Technical Data
Data Sheet N1804 Rev. A

3.0SMI SERIES
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

SMC

Features

- Glass Passivated Die Construction
- 3000W Peak Pulse Power Dissipation
- 5.0V- 170V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O
- This is a Pb − Free Device
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

Circuit Diagram

Mechanical Data

- Case: SMC Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD 750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Weight:0.21 grams(approx.)

Maximum Ratings and Thermal Characteristics@T_A=25°C unless otherwise specified

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000us waveform (NOTE 1, 2, Fig.1)	P_{PPM}	3000	W
Peak Pulse Current of on 10/1000 us waveform (Note 1,Fig 3)	I_{PPM}	SEE TABLE 1	A
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2),(Note 3)	I_{FSM}	300	A
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	15	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	75	°C/W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 150	°C

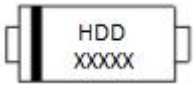
Notes: 1. Non-repetitive current pulse , per Fig. 3 and derated above T_A = 25°C per Fig. 2.
2. Mounted on 8.0mm^2 copper pads to each terminal
3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4pulses per minute maximum.

Ordering Information

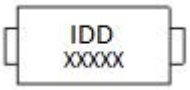
Device	Package	Shipping
3.0SMI5.0 THRU 3.0SMI170CA	SMC (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram



