

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

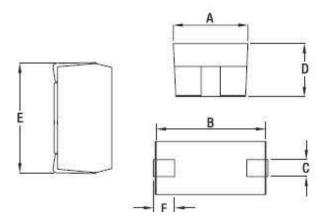
	SMW – Wire	SMF – Metal Film		
Values SM_2:	R10 – 200R 201R – 2M			
Values SM_3:	R10 – 300R	301R – 2M		
Values SM_5:	R10 – 500R	501R – 2M		
Values SM_7:	R10 – 1K0	1K1 – 2M		
Value Grid:	E	24		
Resistance Tolerance:	1% or 5%			
Power Rating @ 20°C SM_2:	2.0 Watts			
Power Rating @ 20°C SM_3:	3.0 Watts			
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	Con	dition		SM (Wire)	SM (Metal Film)				
Temperature									
Coefficient of	-55°	C – +20	0°C			± 200ppm /°C	± 100ppm /°C		
Resistance:									
			1						
		Step	Temp.°C	Time					
				m					
Temperature Cycle		1	-55±3	30		Resistance char	nge Rate within		
Temperature Cycle		2	Room Temp.	2~3		±1	.%		
		3	200±3	30					
		4	Room Temp	2~3					
			•						
Short Time Overload:	5 tin	nes of r	ated wattage fo		± 1%	± 0.5%			
Rated Load:	Rated voltage for 30 minutes					± 3%	± 1%		
Insulation	500	500VDC				10,000 ΜΩ	10,000 ΜΩ		
Resistance:	300700					10,000 10122	10,000 10122		
Load Life:	70°C 1.5 hrs on 0.5 hrs off for 1000 hrs					± 2%	± 1%		
						(7W ±5%)	(7W ±5%)		
Humidity Load Life:	40°C ±2°C @ 90-95% RH 500 hrs 1.5 hrs					± 2% (7W	± 1% (7W		
	on 0.5 hrs off					±5%)	±5%)		
Voltage Withstand:	500VAC for 60 seconds No Physical					No Physical days as			
	damage					No Physical damage			
Solderability:	235°C ±5°C for 2 seconds					95% coverage			
Resistance to	27000 1500 (40 14					Resistance value change within			
Soldering Heat:	270°C ±5°C for 10 ±1seconds					± 1%			

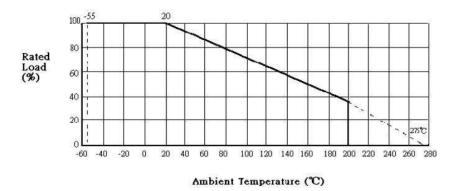
Dimensions



	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

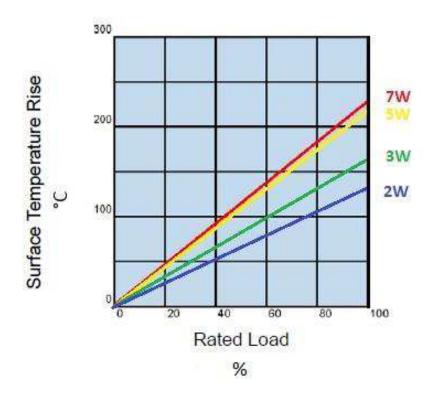


Derating Curve



Surface Temperature rise

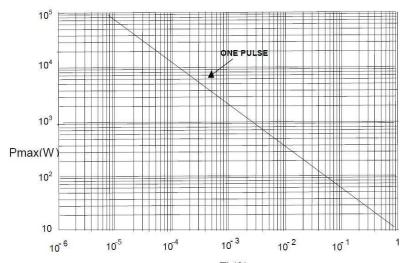
SMW/SMF Surface Temperature Rise





SM Series Pulse Characteristics

SMW 2W



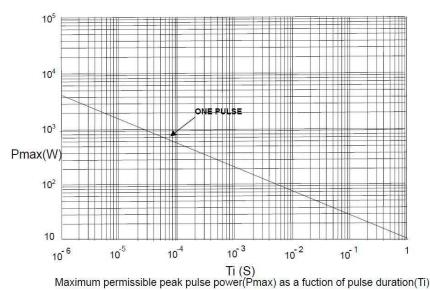
Ti (S)
Maximum permissible peak pulse power(Pmax) as a fuction of pulse duration(Ti)

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



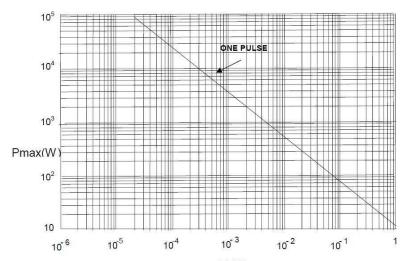
 $\label{eq:condition test:} \ \ \text{Resistance change} \ \leqq \pm \% \ \text{with pulse 1000 cycles as like the figure.} \\ (\text{Reference Only})$

- 1. Added power and added voltage are within the lower teritory of this graph.
- 2. Added in normal temperature and humidity.





