

Features

- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- 1000W peak pulse power capability at 10/1000μs waveform, repetition rate (duty cycle): 0.01%
- Fast response time
- Typical I_R less than 1μA above 12V
- High Temperature soldering: 260°C/10 seconds at terminals
- Plastic package has underwriters laboratory flammability 94V-0
- Meets MSL level 1, per J-STD-020
- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance

Mechanical Data

- Case: JEDEC DO-214AA. Molded plastic over glass passivated junction
- Terminal: Tin plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode except bi-directional models
- Standard Packaging: 12mm tape (EIA STD RS-481)
- Weight: 0.10g

Applications

- I/O interface
- AC/DC power supply
- Low frequency signal transmission line (RS232, RS485, etc.)

Maximum Ratings and Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

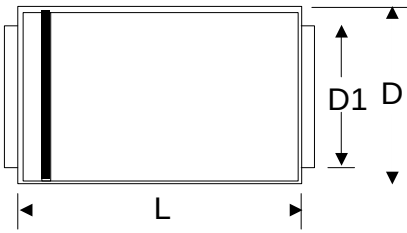
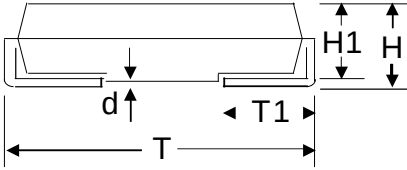
Rating	Symbol	Value	Units
Peak pulse power dissipation at 10/1000μs waveform (Note1, Note2, Fig.1)	P_{PPM}	Minimum 1000	Watts
Peak pulse current of at 10/1000μs waveform (Note 1, Fig.3)	I_{PPM}	See Table	Amps
Steady state power dissipation at $T_A=50^\circ\text{C}$ (Fig.5)	$P_{M(AV)}$	5.0	Watts
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3, Fig.6)	I_{FSM}	100	Amps
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-55 to +150	°C
Typical thermal resistance junction to lead	$R_{\theta JL}$	20	°C/W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	100	°C/W

Notes: 1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig.2.

2. Mounted on 5.0mm×5.0mm (0.03mm thick) copper pads to each terminal.

3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

Dimensions (SMB/DO-214AA)

	Symbol	Millimeters		Inches	
		Min.	Max.	Min.	Max.
	L	4.06	4.57	0.160	0.180
	D	3.30	3.94	0.130	0.155
	D1	1.95	2.20	0.077	0.086
	T	5.21	5.59	0.205	0.220
	T1	0.76	1.52	0.030	0.060
	d	-	0.203	-	0.008
	H	2.15	2.65	0.085	0.104
	H1	2.13	2.47	0.084	0.097

Electrical Characteristics ($T_A=25^\circ\text{C}$)

Part Number		Marking		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{①}$
Uni-Polar	Bi-Polar	Uni	Bi	V	μA	min(V)	max(V)	mA	max(V)	A
10BJ5.0A	10BJ5.0CA	A5	C5	5.0	200	6.40	7.00	10	9.2	108.7
10BJ6.0A	10BJ6.0CA	A6	C6	6.0	200	6.67	7.37	10	10.3	97.1
10BJ6.5A	10BJ6.5CA	A6V	C6V	6.5	120	7.22	7.98	10	11.2	89.3
10BJ7.0A	10BJ7.0CA	A7	C7	7.0	80	7.78	8.60	10	12.0	83.4
10BJ7.5A	10BJ7.5CA	A7V	C7V	7.5	50	8.33	9.21	1	12.9	77.6
10BJ8.0A	10BJ8.0CA	A8	C8	8.0	20	8.89	9.83	1	13.6	73.6
10BJ8.5A	10BJ8.5CA	A8V	C8V	8.5	10	9.44	10.40	1	14.4	69.5
10BJ9.0A	10BJ9.0CA	A9	C9	9.0	5	10.00	11.10	1	15.4	65.0
10BJ10A	10BJ10CA	A10	C10	10	2	11.10	12.30	1	17.0	58.9
10BJ11A	10BJ11CA	A11	C11	11	2	12.20	13.50	1	18.2	55.0
10BJ12A	10BJ12CA	A12	C12	12	2	13.30	14.70	1	19.9	50.3
10BJ13A	10BJ13CA	A13	C13	13	1	14.40	15.90	1	21.5	46.6
10BJ14A	10BJ14CA	A14	C14	14	1	15.60	17.20	1	23.2	43.1
10BJ15A	10BJ15CA	A15	C15	15	1	16.70	18.50	1	24.4	41.0
10BJ16A	10BJ16CA	A16	C16	16	1	17.80	19.70	1	26.0	38.5
10BJ17A	10BJ17CA	A17	C17	17	1	18.90	20.90	1	27.6	36.3
10BJ18A	10BJ18CA	A18	C18	18	1	20.00	22.10	1	29.2	34.3
10BJ20A	10BJ20CA	A20	C20	20	1	22.20	24.50	1	29.9	30.9
10BJ22A	10BJ22CA	A22	C22	22	1	24.40	26.90	1	35.5	28.2
10BJ24A	10BJ24CA	A24	C24	24	1	26.70	29.50	1	38.9	25.7