3.0SMI5.0



3.0SMI5.0C

Where XXXXX is YYWWL

HDD/IDD = Marking code
YY = Year
WW = Week
L = Lot Number

Cautions: Molding resin
Epoxy resin UL:94V-0

Technical Data
Data Sheet N1804 Rev. A

RoHS

Electrical Characteristics@T_A=25°C unless otherwise specified

UNI-DIRECTIONAL 3000 WATT SURFACE MOUNT TVS

UNI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR (uA)
3.0SMI5.0	HDD	5	6.4	7.82	10	9.6	312.5	1000
3.0SMI5.0A	HDE	5	6.4	7.07	10	9.2	326	1000
3.0SMI6.0	HDF	6	6.67	8.15	10	11.4	263.2	1000
3.0SMI6.0A	HDG	6	6.67	7.37	10	10.3	291.3	1000
3.0SMI6.5	HDH	6.5	7.22	8.82	10	12.3	243.9	500
3.0SMI6.5A	HDK	6.5	7.22	7.98	10	11.2	267.9	500
3.0SMI7.0	HDL	7	7.78	9.51	10	13.3	225.6	200
3.0SMI7.0A	HDM	7	7.78	8.60	10	12	250	200
3.0SMI7.5	HDN	7.5	8.33	10.18	1	14.3	209.8	100
3.0SMI7.5A	HDP	7.5	8.33	9.21	1	12.9	232.6	100
3.0SMI8.0	HDQ	8	8.99	10.99	1	15	220	50
3.0SMI8.0A	HDR	8	8.99	9.94	1	13.6	220.6	50
3.0SMI8.5	HDS	8.5	9.44	11.54	1	15.9	188.8	25
3.0SMI8.5A	HDT	8.5	9.44	10.43	1	14.4	208.4	25
3.0SMI9.0	HDU	9	10	12.22	1	16.9	177.4	10
3.0SMI9.0A	HDV	9	10	11.05	1	15.4	194.8	10
3.0SMI10	HDW	10	11.1	13.57	1	18.8	159.6	5
3.0SMI10A	HDX	10	11.1	12.27	1	17	176.4	5
3.0SMI11	HDY	11	12.2	14.91	1	20.1	149.2	5
3.0SMI11A	HDZ	11	12.2	13.48	1	18.2	184.8	5
3.0SMI12	HED	12	13.3	16.26	1	22	136.4	5
3.0SMI12A	HEE	12	13.3	14.70	1	19.9	150.6	5
3.0SMI13	HEF	13	14.4	17.60	1	23.8	126	5
3.0SMI13A	HEG	13	14.4	15.92	1	21.5	139.4	5
3.0SMI14	HEH	14	15.6	19.07	1	25.8	116.2	5
3.0SMI14A	HEK	14	15.6	17.24	1	23.2	129.4	5
3.0SMI15	HEL	15	16.7	20.41	1	26.9	111.6	5
3.0SMI15A	HEM	15	16.7	18.46	1	24.4	123	5
3.0SMI16	HEN	16	17.8	21.76	1	28.8	104.2	5
3.0SMI16A	HEP	16	17.8	19.67	1	26	115.4	5
3.0SMI17	HEQ	17	18.9	23.10	1	30.5	98.4	5
3.0SMI17A	HER	17	18.9	20.89	1	27.6	106.6	5
3.0SMI18	HES	18	20	24.44	1	32.2	93.2	5
3.0SMI18A	HET	18	20	22.11	1	29.2	102.8	5
3.0SMI20	HEU	20	22.2	27.13	1	35.8	83.8	5
3.0SMI20A	HEV	20	22.2	24.54	1	32.4	92.6	5
3.0SMI22	HEW	22	24.4	29.82	1	39.4	76.2	5
3.0SMI22A	HEX	22	24.4	26.97	1	35.5	84.4	5
3.0SMI24	HEY	24	26.7	32.63	1	43	69.8	5
3.0SMI24A	HEZ	24	26.7	29.51	1	38.9	77.2	5
3.0SMI26	HFD	26	28.9	35.32	1	46.6	64.4	5
