RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

1.5SMBJxxV

SURFACE MOUNT GPP

1500W Surface Mount Transinet Voltage Suppression

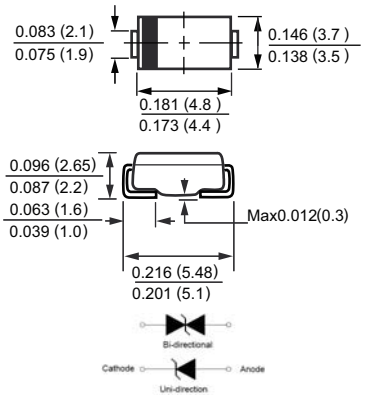
FEATURES

* Peak power disspatiom 1500W@10 x 1000 us Pluse
* Low incremental surge resistance
* Excellent clamping capability
* Glass passivated junction
* Fast response time
* Typical I_R less than 1uA above 10V
* RoHS compliant
* P/N suffix V means AEC-Q101 qualified, e.g:1.5SMBJ5.0CAV
* P/N suffix V means Halogen-free

MECHANICAL DATA

* Epoxy: Device has UL flammability classification 94V-O
* Mounting Position:Any
* UL file NO.:E211196

DO-214AA



*Dimensions in inches and (millimeters)

Ratings at 25 °C ambient temperature unless otherwise specified.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA suffix for types 1.5SMBJ5.0A thru 1.5SMBJ75A
Electrical characteristics apply in both direction

MAXIMUM RATINGS (At T_A = 25°C unless otherwise noted)

RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation with a 10/1000uS (Note 1,2)	P_{PPM}	1500	Watts
Steady State Power Dissipation (Note3)	$P_{M(AV)}$	5.0	Watts
Peak Forward Surge Current 8.3mS single half sine-wave superimposed on rated load (JEDEC method) (Note4) unidirectional only	I_{FSM}	150	Amps
Typical Current Squarad Time	I^2t	93.37	A^2Sec
Typical Thermal Resistance	$R_{\theta JA}$	100	°C/W
Typical Thermal Resistance	$R_{\theta JL}$	20	°C/W
Maximum Instantaneous Forward Voltage at 50A for unidirectional only (Note 5)	V_F	5.0	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°C

NOTES : 1. Non-repetitive current pulse , 10/1000us Waveform.
2. Mounted on copper pad area of 5×5mm to each terminal.
3. Infinite HeatS ink at T_A= 50°C
4. Measured on 8.3mS single half sine-wave duty cycle = 4 pules per minute maximum.
5. For UnidirectionalO nly, V_F <3.5V for V_{BR} ≤200V and V_F<6.5V for V_{BR} ≥201V.

2023-09/61
REV:B

Electrical Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified).

