Type SM Series

Key Features

Low Profile Design

Available on Tape

Very Wide Value Range

Ideal for Power Circuitry

Available in 4 ratings up to 7 Watts

Flameproof Coating UL94V0

TE Connectivity (TE) introduces a surface mount power resistor suited to meet today's circuit design needs. Each size offers low profile case design with flexible tinned copper terminations for reliable solder joints. All styles utilize a fully welded construction technique, unlike other designs that rely solely on tinned termination connections. These features allow the SM Series to withstand the higher temperatures associated with reflow, vapour phase, or infrared (IR) manufacturing processes without degradation. Now also available at 7W power rating.

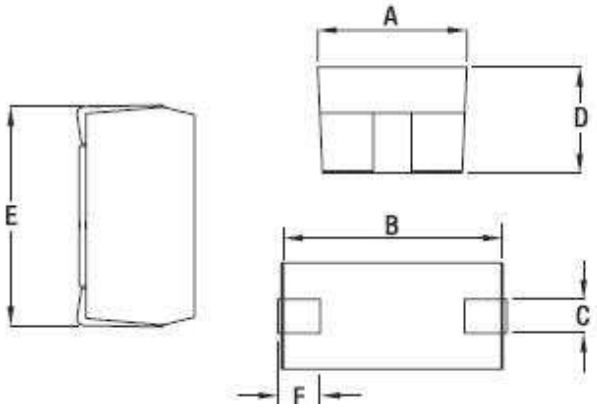
Characteristics – Electrical

	SMW – Wire	SMF – Metal Film
Values SM_2:	R10 – 200R	201R – 2M
Values SM_3:	R10 – 300R	301R – 2M
Values SM_5:	R10 – 500R	501R – 2M
Values SM_7:	R10 – 1K0	1K1 – 2M
Value Grid:	E24	
Resistance Tolerance:	**1% or 5%**	
Power Rating @ 20°C SM_2:	2.0 Watts	
Power Rating @ 20°C SM_3:	3.0 Watts	
Power Rating @ 20°C SM_5:	5.0 Watts	
Power Rating @ 20°C SM_7:	7.0 Watts	
Derating:	See Curve Below	
Max Operating Voltage SM_2:	300 Volts	
Max Operating Voltage SM_3:	500 Volts	
Max Operating Voltage SM_5:	500 Volts	
Max Operating Voltage SM_7:	750 Volts	
Operating Temperature Range	-55 ~ 200°C	

Environmental Characteristics

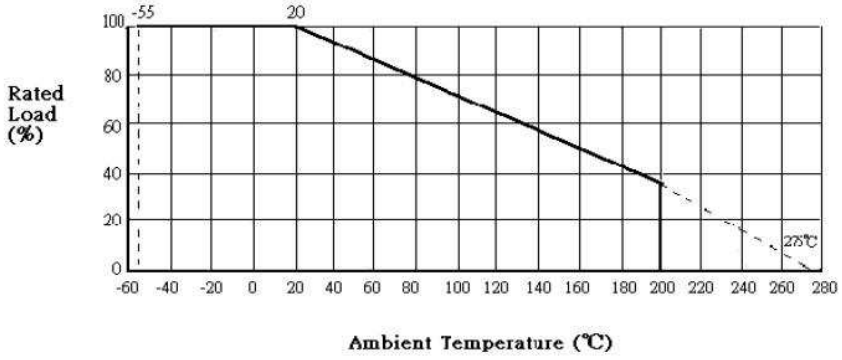
Test	Condition	SM (Wire)	SM (Metal Film)
Temperature Coefficient of Resistance:	-55°C – +200°C	± 200ppm /°C	± 100ppm /°C
Temperature Cycle	Step / Temp.°C / Time m 1 / -55±3 / 30 2 / Room Temp. / 2~3 3 / 200±3 / 30 4 / Room Temp / 2~3	Resistance change Rate within ±1%	
Short Time Overload:	5 times of rated wattage for 5 sec.	± 1%	± 0.5%
Rated Load:	Rated voltage for 30 minutes	± 3%	± 1%
Insulation Resistance:	500VDC	10,000 MΩ	10,000 MΩ
Load Life:	70°C 1.5 hrs on 0.5 hrs off for 1000 hrs	± 2% (7W ±5%)	± 1% (7W ±5%)
Humidity Load Life:	40°C ±2°C @ 90-95% RH 500 hrs 1.5 hrs on 0.5 hrs off	± 2% (7W ±5%)	± 1% (7W ±5%)
Voltage Withstand:	500VAC for 60 seconds No Physical damage	No Physical damage	
Solderability:	235°C ±5°C for 2 seconds	95% coverage	
Resistance to Soldering Heat:	270°C ±5°C for 10 ±1seconds	Resistance value change within ± 1%	