3.0SMI26A	HFE	26	28.9	31.94	1	42.1	71.2	5
3.0SMI28	HFF	28	31.1	38.01	1	50	60	5
3.0SMI28A	HFG	28	31.1	34.37	1	45.4	66	5
3.0SMI30	HFH	30	33.3	40.70	1	53.5	56	5
3.0SMI30A	HFK	30	33.3	36.81	1	48.4	62	5
3.0SMI33	HFL	33	36.7	44.86	1	59	50.4	5
3.0SMI33A	HFM	33	36.7	40.56	1	53.3	56.2	5
3.0SMI36	HFN	36	40	48.89	1	64.3	46.6	5
3.0SMI36A	HFP	36	40	44.21	1	58.1	51.6	5
3.0SMI40	HFQ	40	44.4	54.27	1	71.4	42	5
3.0SMI40A	HFR	40	44.4	49.07	1	64.5	46.4	5
3.0SMI43	HFS	43	47.8	58.42	1	76.6	39.2	5
3.0SMI43A	HFT	43	47.8	52.83	1	69.4	43.2	5
3.0SMI45	HFU	45	50	61.11	1	80.3	37.4	5
3.0SMI45A	HFV	45	50	55.26	1	72.7	41.2	5
3.0SMI48	HFW	48	53.3	65.14	1	85.5	35	5
3.0SMI48A	HFX	48	53.3	58.91	1	77.4	38.8	5
3.0SMI51	HFY	51	56.7	69.30	1	91.1	37	5
3.0SMI51A	HFZ	51	56.7	62.67	1	82.4	36.4	5
3.0SMI54	HGD	54	60	73.33	1	96.3	31.2	5
3.0SMI54A	HGE	54	60	66.32	1	87.1	34.4	5
3.0SMI58	HGF	58	64.4	78.71	1	103	29.2	5
3.0SMI58A	HGG	58	64.4	71.18	1	93.6	32	5
3.0SMI60	HGH	60	66.7	81.52	1	107	28	5
3.0SMI60A	HGK	60	66.7	73.72	1	96.8	31	5
3.0SMI64	HGL	64	71.1	86.90	1	114	26.4	5
3.0SMI64A	HGM	64	71.1	78.58	1	103	29.2	5
3.0SMI70	HGN	70	77.8	95.09	1	125	24	5
3.0SMI70A	HGP	70	77.8	85.99	1	113	26.6	5
3.0SMI75	HGQ	75	83.3	101.81	1	134	22.4	5
3.0SMI75A	HGR	75	83.3	92.07	1	121	24.8	5
3.0SMI78	HGS	78	86.7	105.97	1	139	21.6	5
3.0SMI78A	HGT	78	86.7	95.83	1	126	22.8	5
3.0SMI85	HGU	85	94.4	115.38	1	151	19.8	5
3.0SMI85A	HGV	85	94.4	104.34	1	137	20.8	5
3.0SMI90	HGW	90	100	122.22	1	160	18.8	5
3.0SMI90A	HGX	90	100	110.53	1	146	20.6	5
3.0SMI100	HGY	100	111	135.67	1	179	16.6	5
3.0SMI100A	HGZ	100	111	122.68	1	162	18.6	5
3.0SMI110	HHD	110	122	149.11	1	196	15.4	5
3.0SMI110A	HHE	110	122	134.84	1	177	16.8	5
3.0SMI120	HHF	120	133	162.56	1	214	14	5
3.0SMI120A	HHG	120	133	147.00	1	193	15.6	5
3.0SMI130	HHH	130	144	176.00	1	231	13	5
3.0SMI130A	HHK	130	144	159.16	1	209	14.4	5
3.0SMI150	HHL	150	167	204.11	1	269	11.2	5
3.0SMI150A	HHM	150	167	184.58	1	243	12.4	5
3.0SMI160	HHN	160	178	217.56	1	287	10.4	5
3.0SMI160A	HHP	160	178	196.74	1	259	11.6	5
3.0SMI170	HHQ	170	189	231.00	1	304	9.8	5
3.0SMI170A	HHR	170	189	208.89	1	275	11	5

