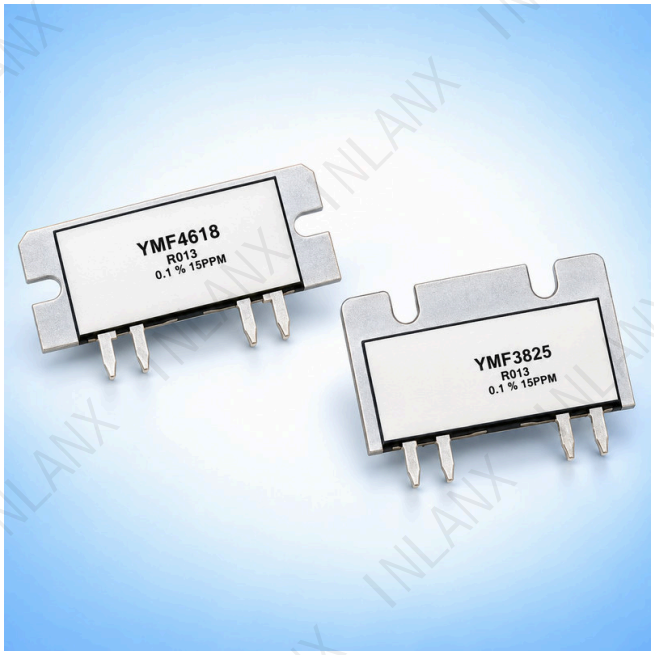
YMF3825 / YMF4618 High-Power Precision Resistors

Features

- Rated power 10W; ultra-low TCR ±5ppm/°C
- Precision down to 0.1%; 4-terminal connection
- Standard lead form; easy to install
- Inductance <5nH (1MHz); RoHS compliant

Applications

Power modules; frequency converters; switch-mode power supplies.



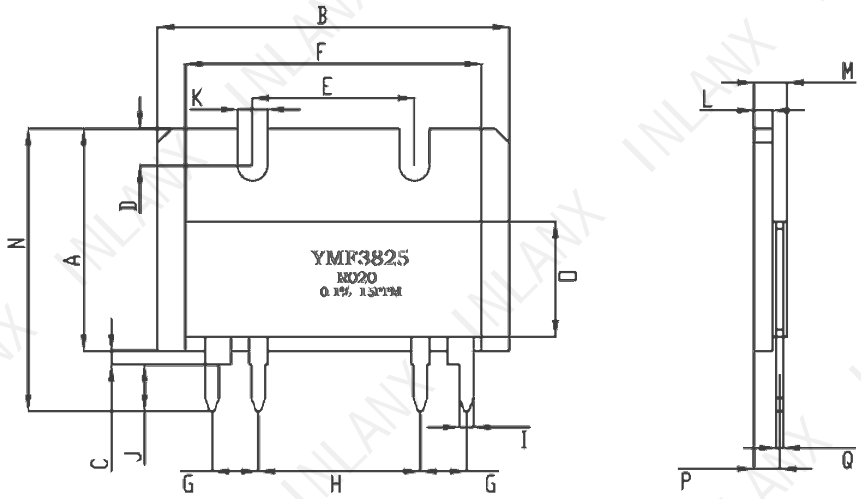
Standard Electrical Specifications

Size	P70°C (W)	R (mΩ)	Tolerance	TCR (ppm/°C)	Material	Temp. (°C)
3825 4618	10	0.5~5	±1% ±2% ±5%	C:±5 L:±10 M:±15 P:±20 R:±30	Karma	-65℃~170℃
3825 4618	10	6~10	±0.5% ±1% ±2% ±5%	C:±5 L:±10 M:±15 P:±20 R:±30	Karma	-65℃~170℃
3825 4618	10	11~50 *51~200	±0.1% ±0.5% ±1% ±2% ±5%	C:±5 L:±10 M:±15 P:±20 R:±30	Karma	-65℃~170℃

TCR test range: 20°C~120°C. Overload for resistance ranges marked *: 2.5× rated power for 10s.

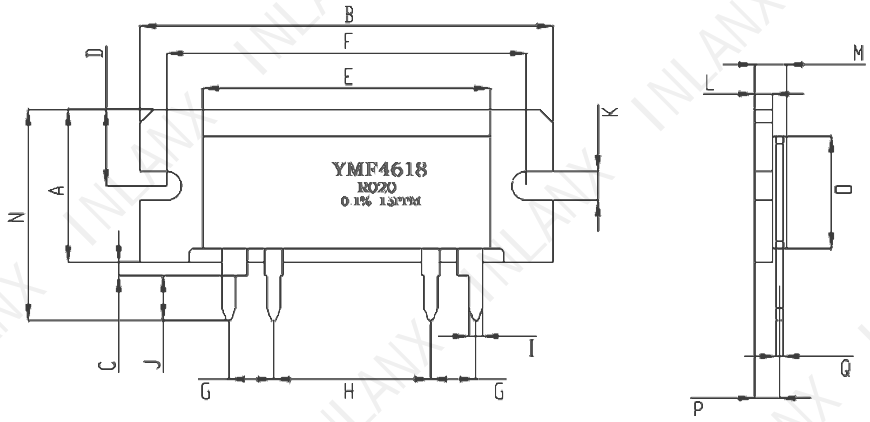
The source uses R for 30ppm in the electrical table and Q in the ordering information; both are retained in their respective contexts.