SMW 3W



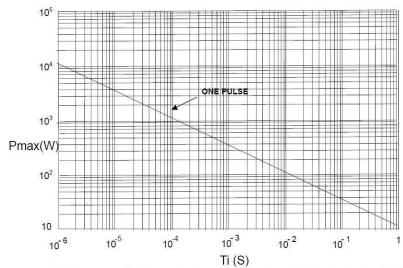
Ti (S)
Maximum permissible peak pulse power(Pmax) as a fuction of pulse duration(Ti)

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 3W



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

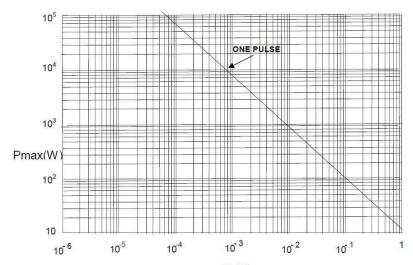
Condition test: Resistance change $\leq \pm \%$ with pulse 1000 cycles as like the figure.(Reference Only)

- 1. Added power and added voltage are within the lower teritory of this graph.
- 2. Added in normal temperature and humidity.





SMW 5W

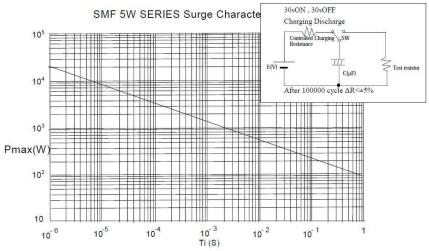


Condition test: Resistance change ≤±% with pulse 1000 cycles as like the figure.(Reference Only)

- 1. Added power and added voltage are within the lower teritory of this graph.
- 2. Added in normal temperature and humidity.



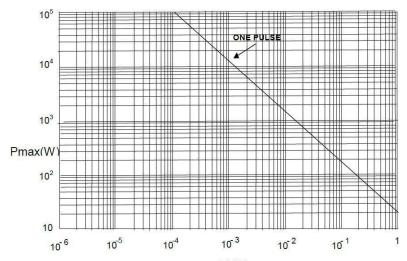
SMF 5W



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



SMW 7W



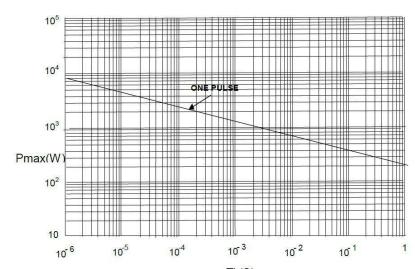
Ti (S)
Maximum permissible peak pulse power(Pmax) as a fuction of pulse duration(Ti)

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 7W



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.





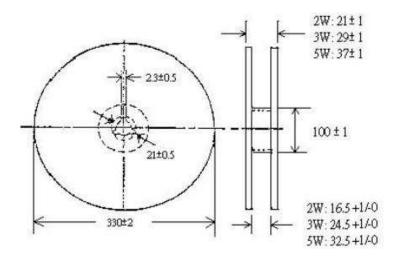
Marking



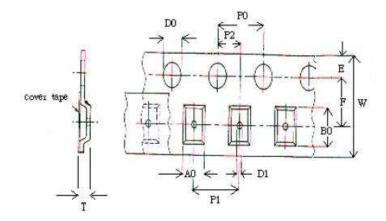
Packaging

SM 2W - 5W

Reel



Tape



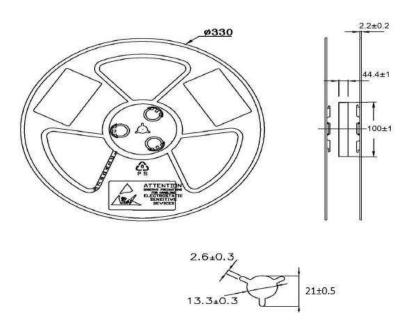
Rated	B0 ±	Α0	P1	P2	P0	D0	Ε±	F±	W ±	D1	Τ±	pcs/reel
Power	0.2	±	±	±	±	±	0.1	0.1	0.3	±	0.1	
		0.2	0.1	0.1	0.1	0.1				0.1		
2W	8	4.3	8	2	4	1.5	1.75	7.5	16	1.5	4.15	2000
3W	11.8	5.8	12	2	4	1.5	1.75	11.5	24	1.5	5.8	1000
5W	17.5	7.8	16	2	4	1.5	1.75	14.2	32	1.5	7.5	500



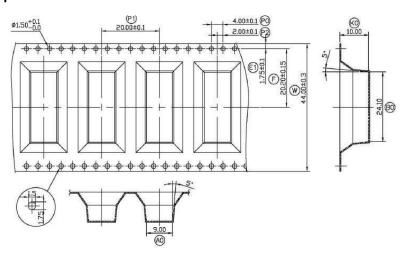
SM 7W

Reel

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Tape



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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

TE Connectivity: SMF21M0JT