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BI-DIRECTIONAL 3000 WATT SURFACE MOUNT TVS

BI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR (uA)
3.0SMI5.0C	IDD	5	6.4	7.82	10	9.6	312.5	2000
3.0SMI5.0CA	IDE	5	6.4	7.07	10	9.2	326	2000
3.0SMI6.0C	IDF	6	6.67	8.15	10	11.4	263.2	2000
3.0SMI6.0CA	IDG	6	6.67	7.37	10	10.3	291.3	2000
3.0SMI6.5C	IDH	6.5	7.22	8.82	10	12.3	243.9	1000
3.0SMI6.5CA	IDK	6.5	7.22	7.98	10	11.2	267.9	1000
3.0SMI7.0C	IDL	7	7.78	9.51	10	13.3	225.6	400
3.0SMI7.0CA	IDM	7	7.78	8.60	10	12	250	400
3.0SMI7.5C	IDN	7.5	8.33	10.18	1	14.3	209.8	200
3.0SMI7.5CA	IDP	7.5	8.33	9.21	1	12.9	232.6	200
3.0SMI8.0C	IDQ	8	8.99	10.99	1	15	220	100
3.0SMI8.0CA	IDR	8	8.99	9.94	1	13.6	220.6	100
3.0SMI8.5C	IDS	8.5	9.44	11.54	1	15.9	188.8	50
3.0SMI8.5CA	IDT	8.5	9.44	10.43	1	14.4	208.4	50
3.0SMI9.0C	IDU	9	10	12.22	1	16.9	177.4	20
3.0SMI9.0CA	IDV	9	10	11.05	1	15.4	194.8	20
3.0SMI10C	IDW	10	11.1	13.57	1	18.8	159.6	5
3.0SMI10CA	IDX	10	11.1	12.27	1	17	176.4	5
3.0SMI11C	IDY	11	12.2	14.91	1	20.1	149.2	5
3.0SMI11CA	IDZ	11	12.2	13.48	1	18.2	184.8	5
3.0SMI12C	IED	12	13.3	16.26	1	22	136.4	5
3.0SMI12CA	IEE	12	13.3	14.70	1	19.9	150.6	5
3.0SMI13C	IEF	13	14.4	17.60	1	23.8	126	5
3.0SMI13CA	IEG	13	14.4	15.92	1	21.5	139.4	5
3.0SMI14C	IEH	14	15.6	19.07	1	25.8	116.2	5
3.0SMI14CA	IEK	14	15.6	17.24	1	23.2	129.4	5
3.0SMI15C	IEL	15	16.7	20.41	1	26.9	111.6	5
3.0SMI15CA	IEM	15	16.7	18.46	1	24.4	123	5
3.0SMI16C	IEN	16	17.8	21.76	1	28.8	104.2	5
3.0SMI16CA	IEP	16	17.8	19.67	1	26	115.4	5
3.0SMI17C	IEQ	17	18.9	23.10	1	30.5	98.4	5
3.0SMI17CA	IER	17	18.9	20.89	1	27.6	106.6	5
3.0SMI18C	IES	18	20	24.44	1	32.2	93.2	5
3.0SMI18CA	IET	18	20	22.11	1	29.2	102.8	5
3.0SMI20C	IEU	20	22.2	27.13	1	35.8	83.8	5
3.0SMI20CA	IEV	20	22.2	24.54	1	32.4	92.6	5
3.0SMI22C	IEW	22	24.4	29.82	1	39.4	76.2	5
3.0SMI22CA	IEX	22	24.4	26.97	1	35.5	84.4	5
3.0SMI24C	IEY	24	26.7	32.63	1	43	69.8	5
3.0SMI24CA	IEZ	24	26.7	29.51	1	38.9	77.2	5
3.0SMI26C	IFD	26	28.9	35.32	1	46.6	64.4	5
3.0SMI26CA	IFE	26	28.9	31.94	1	42.1	71.2	5
3.0SMI28C	IFF	28	31.1	38.01	1	50	60	5