Dimensions

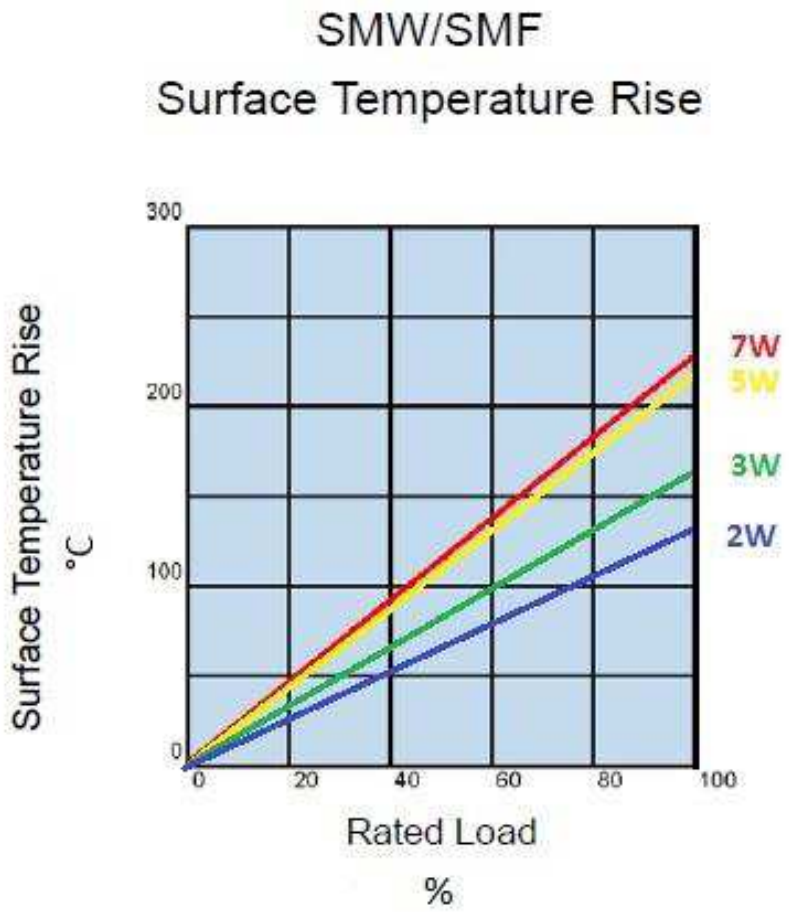


	A±0.3	B±0.3	C±0.3	D±0.3	E Max.	F±0.3	Reel Qty
SM 2W	4.0	6.7	1.4	3.55	7.9	1.5	2000
SM 3W	5.5	10.5	1.7	5.0	12.0	2.3	1000
SM 5W	7.3	13.5	1.7	6.8	17.0	2.5	1000
SM 7W	9.5	23.0	5.0	9.6	24.5	4.5	300