Rectron Industry No.	Rectron House No.	Device Marking	Reverse Stnd-off Voltge	Breakdown Volatge VBR.@ IT		Test Current	Reverse Leakage	Max Clamp Volatge	Peak Pulse Current
			V_{RWM}	Min	Max	I_T	$I_R@V_{RWM}$	$V_{C.@}$ I_{PP}	I_{PP}
			V	V	V	mA	μA	V	A
1.5SMBJ5.0AV	1.5FMBJ5.0AV	GDE	5	6.4	7	10	500	9.2	163
1.5SMBJ6.0AV	1.5FMBJ6.0AV	GDG	6	6.67	7.37	10	500	10.3	145.6
1.5SMBJ6.5AV	1.5FMBJ6.5AV	GDK	6.5	7.22	7.98	10	300	11.2	134
1.5SMBJ7.0AV	1.5FMBJ7.0AV	GDM	7	7.78	8.6	10	200	12	125
1.5SMBJ7.5AV	1.5FMBJ7.5AV	GDP	7.5	8.33	9.21	1	100	12.9	116.3
1.5SMBJ8.0AV	1.5FMBJ8.0AV	GDR	8	8.89	9.83	1	50	13.6	110.3
1.5SMBJ8.5AV	1.5FMBJ8.5AV	GDT	8.5	9.44	10.4	1	20	14.4	104.2
1.5SMBJ9.0AV	1.5FMBJ9.0AV	GDV	9	10	11.1	1	10	15.4	97.4
1.5SMBJ10AV	1.5FMBJ10AV	GDX	10	11.1	12.3	1	5	17	88.2
1.5SMBJ11AV	1.5FMBJ11AV	GDZ	11	12.2	13.5	1	1	18.2	82.4
1.5SMBJ12AV	1.5FMBJ12AV	GEE	12	13.3	14.7	1	1	19.9	75.4
1.5SMBJ13AV	1.5FMBJ13AV	GEG	13	14.4	15.9	1	1	21.5	69.8
1.5SMBJ14AV	1.5FMBJ14AV	GEK	14	15.6	17.2	1	1	23.2	64.7
1.5SMBJ15AV	1.5FMBJ15AV	GEM	15	16.7	18.5	1	1	24.4	61.5
1.5SMBJ16AV	1.5FMBJ16AV	GEP	16	17.8	19.7	1	1	26	57.7
1.5SMBJ17AV	1.5FMBJ17AV	GER	17	18.9	20.9	1	1	27.6	54.4
1.5SMBJ18AV	1.5FMBJ18AV	GET	18	20	22.1	1	1	29.2	51.4
1.5SMBJ20AV	1.5FMBJ20AV	GEV	20	22.2	24.5	1	1	32.4	46.3
1.5SMBJ22AV	1.5FMBJ22AV	FTT	22	24.4	26.9	1	1	35.5	42.3
1.5SMBJ24AV	1.5FMBJ24AV	GEZ	24	26.7	29.5	1	1	38.9	38.6
1.5SMBJ26AV	1.5FMBJ26AV	GFE	26	28.9	31.9	1	1	42.1	35.6
1.5SMBJ28AV	1.5FMBJ28AV	GFG	28	31.1	34.4	1	1	45.4	33.1
1.5SMBJ30AV	1.5FMBJ30AV	GFK	30	33.3	36.8	1	1	48.4	31
1.5SMBJ33AV	1.5FMBJ33AV	GFM	33	36.7	40.6	1	1	53.3	28.2
1.5SMBJ36AV	1.5FMBJ36AV	GFP	36	40	44.2	1	1	58.1	25.8
1.5SMBJ40AV	1.5FMBJ40AV	GFR	40	44.4	49.1	1	1	64.5	23.3
1.5SMBJ43AV	1.5FMBJ43AV	GFT	43	47.8	52.8	1	1	69.4	21.6
1.5SMBJ45AV	1.5FMBJ45AV	GFV	45	50	55.3	1	1	72.7	20.6
1.5SMBJ48AV	1.5FMBJ48AV	FMF	48	53.3	58.9	1	1	77.4	19.4
1.5SMBJ51AV	1.5FMBJ51AV	GJV	51	56.7	62.7	1	1	82.4	18.2
1.5SMBJ54AV	1.5FMBJ54AV	FFF	54	60	66.3	1	1	87.1	17.2
1.5SMBJ58AV	1.5FMBJ58AV	GFZ	58	64.4	71.2	1	1	93.6	16.1
1.5SMBJ60AV	1.5FMBJ60AV	GGE	60	66.7	73.7	1	1	96.8	15.5
1.5SMBJ64AV	1.5FMBJ64AV	GGG	64	71.1	78.6	1	1	103	14.6
1.5SMBJ70AV	1.5FMBJ70AV	GGK	70	77.8	86	1	1	113	13.3
1.5SMBJ75AV	1.5FMBJ75AV	GGM	75	83.3	92.1	1	1	121	12.4