Electrical Characteristics (T_A=25 °C)

Part Number		Marking		V _R	R@V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP} ^①
Uni Polar	Bi Polar	Uni	Bi	V	μA	min(V)	max(V)	mA	max(V)	A
10BJ26A	10BJ26CA	A26	C26	26	1	28.90	31.90	1	42.1	23.8
10BJ28A	10BJ28CA	A28	C28	28	1	31.10	34.40	1	45.4	22.1
10BJ30A	10BJ30CA	A30	C30	30	1	33.30	36.80	1	48.4	20.7
10BJ33A	10BJ33CA	A33	C33	33	1	36.70	40.60	1	53.3	18.8
10BJ36A	10BJ36CA	A36	C36	36	1	40.00	44.20	1	58.1	17.2
10BJ40A	10BJ40CA	A40	C40	40	1	44.40	49.10	1	64.5	15.5
10BJ43A	10BJ43CA	A43	C43	43	1	47.80	52.80	1	69.4	14.4
10BJ45A	10BJ45CA	A45	C45	45	1	50.00	55.30	1	72.7	13.8
10BJ48A	10BJ48CA	A48	C48	48	1	53.30	58.90	1	77.4	13.0
10BJ51A	10BJ51CA	A51	C51	51	1	56.70	62.70	1	82.4	12.2
10BJ54A	10BJ54CA	A54	C54	54	1	60.00	66.30	1	87.1	11.5
10BJ58A	10BJ58CA	A58	C58	58	1	64.40	71.20	1	93.6	10.7
10BJ60A	10BJ60CA	A60	C60	60	1	66.70	73.70	1	96.8	10.3
10BJ64A	10BJ64CA	A64	C64	64	1	71.10	78.60	1	103.0	9.7
10BJ70A	10BJ70CA	A70	C70	70	1	77.80	86.00	1	113.0	8.9
10BJ75A	10BJ75CA	A75	C75	75	1	83.30	92.10	1	121.0	8.3
10BJ78A	10BJ78CA	A78	C78	78	1	86.70	95.80	1	126.0	7.9
10BJ85A	10BJ85CA	A85	C85	85	1	94.40	104.0	1	137.0	7.3
10BJ90A	10BJ90CA	A90	C90	90	1	100.0	111.0	1	146.0	6.9
10BJ100A	10BJ100CA	A100	C100	100	1	111.0	123.0	1	162.0	6.2
10BJ110A	10BJ110CA	A110	C100	110	1	122.0	135.0	1	177.0	5.6
10BJ120A	10BJ120CA	A120	C120	120	1	133.0	147.0	1	193.0	5.2
10BJ130A	10BJ130CA	A130	C130	130	1	144.0	159.0	1	209.0	4.8
10BJ150A	10BJ150CA	A150	C150	150	1	167.0	185.0	1	243.0	4.2
10BJ160A	10BJ160CA	A160	C160	160	1	178.0	197.0	1	259.0	3.9
10BJ170A	10BJ170CA	A170	C170	170	1	189.0	209.0	1	275.0	3.7
10BJ180A	10BJ180CA	A180	C180	180	1	201.0	222.0	1	292.0	3.5
10BJ190A	10BJ190CA	A190	C190	190	1	211.0	234.0	1	307.0	3.3
10BJ200A	10BJ200CA	A200	C200	200	1	224.0	247.0	1	324.0	3.1