Derating Curve

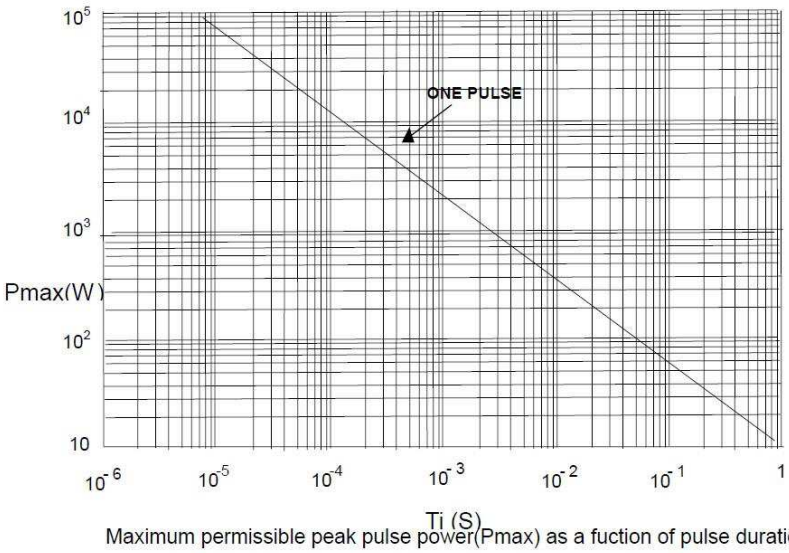


Surface Temperature rise



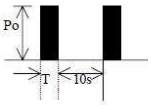
SM Series Pulse Characteristics

SMW 2W

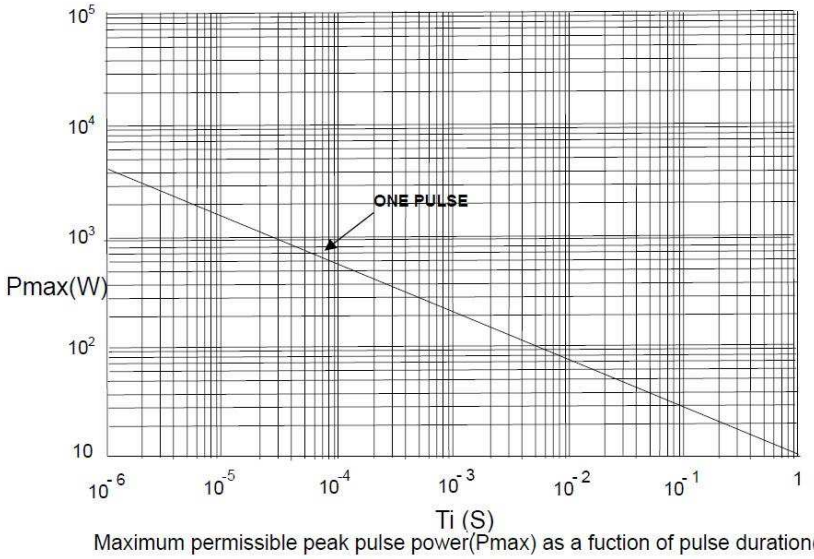


Maximum permissible peak pulse power(Pmax) as a fuction of pulse duration(Ti)

Condition test: Resistance change ≦ ±5% with pulse 1000 cycles as like the figure.(Reference Only)
1. Added power and added voltage are within the lower teritory of this graph.
2. Added in normal temperature and humidity.



SMF 2W



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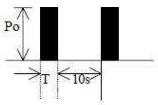
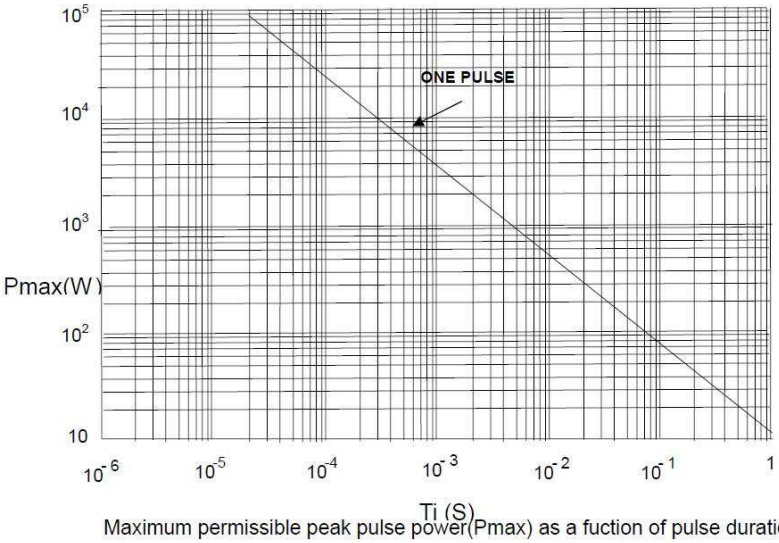