Rectron Industry No.	Rectron House No.	Device Marking	Reverse Stnd-off Voltge	Breakdown Volatge VBR.@ I_T		Test Current	Reverse Leakage	Max Clamp Volatge	Peak Pulse Current
			V_{RWM}	Min	Max	I_T	I_R@V_{RWM}	$V_{C.@}$ I_{PP}	I_{PP}
			V	V	V	mA	μA	V	A
1.5SMBJ5.0CAV	1.5FMBJ5.0CAV	BDE	5	6.4	7	10	500	9.2	163
1.5SMBJ6.0CAV	1.5FMBJ6.0CAV	BDG	6	6.67	7.37	10	500	10.3	145.6
1.5SMBJ6.5CAV	1.5FMBJ6.5CAV	BDK	6.5	7.22	7.98	10	300	11.2	134
1.5SMBJ7.0CAV	1.5FMBJ7.0CAV	BDM	7	7.78	8.6	10	200	12	125
1.5SMBJ7.5CAV	1.5FMBJ7.5CAV	BDP	7.5	8.33	9.21	1	100	12.9	116.3
1.5SMBJ8.0CAV	1.5FMBJ8.0CAV	BDR	8	8.89	9.83	1	50	13.6	110.3
1.5SMBJ8.5CAV	1.5FMBJ8.5CAV	BDT	8.5	9.44	10.4	1	20	14.4	104.2
1.5SMBJ9.0CAV	1.5FMBJ9.0CAV	BDV	9	10	11.1	1	10	15.4	97.4
1.5SMBJ10CAV	1.5FMBJ10CAV	BDX	10	11.1	12.3	1	5	17	88.2
1.5SMBJ11CAV	1.5FMBJ11CAV	BDZ	11	12.2	13.5	1	1	18.2	82.4
1.5SMBJ12CAV	1.5FMBJ12CAV	BEE	12	13.3	14.7	1	1	19.9	75.4
1.5SMBJ13CAV	1.5FMBJ13CAV	BEG	13	14.4	15.9	1	1	21.5	69.8
1.5SMBJ14CAV	1.5FMBJ14CAV	BEK	14	15.6	17.2	1	1	23.2	64.7
1.5SMBJ15CAV	1.5FMBJ15CAV	FMM	15	16.7	18.5	1	1	24.4	61.5
1.5SMBJ16CAV	1.5FMBJ16CAV	BEP	16	17.8	19.7	1	1	26	57.7
1.5SMBJ17CAV	1.5FMBJ17CAV	BER	17	18.9	20.9	1	1	27.6	54.4
1.5SMBJ18CAV	1.5FMBJ18CAV	BET	18	20	22.1	1	1	29.2	51.4
1.5SMBJ20CAV	1.5FMBJ20CAV	BEV	20	22.2	24.5	1	1	32.4	46.3
1.5SMBJ22CAV	1.5FMBJ22CAV	BEX	22	24.4	26.9	1	1	35.5	42.3
1.5SMBJ24CAV	1.5FMBJ24CAV	BEZ	24	26.7	29.5	1	1	38.9	38.6
1.5SMBJ26CAV	1.5FMBJ26CAV	BFE	26	28.9	31.9	1	1	42.1	35.6
1.5SMBJ28CAV	1.5FMBJ28CAV	BFG	28	31.1	34.4	1	1	45.4	33.1
1.5SMBJ30CAV	1.5FMBJ30CAV	BFK	30	33.3	36.8	1	1	48.4	31
1.5SMBJ33CAV	1.5FMBJ33CAV	BFM	33	36.7	40.6	1	1	53.3	28.2
1.5SMBJ36CAV	1.5FMBJ36CAV	BFP	36	40	44.2	1	1	58.1	25.8
1.5SMBJ40CAV	1.5FMBJ40CAV	BFR	40	44.4	49.1	1	1	64.5	23.3
1.5SMBJ43CAV	1.5FMBJ43CAV	BFT	43	47.8	52.8	1	1	69.4	21.6
1.5SMBJ45CAV	1.5FMBJ45CAV	BFV	45	50	55.3	1	1	72.7	20.6
1.5SMBJ48CAV	1.5FMBJ48CAV	BJT	48	53.3	58.9	1	1	77.4	19.4
1.5SMBJ51CAV	1.5FMBJ51CAV	BJV	51	56.7	62.7	1	1	82.4	18.2
1.5SMBJ54CAV	1.5FMBJ54CAV	BFX	54	60	66.3	1	1	87.1	17.2
1.5SMBJ58CAV	1.5FMBJ58CAV	BFZ	58	64.4	71.2	1	1	93.6	16.1
1.5SMBJ60CAV	1.5FMBJ60CAV	BGE	60	66.7	73.7	1	1	96.8	15.5
1.5SMBJ64CAV	1.5FMBJ64CAV	BGG	64	71.1	78.6	1	1	103	14.6
1.5SMBJ70CAV	1.5FMBJ70CAV	BGK	70	77.8	86	1	1	113	13.3
1.5SMBJ75CAV	1.5FMBJ75CAV	BGM	75	83.3	92.1	1	1	121	12.4

Notes: For Bi-directional type having V_{RWM} of 10 Volts and less, the I_R limit is double.
For parts without A, the VBR is ± 10% and VC is 5% higher than with A parts.

