	3,000	240,000	390 x 270 x 400	12.4
	13	10,000	120,000	375 x 360 x 230	8.1
SOD-123FL	7	3,000	240,000	390 x 270 x 400	10.6
	13	10,000	120,000	375 x 360 x 230	7.2
SOD-123	7	3,000	240,000	390 x 270 x 400	9.9
	13	10,000	120,000	375 x 360 x 230	6.5
SOT-143	7	3,000	240,000	390 x 270 x 400	9.0
SOT-723(ESD)	7	8,000	640,000	455 x 270 x 440	10.5
SOT-563	7	4,000	320,000	390 x 270 x 400	10
	13	10,000	120,000	375 x 360 x 230	5.2
SOT-563(ESD)	7	4,000	320,000	455 x 270 x 440	10.8
SOT-553	7	4,000	320,000	390 x 270 x 400	9.4
	13	10,000	120,000	375 x 360 x 230	5.2

**Packing Specifications**

Package	Reel Size	Reel	Carton	Carton Size	Approx. Gross Weight
	(inch)	(pcs)	(EA)	(mm)	(kg)
Reel Packing					
SOT-523	7	4,000	320,000	390 x 270 x 400	10
SOT-523(ESD)	7	4,000	320,000	455 x 270 x 440	10.8
SOT-363	7	3,000	240,000	390 x 270 x 400	9.3
	13	10,000	120,000	375 x 360 x 230	7.1
SOT-363(ESD)	7	3,000	240,000	455 x 270 x 440	10.1
SOT-353	7	3,000	240,000	390 x 270 x 400	10
	13	10,000	120,000	375 x 360 x 230	7.2
SOT-323	7	3,000	240,000	390 x 270 x 400	7.9
	13	12,000	144,000	375 x 360 x 230	6.1
SOT-323(ESD)	7	3,000	240,000	455 x 270 x 440	8.7
SOT-23 6L	7	3,000	240,000	390 x 270 x 400	14.5
	13	10,000	120,000	375 x 360 x 230	7.9
SOT-23 6L(ESD)	7	3,000	240,000	455 x 270 x 440	15.3
SOT-23 6L-1	7	3,000	240,000	390 x 270 x 400	14.9
	13	10,000	120,000	375 x 360 x 230	8.1
SOT-23 6L-1(ESD)	7	3,000	240,000	455 x 270 x 440	15.7
SOT-23 5L	7	3,000	240,000	390 x 270 x 400	14.5
	13	10,000	120,000	375 x 360 x 230	7.9
SOT-23	7	3,000	240,000	390 x 270 x 400	9.8
	13	12,000	144,000	375 x 360 x 230	7
SOT-23(ESD)	7	3,000	240,000	455 x 270 x 440	10.6
SOT-223	13	2,500	40,000	375 x 360 x 422	14.96
SOT-89(ESD)	7	1,000	80,000	455 x 270 x 440	15.64
SMAF	7	3,000	120,000	390 x 240 x 420	10.9
	13	10,000	160,000	375 x 360 x 422	14.1
SMAF-C	7	3,000	120,000	390 x 240 x 420	10.9
	13	10,000	160,000	375 x 360 x 422	14.1
SMBF	7	1,500	60,000	390 x 240 x 420	9.6
	13	5,000	80,000	375 x 360 x 422	15.6
SMA(W)	7	1,800	100,800	390 x 240 x 420	13
	13	7,500	150,000	355 x 355 x 400	20.45
SMAS	7	2,300	128,800	390x 240x 420	11.5
	13	9,500	190,000	355x 355 x 400	16.1
SMA/DO-214AC	7	1,800	72,000	390 x 220 x 370	9.98
	13	7,500	120,000	375 x 360 x 390	17.35
SMB/DO-214AA	7	800	32,000	390 x 220 x 370	7.69
	13	3,000	48,000	375 x 360 x 390	13.23
SMC/DO-214AB	7	800	24,000	390 x 220 x 370	10.79
	13	3,000	42,000	375 x 360 x 390	17.98
SC-59 (ESD)	7	3,000	240,000	455 x 270 x 440	9.9
DO-41	13	5,000	25,000	340 x 340 x 410	11.04
DO-15	13	4,000	20,000	340 x 340 x 410	11.39
DO-201AD / DO-201AE	13	1,250	6,250	340 x 340 x 410	9.2
DO-218AC / DO-218AB	13	600	24,000	375 x 360 x 230	10.25
P-600	13	800	4,000	340 x 340 x 410	9.85