Ratings and Characteristic Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Figure 1. Peak Pulse Power Rating Curve

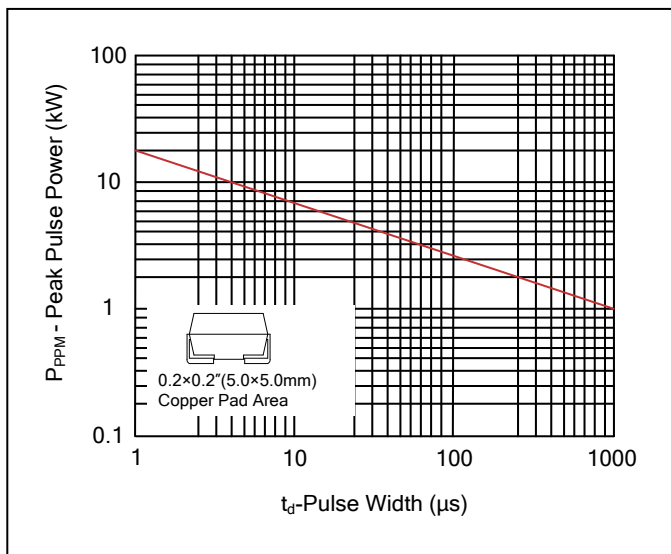


Figure 2. Pulse Derating Curve

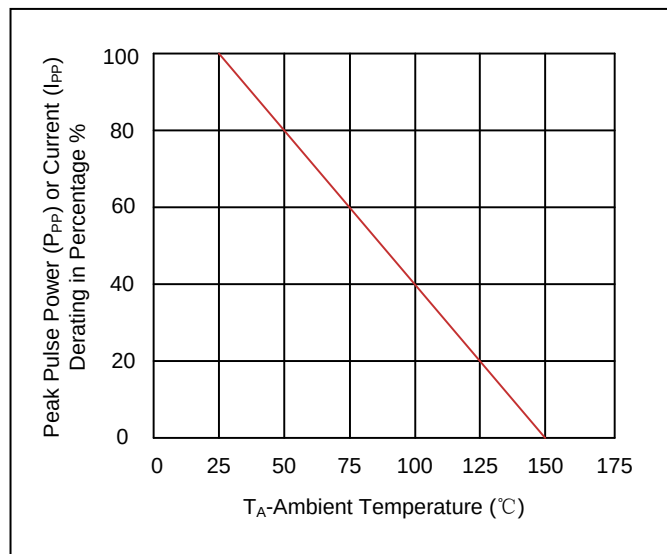


Figure 3. Pulse Waveform