SMW 3W



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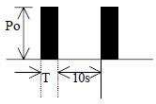

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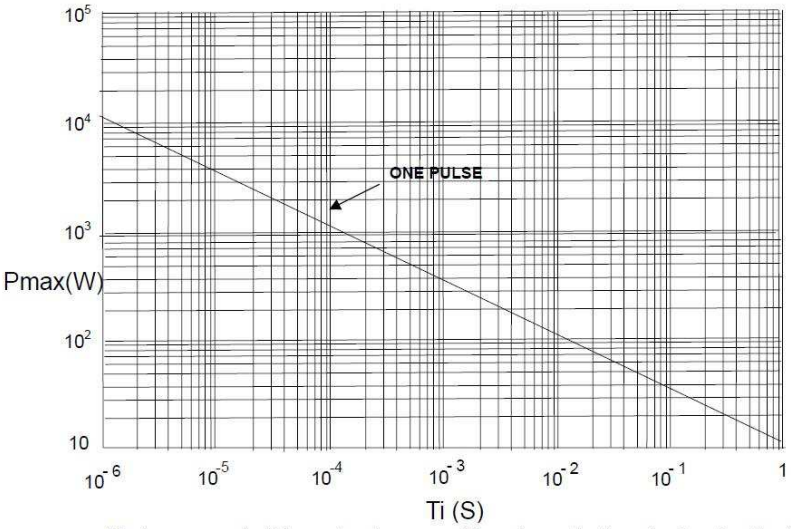

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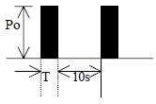
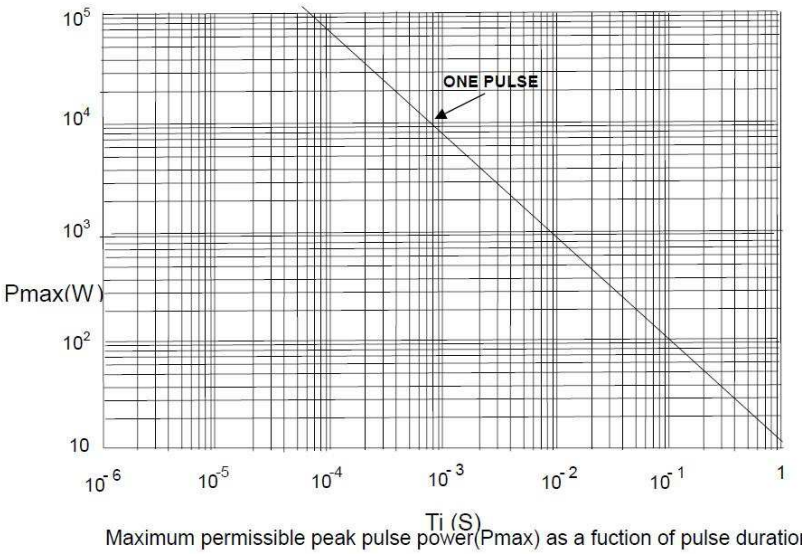