**Packing Specifications**

Package	Reel Size	Reel	Carton	Carton Size	Approx. Gross Weight
	(inch)	(pcs)	(EA)	(mm)	(kg)
Reel Packing					
DO-34	15	10,000	50,000	365 x 370 x 410	10.1
DO-35	15	10,000	50,000	365 x 370 x 410	11.2
DO-41G	15	5,000	25,000	365 x 370 x 410	10.9
MICRO-MELF	7	3,000	240,000	390 x 270 x 400	8.8
	13	10,000	200,000	355 x 355 x 400	11.5
QUADRO-MELF	7	2,500	200,000	390 x 270 x 400	13.3
	13	10,000	200,000	355 x 355 x 400	14.9
MINI-MELF/LL-34	7	2,500	200,000	390 x 270 x 400	12.7
	13	10,000	200,000	355 x 355 x 400	14.6
MELF/DL-41	7	1,500	84,000	390 x 270 x 400	18.3
	13	5,000	100,000	355 x 355 x 400	23.5
MDI	13	3,000	48,000	375 x 360 x 390	14.71
MICRO DIP/TDI	7	1,000	40,000	390 x 240 x 420	9.5
	13	4,000	64,000	375 x 360 x 422	17
MBF	13	5,000	80,000	375 x 360 x 390	15.9
SDIP	13	1,500	21,000	375 x 360 x 390	14.31
TO-277	7	1,500	60,000	390 x 240 x 420	12.2
	13	5,000	80,000	375 x 360 x 422	19.1
TO-277A	13	5,000	80,000	375 x 360 x 422	18.52
TO-277B	13	5,000	80,000	375 x 360 x 422	20.6
TO-252	13	3,000	42,000	375 x 360 x 390	18.8
TO-252AA	13	3,000	48,000	375 x 360 x 422	24.16
TO-252AA	13	3,000	42,000	375 x 360 x 390	20.78
TO-263/D <sup>2</sup> PAK	13	800	6,400	375 x 360 x 390	14.45
TOLL	13	2,000	16,000	375 x 360 x 422	12.5
ABS	13	4,000	6,400	375 x 360 x 422	17.8
M4	13	3,000	42,000	375 x 360 x 390	14
M8	13	2,000	16,000	375 x 360 x 390	16.86