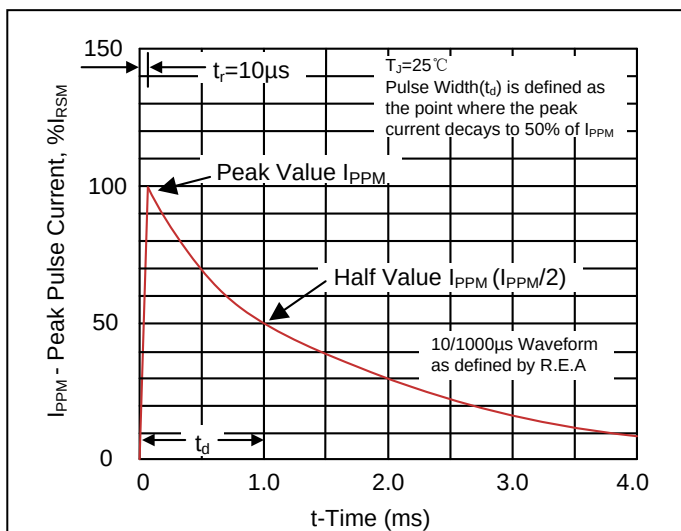


Figure 4. Typical Junction Capacitance

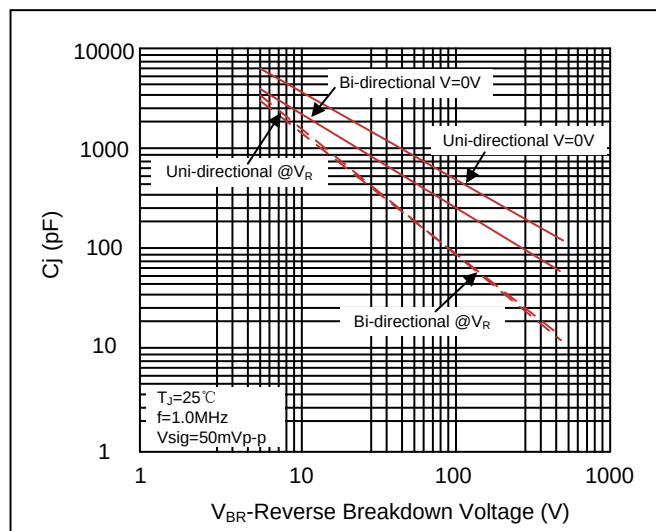


Figure 5. Steady State Power Dissipation Derating

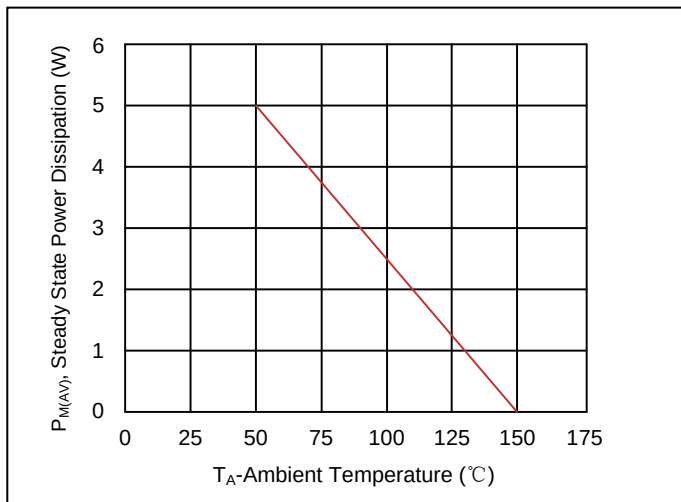
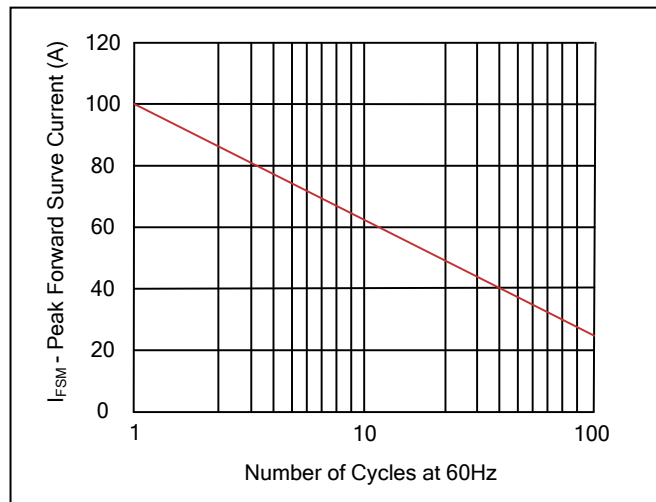