RATING AND CHARACTERISTICS CURVES (1.5SMBJxxV)

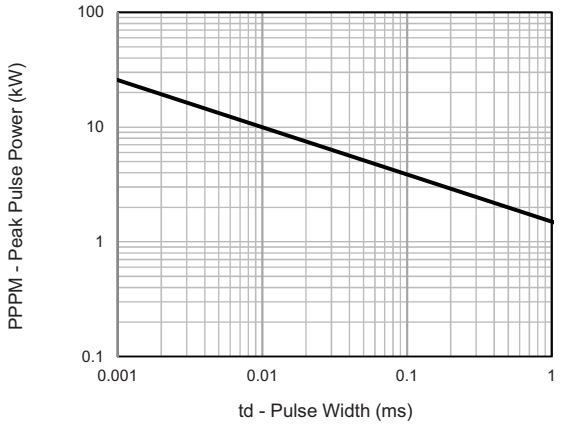


Fig.1 - Peak Pulse Power Rating

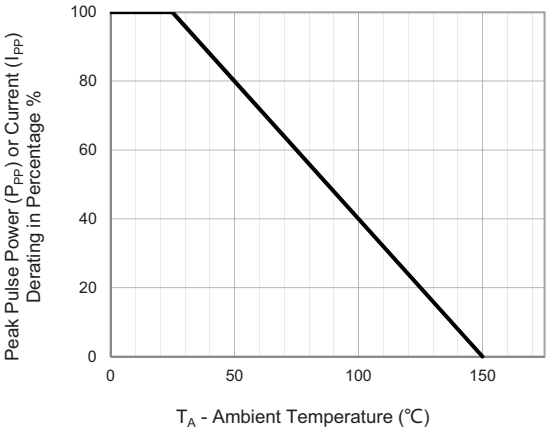


Fig.2 - Pulse Derating Cure

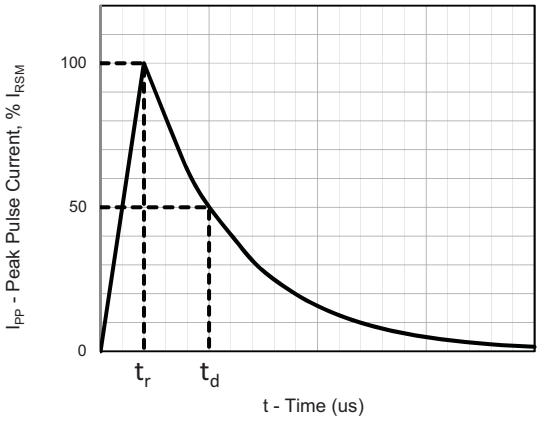


Fig.3 – Pulse Waveform

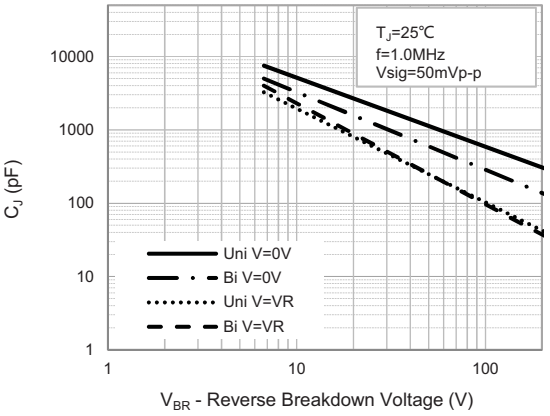


Fig.4 - Typical Junction Capacitance

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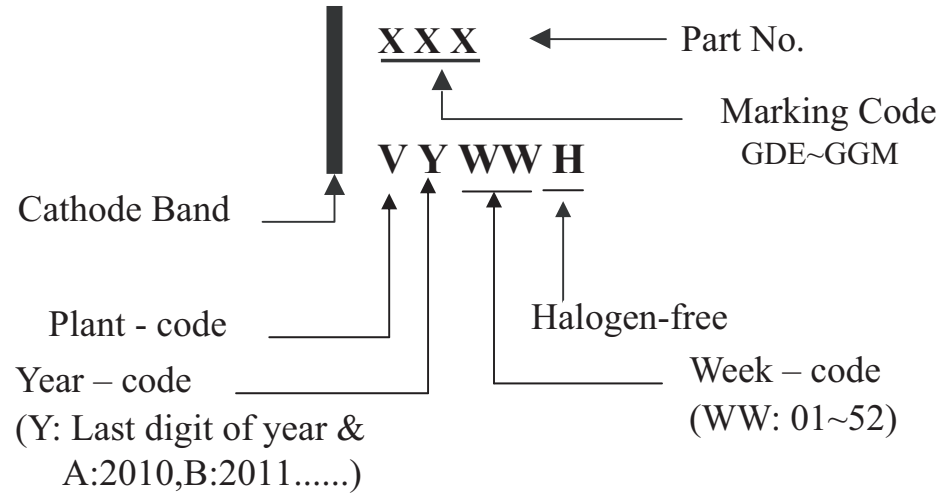