**Packing Specifications**

Package	Box	Inner Box Size	Carton	Carton Size	Approx. Gross Weight
	(EA)	(mm)	(EA)	(mm)	(kg)
Bulk Packing					
DO-41	1,000	198 x 84 x 20	50,000	459 x 214 x 256	19.3
DO-15	1,000	200 x 85 x 25	40,000	459 x 214 x 256	20.7
DO-201AD / DO-201AE	500	200 x 85 x 40	12,500	459 x 214 x 256	15.95
P-600	100	208 x 82 x 40	2,500	459 x 214 x 256	6.83
DO-34	2,000	240 x 90 x 100	120,000	410 x 268 x 345	14.5
DO-35	2,000	240 x 90 x 100	120,000	410 x 268 x 345	17.1
DO-41G	1,000	240 x 90 x 100	60,000	410 x 268 x 345	18.5
TO-220AC	2,000	540 x 145 x 85	8,000	555 x 306 x 200	21.76
ITO-220AC	2,000	540 x 145 x 85	8,000	555 x 306 x 200	19.34
TO-220AB	2,000	540 x 145 x 85	8,000	555 x 306 x 200	22
TO-220AB-L	2,000	540 x 145 x 85	8,000	555 x 306 x 200	24.63
ITO-220AB	2,000	540 x 145 x 85	8,000	555 x 306 x 200	19.58
ITO-220AB-F	2,000	540 x 145 x 85	8,000	555 x 306 x 188	25.5
TO-251AA	8,000	555 x 145 x 87	32,000	570 x 306 x 203	23.87
TO-251AB	8,000	555 x 145 x 95	32,000	572 x 306 x 218	18.64
TO-263/D <sup>2</sup> PAK	2,000	540 x 145 x 85	8,000	555 x 306 x 200	18.7
GBU	250	220 x 120 x 43	5,000	510 x 235 x 245	21.5
GBU-2	1,000	485 x 185 x 120	2,000	500 x 200 x 270	12.54
GBL	300	240 x 120 x 35	6,000	510 x 260 x 200	15
GBL-2	2,000	550 x 200 x 122	4,000	565 x 215 x 265	13.15
GBJ	200	200 x 145 x 42	3,000	455 x 220 x 240	14.5
GBJ-2	900	485 x 185 x 120	1,800	500 x 200 x 270	18.2
GBJA	750	479 x 123 x 113	1,500	500 x 265 x 137	11
KBP	500	225 x 160 x 35	7,500	500 x 236 x 196	12.58
KBPF	500	225 x 160 x 35	7,500	500 x 250 x 195	13.3
KBL	200	257 x 125 x 50	3,000	415 x 275 x 300	17.5
KBU	200	274 x 150 x 60	3,000	470 x 290 x 330	23.7
KBJ	200	306 x 108 x 42	2,000	322 x 246 x 252	15
KBJ-2	1,000	550 x 200 x 122	2,000	565 x 215 x 265	13.13
KBJ-P	250	305 x 130 x 45	2,000	327 x 290 x 210	15.05
D3K	500	210 x 155 x 30	7,500	480 x 225 x 170	11.6
DXK	2,800	550 x 200 x 122	5,600	565 x 215 x 265	13.8
TO-3P/TO-247AD	-	-	1,500	530 x 243 x 100	13.9
TO-247AD 2L / TO-3PL	-	-	1,500	530 x 255 x 110	12.2
TO-247AD-2LD	-	-	1,500	530 x 243 x 100	14.35

**Packing Specifications**

Package	Box	Inner Box Size	Carton	Carton Size	Approx. Gross Weight
	(EA)	(mm)	(EA)	(mm)	(kg)
Tube Packing					
GBJ-1	750	490 x 201 x 104	1,500	505 x 225 x 235	16

**Packing Specifications**

Package	Tape Space	Ammo	Inner Box Size	Carton	Carton Size	Appox. Gross Weight
	(mm)					
Ammunition Packing						
DO-41	52	5,000	255 x 75 x 150	40,000	339 x 276 x 330	15.9
	52	3,000	255 x 73 x 95	24,000	333 x 281 x 218	8.9
DO-15	52	3,000	255 x 75 x 150	24,000	339 x 276 x 330	13.25
	52	1,500	255 x 73 x 95	18,000	339 x 276 x 330	8.64
DO-201AD / DO-201AE	52	1,250	255 x 75 x 150	10,000	339 x 276 x 330	13.36
	52	750	255 x 75 x 95	9,000	339 x 276 x 330	11.62
P-600	52	400	255 x 75 x 150	3,200	339 x 276 x 330	8.1
DO-34	52	5,000	248 x 80 x 75	100,000	410 x 268 x 345	13.1
	26	5,000	248 x 80 x 48	150,000	410 x 268 x 345	15.3
DO-35	52	5,000	248 x 80 x 75	100,000	410 x 268 x 345	15.7
	26	5,000	248 x 80 x 48	150,000	410 x 268 x 345	17.5
DO-41G	52	2,500	248 x 80 x 75	50,000	410 x 268 x 345	16.4
	26	2,500	248 x 80 x 48	75,000	410 x 268 x 345	17.8