SMW 5W



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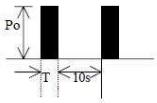
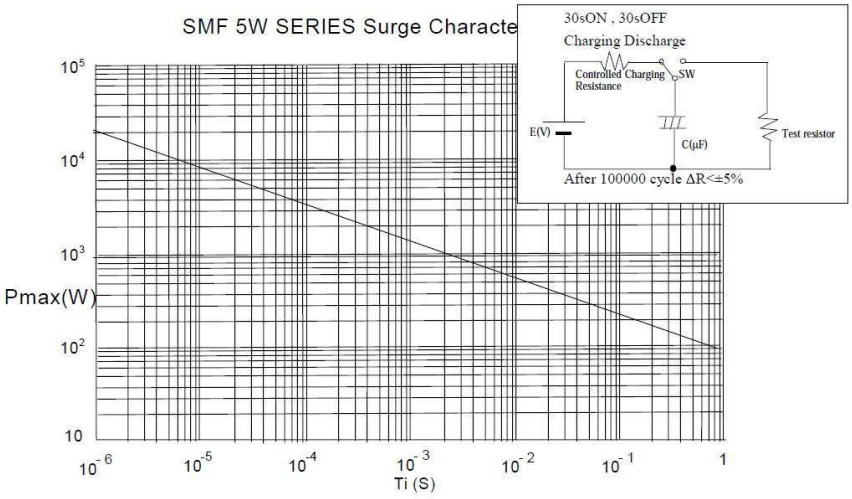
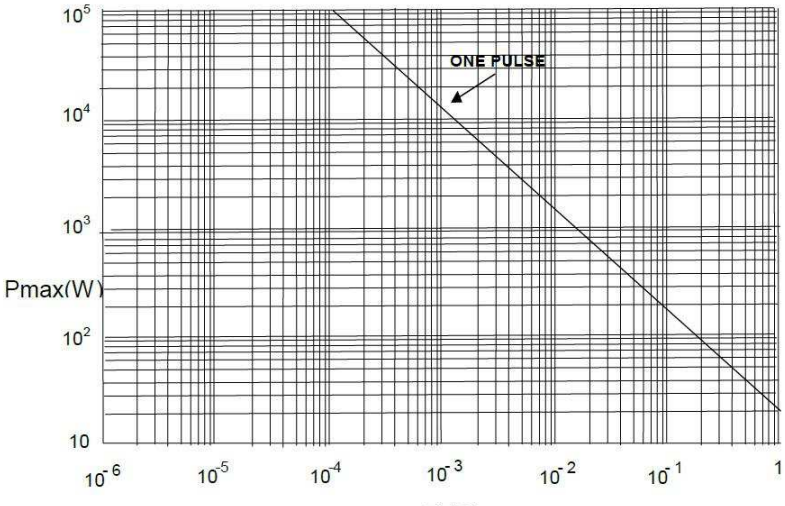


SMF 5W



Maximum permissible peak pulse power(Pmax) as a fuction of pulse duration(Ti)

SMW 7W



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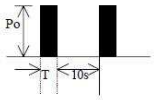
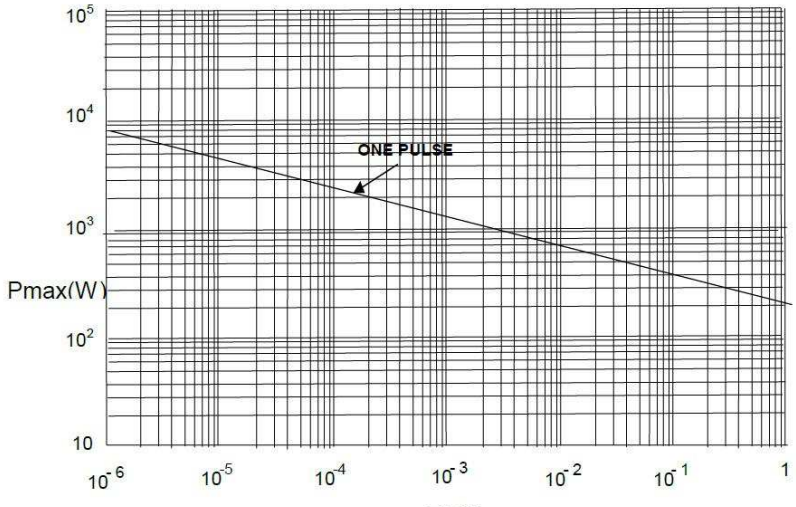