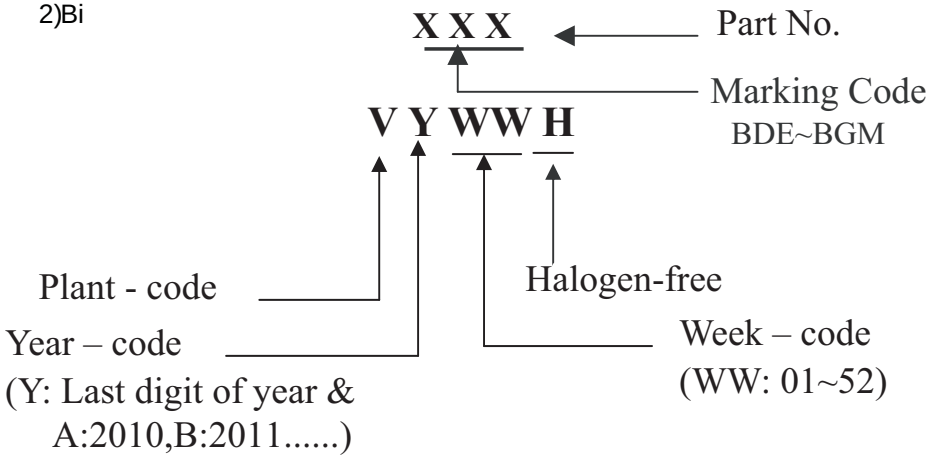
1. Internal Circuit

2. Marking on the body

1)Uni



2)Bi



PACKAGING OF DIODE AND BRIDGE RECTIFIERS

REEL PACK

PACKAGE	PACKING CODE	EA PER REEL	EA PER INNER BOX	COMPONENT SPACE (mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SMB	-W/-T	3,000	6,000	---	---	330	360*355*360	48,000	13.90

REEL TAPING SPECIFICATIONS FOR SURFACE MOUNT DEVICES-FLAT MELF (SMA/SMB/SMC)