3.0SMI28CA	IFG	28	31.1	34.37	1	45.4	66	5
3.0SMI30C	IFH	30	33.3	40.70	1	53.5	56	5
3.0SMI30CA	IFK	30	33.3	36.81	1	48.4	62	5
3.0SMI33C	IFL	33	36.7	44.86	1	59	50.4	5
3.0SMI33CA	IFM	33	36.7	40.56	1	53.3	56.2	5
3.0SMI36C	IFN	36	40	48.89	1	64.3	46.6	5
3.0SMI36CA	IFP	36	40	44.21	1	58.1	51.6	5
3.0SMI40C	IFQ	40	44.4	54.27	1	71.4	42	5
3.0SMI40CA	IFR	40	44.4	49.07	1	64.5	46.4	5
3.0SMI43C	IFS	43	47.8	58.42	1	76.6	39.2	5
3.0SMI43CA	IFT	43	47.8	52.83	1	69.4	43.2	5
3.0SMI45C	IFU	45	50	61.11	1	80.3	37.4	5
3.0SMI45CA	IFV	45	50	55.26	1	72.7	41.2	5
3.0SMI48C	IFW	48	53.3	65.14	1	85.5	35	5
3.0SMI48CA	IFX	48	53.3	58.91	1	77.4	38.8	5
3.0SMI51C	IFY	51	56.7	69.30	1	91.1	37	5
3.0SMI51CA	IFZ	51	56.7	62.67	1	82.4	36.4	5
3.0SMI54C	IGD	54	60	73.33	1	96.3	31.2	5
3.0SMI54CA	IGE	54	60	66.32	1	87.1	34.4	5
3.0SMI58C	IGF	58	64.4	78.71	1	103	29.2	5
3.0SMI58CA	IGG	58	64.4	71.18	1	93.6	32	5
3.0SMI60C	IGH	60	66.7	81.52	1	107	28	5
3.0SMI60CA	IGK	60	66.7	73.72	1	96.8	31	5
3.0SMI64C	IGL	64	71.1	86.90	1	114	26.4	5
3.0SMI64CA	IGM	64	71.1	78.58	1	103	29.2	5
3.0SMI70C	IGN	70	77.8	95.09	1	125	24	5
3.0SMI70CA	IGP	70	77.8	85.99	1	113	26.6	5
3.0SMI75C	IGQ	75	83.3	101.81	1	134	22.4	5
3.0SMI75CA	IGR	75	83.3	92.07	1	121	24.8	5
3.0SMI78C	IGS	78	86.7	105.97	1	139	21.6	5
3.0SMI78CA	IGT	78	86.7	95.83	1	126	22.8	5
3.0SMI85C	IGU	85	94.4	115.38	1	151	19.8	5
3.0SMI85CA	IGV	85	94.4	104.34	1	137	20.8	5
3.0SMI90C	IGW	90	100	122.22	1	160	18.8	5
3.0SMI90CA	IGX	90	100	110.53	1	146	20.6	5
3.0SMI100C	IGY	100	111	135.67	1	179	16.6	5
3.0SMI100CA	IGZ	100	111	122.68	1	162	18.6	5
3.0SMI110C	IHD	110	122	149.11	1	196	15.4	5
3.0SMI110CA	IHE	110	122	134.84	1	177	16.8	5
3.0SMI120C	IHF	120	133	162.56	1	214	14	5
3.0SMI120CA	IHG	120	133	147.00	1	193	15.6	5
3.0SMI130C	IHH	130	144	176.00	1	231	13	5
3.0SMI130CA	IHK	130	144	159.16	1	209	14.4	5
3.0SMI150C	IHL	150	167	204.11	1	269	11.2	5
3.0SMI150CA	IHM	150	167	184.58	1	243	12.4	5
3.0SMI160C	IHN	160	178	217.56	1	287	10.4	5
3.0SMI160CA	IHP	160	178	196.74	1	259	11.6	5
3.0SMI170C	IHQ	170	189	231.00	1	304	9.8	5
3.0SMI170CA	IHR	170	189	208.89	1	275	11	5