SMF 7W



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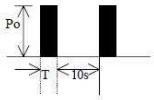
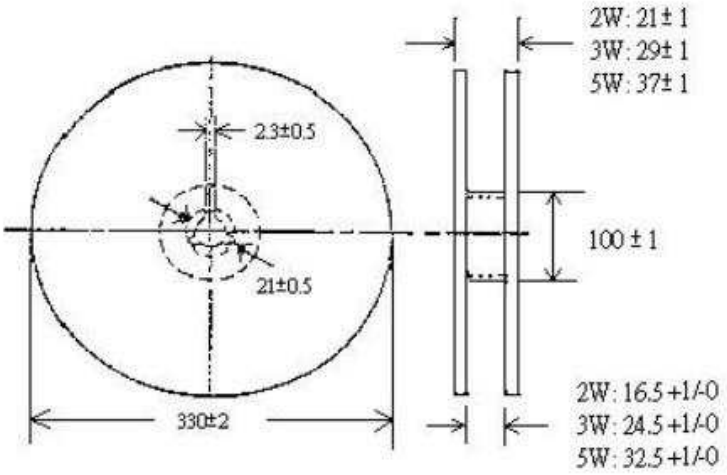


Marking

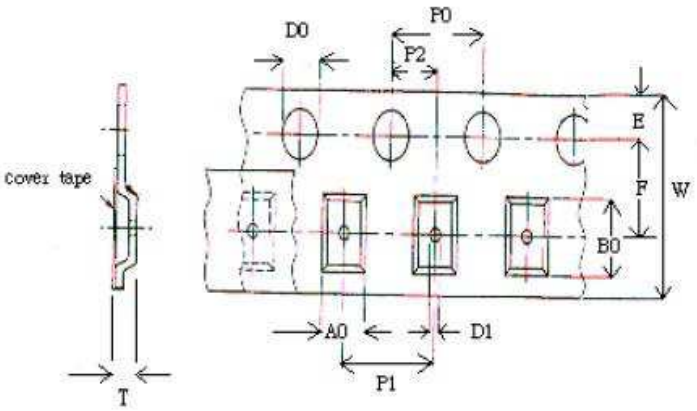
Packaging

SM 2W – 5W

Reel



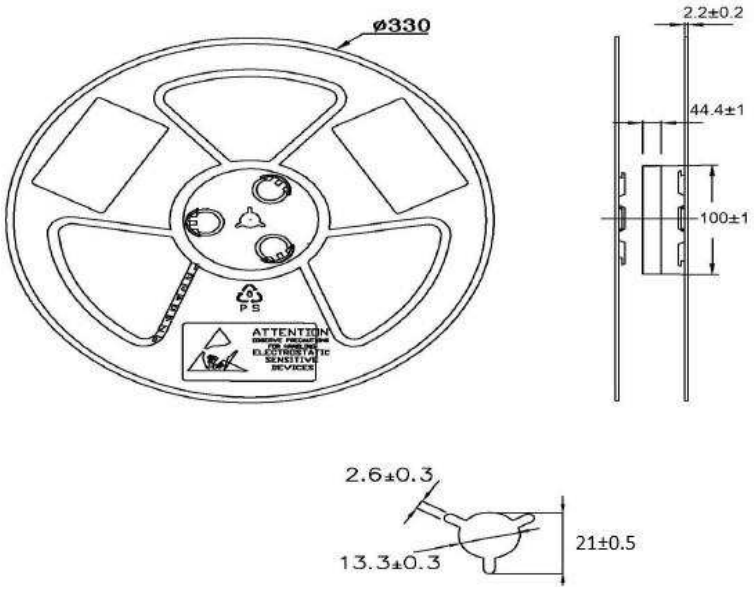
Tape



Rated Power	B0 ± 0.2	A0 ± 0.2	P1 ± 0.1	P2 ± 0.1	P0 ± 0.1	D0 ± 0.1	E ± 0.1	F ± 0.1	W ± 0.3	D1 ± 0.1	T ± 0.1	pcs/reel
2W	8	4.3	8	2	4	1.5	1.75	7.5	16	1.5	4.15	2000
3W	11.8	5.8	12	2	4	1.5	1.75	11.5	24	1.5	5.8	1000
5W	17.5	7.8	16	2	4	1.5	1.75	14.2	32	1.5	7.5	500