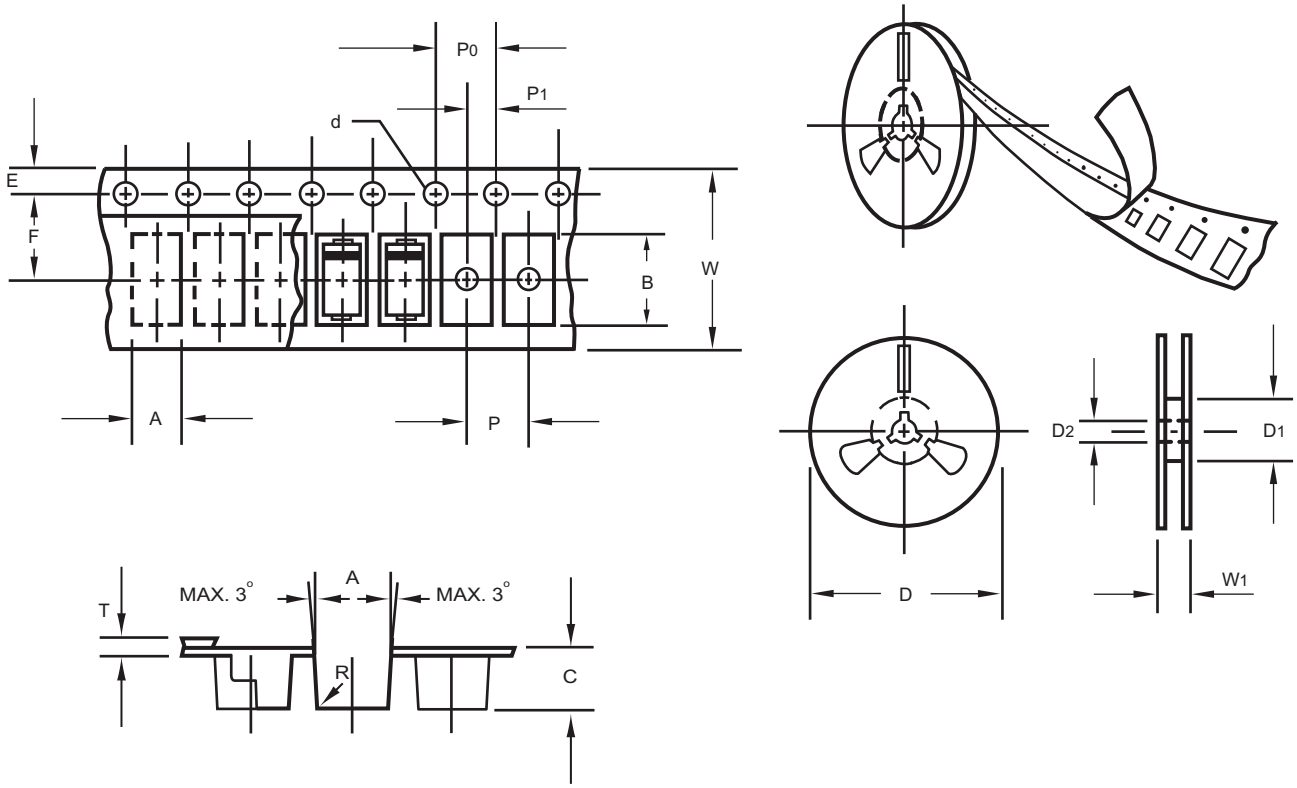


Fig.: Configuration of FLAT MELF TAPING (SMA/SMB/SMC)

ITEM	SYMBOL	DO214AC (SMA) mm(inch)	DO214AA (SMB) mm(inch)	DO214AB (SMC) mm(inch)
Carrier width	A	2.6 ± 0.15 (.102 ± .006)	3.65 ± 0.1 (.144 ± .004)	6.0 ± 0.1 (.236 ± .004)
Carrier length	B	5.15 ± 0.15 (.203 ± .006)	5.69 ± 0.1 (.224 ± .004)	8.30 ± 0.1 (.327 ± .004)
Carrier depth	C	2.3 ± 0.15 (.091 ± .006)	2.67 ± 0.1 (.105 ± .004)	2.5 ± 0.1 (.098 ± .004)
Sprocket hole	d	1.5 ± 0.1 (.059 ± .004)	1.5 ± 0.1 (.059 ± .004)	1.5 ± 0.1 (.059 ± .004)
Reel outside diameter	D	178 ± 2.0 (7.0 ± .079)	178 ± 2.0 (7.0 ± .079)	178 ± 2.0 (7.0 ± .079)
Reel inner diameter	D_1	50 Min.	50 Min.	50 Min.
Feed hole diameter	D_2	13 ± 0.5 (.512 ± .020)	13 ± 0.5 (.512 ± .020)	13 ± 0.5 (.512 ± .020)
Stroket hole position	E	1.5 ± 0.1 (.059 ± .004)	1.5 ± 0.1 (.059 ± .004)	1.5 ± 0.1 (.059 ± .004)
Punch hole position	F	5.65 ± 0.05 (.222 ± .002)	5.65 ± 0.05 (.222 ± .002)	7.65 ± 0.05 (.301 ± .002)
Punch hole pitch	P	4.0 ± 0.1 (.157 ± .004)	8.0 ± 0.1 (.315 ± .004)	8.0 ± 0.1 (.315 ± .004)
Sprocket hole pitch	P_0	4.0 ± 0.1 (.157 ± .004)	4.0 ± 0.1 (.157 ± .004)	4.0 ± 0.1 (.157 ± .004)
Embossment center	P_1	2.0 ± 0.1 (.079 ± .004)	2.0 ± 0.1 (.079 ± .004)	4.0 ± 0.1 (.157 ± .004)
Totall tape thickness	T	0.30 ± .05 (.012 ± .002)	0.6 Max.	0.6 Max.
Tape width	W	12.0 ± 0.2 (.472 ± .008)	12.0 ± 0.2 (.472 ± .008)	16.0 ± 0.2 (.630 ± .008)
Reel width	W_1	16.8 ± 2.0 (.661 ± .079)	16.8 ± 2.0 (.661 ± .079)	24.0 ± 2.0 (.945 ± .079)

Notes: 1.Devices are packed in accordance with EIA standard RS-481-A and specification given above.
2.Available on 7 inch (1500 ct.) or 13 inch (5000 ct.) diameter reels.

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