"C" Suffix Designates Bi-directional Devices
"A" Suffix Designates 5% Tolerance Devices
No Suffix Designates 10% Tolerance Devices

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Ratings and Characteristics Curves

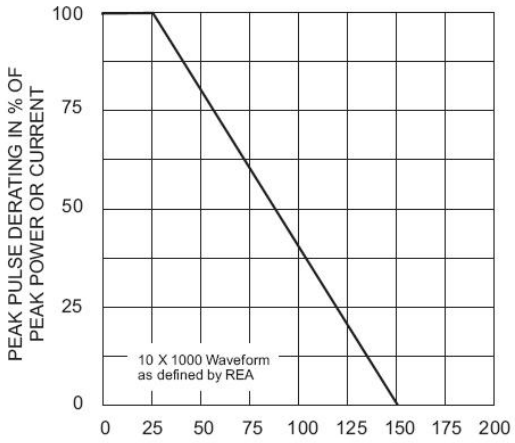

Fig. 1 Pulse Derating Curve

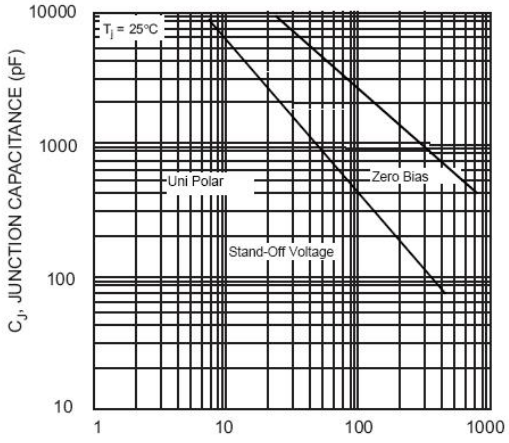

Fig. 2 Typical Junction Capacitance

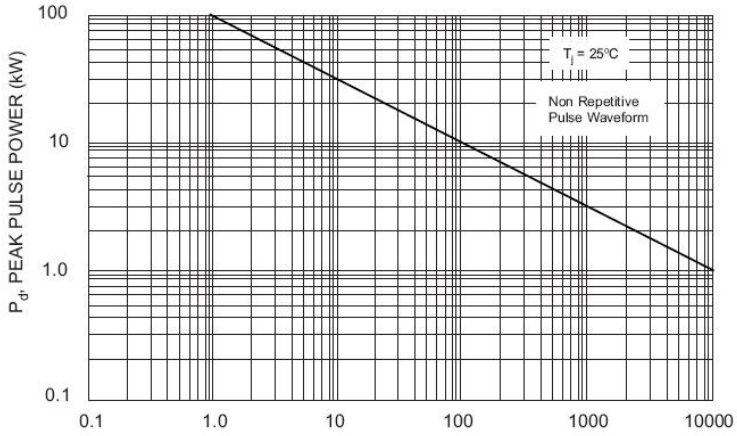

Fig. 3 Pulse Rating Curve

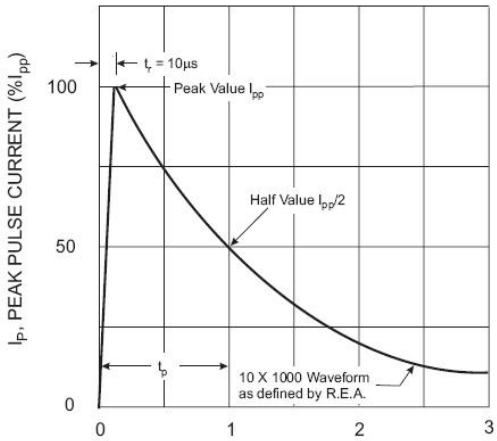

Fig. 4 Pulse Waveform

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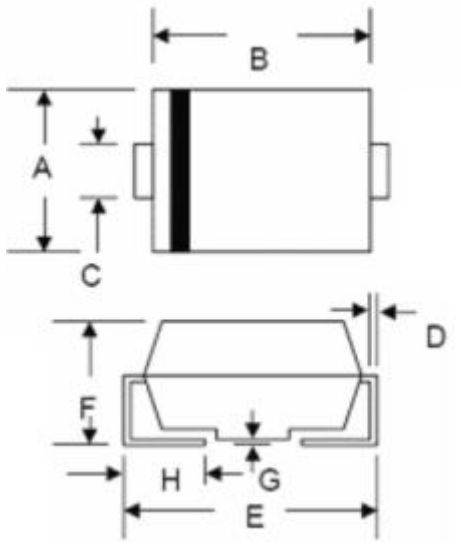
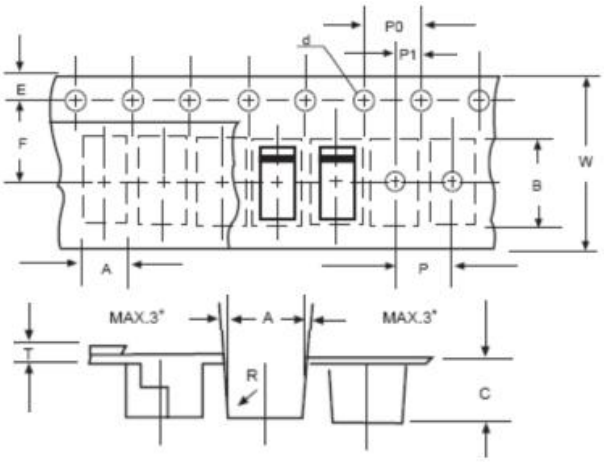
Mechanical Dimensions SMC



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	5.59	6.22	0.220	0.245
B	6.60	7.11	0.260	0.280
C	2.75	3.25	0.108	0.128
D	0.152	0.305	0.006	0.012
E	7.75	8.25	0.305	0.325
F	2.00	2.95	0.079	0.116
G	0.051	0.203	0.002	0.008
H	0.76	1.60	0.030	0.063

Carrier Tape Specification SMC



SYMBOL	Millimeters	
	Min.	Max.
A	5.90	6.10
B	8.20	8.40
C	2.40	2.60
d	1.40	1.60
E	1.40	1.60
F	7.60	7.70
P	7.90	8.10
P0	3.90	4.10
P1	3.90	4.10
T	-	0.600
W	15.80	16.20

Technical Data
Data Sheet N1804 Rev. A

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