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

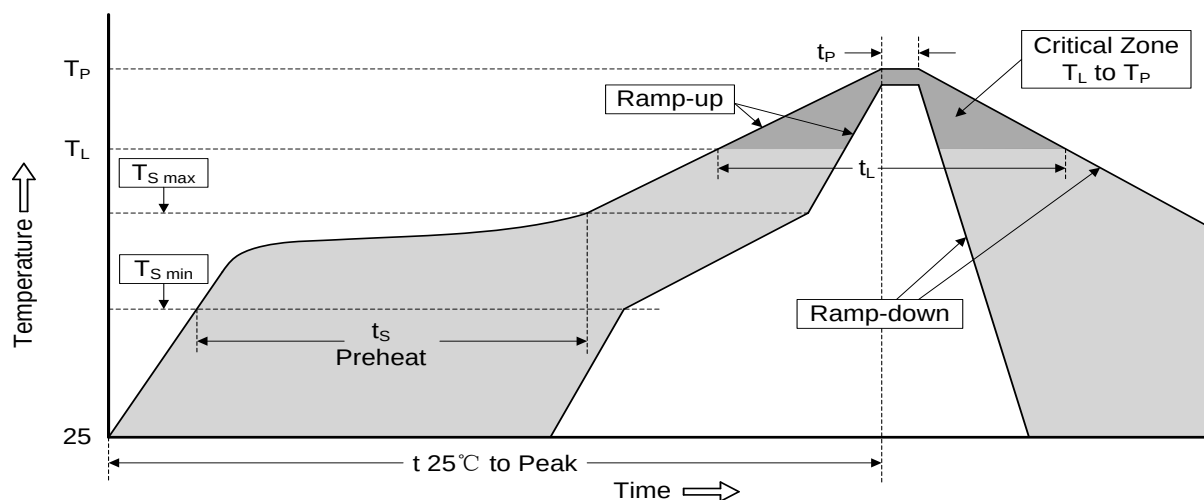




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Recommended Soldering Conditions

Reflow Soldering



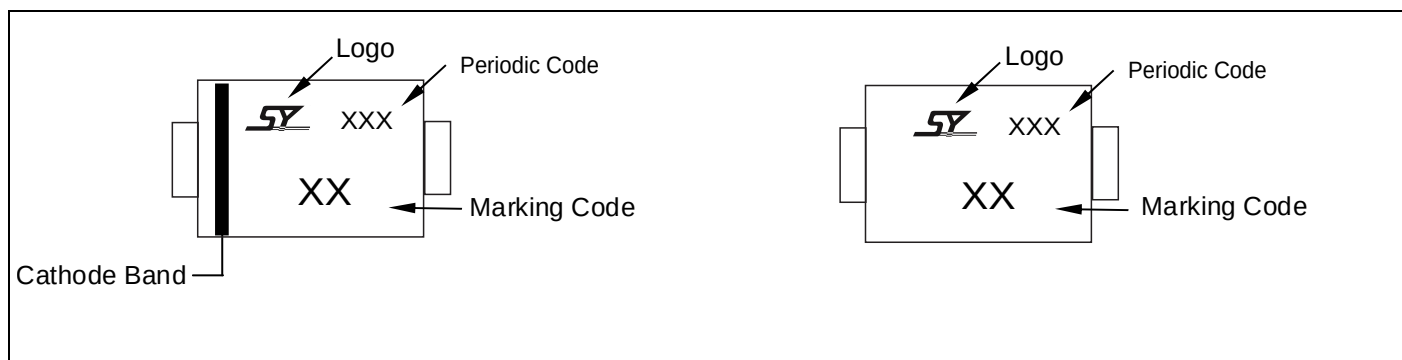
Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat -Temperature Min ($T_{S \min}$) -Temperature Max ($T_{S \max}$) -Time (min to max) (t_s)	150°C 200°C 60-180 seconds
$T_{S \max}$ to T_L -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	217°C 60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