SM 7W

Reel



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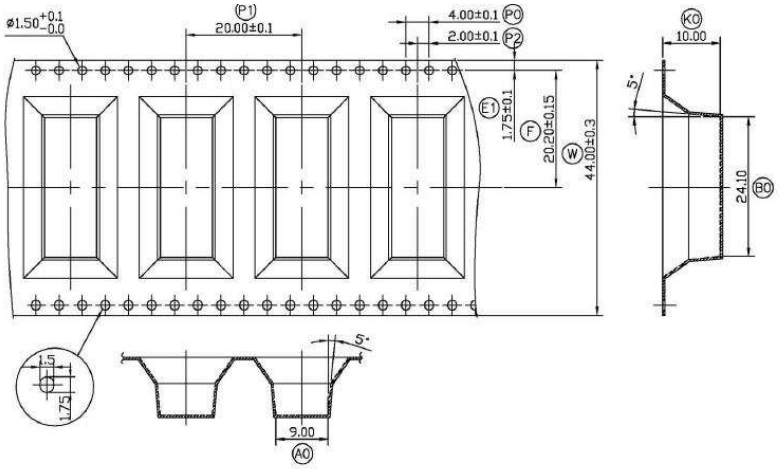

How To Order

SMF	3	10K	F	T
Common Part	**Case size**	**Resistance value**	**Tolerance**	**Pack Style**
SMW - Wirewound SMF - Metal Film	2 - 2 Watts 3 - 3 Watts 5 - 5 Watts 7 - 7 Watts	0.1 ohm (100 milli ohms) - R10 1 ohm -1R0 100 ohm -100R 1K ohm (1000 ohms) -1K0 100K ohm (100,000 ohms) - 100K	J – ±5% F – ±1%	T – Tape & Reel

Dimensions in millimetres unless otherwise specified

Dimensions Shown for reference purposes only. Specifications subject to change

For Email, phone or live chat, go to: www.te.com/help

Mouser Electronics

Authorized Distributor

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TE Connectivity:

SMF7100KJT SMF710KJT SMF7110KJT SMF711KJT SMF7120KJT SMF712KJT SMW7R82JT SMW7R91JT SMW7R47JT SMW7R51JT SMW7R56JT SMW7R62JT SMW7R68JT SMW7R75JT SMW7R27JT SMW7R30JT SMW7R33JT SMW7R36JT SMW7R39JT SMW7R43JT SMW7R15JT SMW7R16JT SMW7R18JT SMW7R20JT SMW7R22JT SMW7R24JT SMW791RJT SMW79R1JT SMW7R10JT SMW7R11JT SMW7R12JT SMW7R13JT SMW775RJT SMW77R5JT SMW7820RJT SMW782RJT SMW78R2JT SMW7910RJT SMW762RJT SMW7680RJT SMW768RJT SMW76R2JT SMW76R8JT SMW7750RJT SMW751RJT SMW7560RJT SMW756RJT SMW75R1JT SMW75R6JT SMW7620RJT SMW743RJT SMW7470RJT SMW747RJT SMW74R3JT SMW74R7JT SMW7510RJT SMW739RJT SMW73R0JT SMW73R3JT SMW73R6JT SMW73R9JT SMW7430RJT SMW730RJT SMW7330RJT SMW733RJT SMW7360RJT SMW736RJT SMW7390RJT SMW727RJT SMW72R0JT SMW72R2JT SMW72R4JT SMW72R7JT SMW7300RJT SMW720RJT SMW7220RJT SMW722RJT SMW7240RJT SMW724RJT SMW7270RJT SMW71R2JT SMW71R3JT SMW71R5JT SMW71R6JT SMW71R8JT SMW7200RJT SMW716RJT SMW7180RJT SMW718RJT SMW71K0JT SMW71R0JT SMW71R1JT SMW712RJT SMW7130RJT SMW713RJT SMW7150RJT SMW715RJT SMW7160RJT SMF79K1JT SMW7100RJT