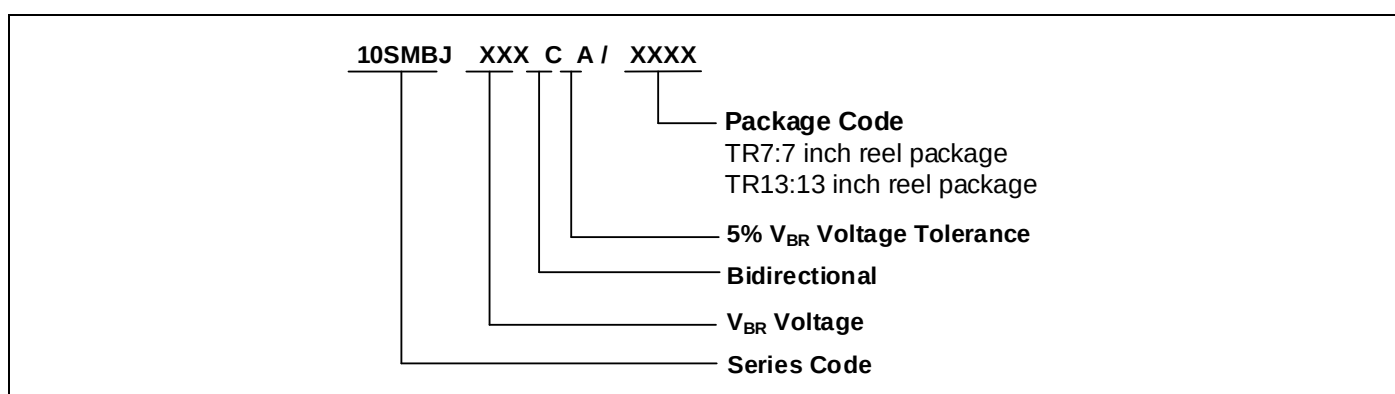


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Marking Code



Part Number Code

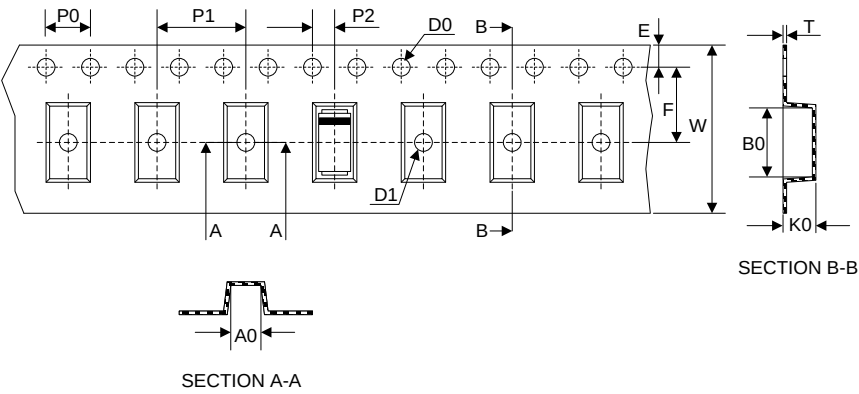
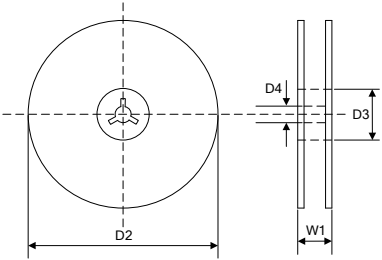
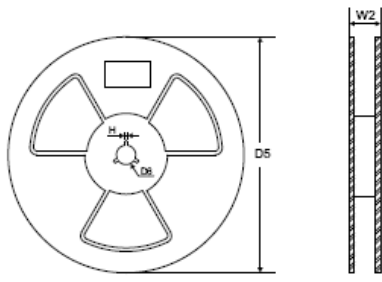


Ordering Code for Different Package

7 inch reel package: Add suffix "/TR7 " at the end of the part number, such as 10SMBJXXXCA/TR7

13 inch reel package: Add suffix "/TR13 " at the end of the part number, such as 10SMBJXXXCA/TR13

Packaging

Tape 	Symbol	Dimension (mm)
	W	12.00±0.20
	P0	4.00±0.10
	P1	8.00±0.10
	P2	2.00±0.10
	D0	Φ1.55±0.10
	D1	Φ1.5±0.10
	E	1.75±0.10
	F	5.50±0.10
	A0	3.86±0.15
	B0	5.65±0.10
	K0	2.75±0.15
	T	0.25±0.05
7" Reel 	D2	Φ178.0±2.0
	D3	Φ50.0Min.
	D4	Φ13.0±0.5
	W1	16.0±2.0
	Quantity: 500PCS	
13" Reel 	D5	Φ330.0±2.0
	D6	Φ13.5±0.5
	H	2.5±1.0
	W2	16.0±2.0
	Quantity: 3000PCS	