YMF3825 Outline Dimensions • mm



Callout and tolerance	Dimension (mm)
A ± 0.5	24
B ± 0.5	38
C + 0.5	1.5
D ± 0.2	4
E ± 0.2	17.5
F ± 0.3	32
G ± 0.2	5
H ± 0.1	17.5
I ± 0.2	1.5
J ± 0.5	5
K ± 0.2	3.2
L ± 0.2	2
M ± 0.6	3.6
N ± 0.5	30.5
O ± 0.2	12.5
P ± 0.2	2.8
Q ± 0.1	0.8

YMF4618 Outline Dimensions • mm



Callout and tolerance	Dimension (mm)
A ± 0.5	17
B ± 0.5	46
C + 0.5	1.5
D ± 0.2	8.5
E ± 0.3	32
F ± 0.2	40
G ± 0.2	5
H ± 0.1	17.5
I ± 0.2	1.5
J ± 0.5	5
K ± 0.2	3.2
L ± 0.2	2
M ± 0.6	3.6
N ± 0.5	23.5
O ± 0.2	12.5
P ± 0.2	2.8
Q ± 0.1	0.8

Packaging and Storage

YMF3825: 15 pieces per tube; YMF4618: 12 pieces per tube.

Assembly Instructions

Maximum allowed torque for M3 screws: 0.9N·m.

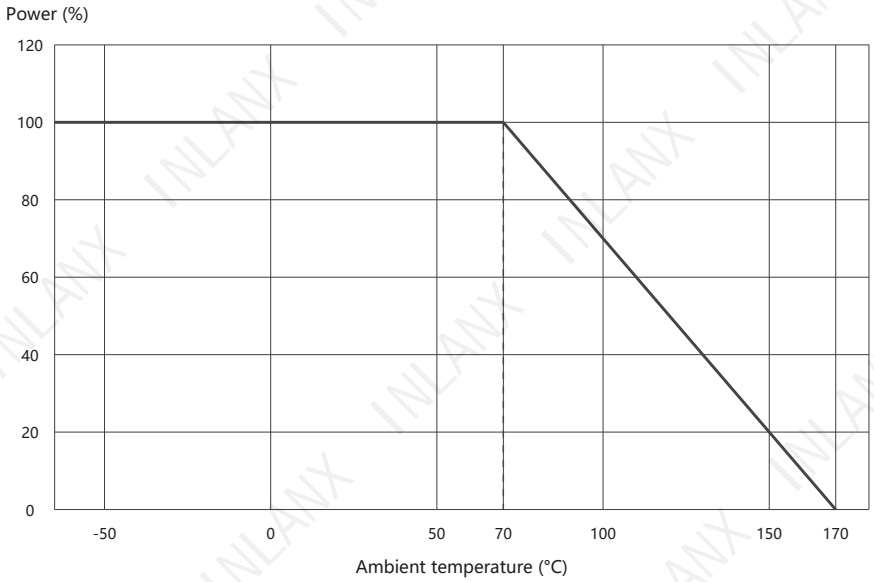
Marking

YMF3825 / YMF4618; R020=20mΩ; 6m80=6.8mΩ. Tolerance: 0.1%, 0.5%, 1%, 2%, 5%; TCR: 5, 10, 15, 20, 30ppm/°C.

Endurance and Test Requirements

Test item	Test conditions	Reference	Limit
Temperature Cycling	1000 Cycles (-55℃ to +150℃)	JESD22 Method JA-104	±0.5%
ESD Test	1) Direct Contact (DC): ±6kV; 2) Air Discharge (AD): ±12kV, ±16kV, ±25kV;	AEC-Q200 REV D June 1	±0.5%
High Temperature Exposure	100hrs.@T=170℃.Unpowered.	MIL-STD-202 Method 108	±0.5%
Moisture Resistance	t=24hrs/cycle.Note: Steps 7a & 7b not required. Unpowered.	MIL-STD-202 Method 106	±0.5%
Biased Humidity	1000hrs 85℃/85%RH。Note: Specified conditions:10% of operating power.	MIL-STD-202 Method 103	±0.5%
Operational Life	Condition D Steady State TA=125℃ at rated power.	MIL-STD-202 Method 108	±0.5%
Thermal Shock	1000X(-55°C to +150°C)	MIL-STD-202Method107 G	0.5%
Solderability	235℃±5℃,2s±0.5s	J-STD-202	95% Coverage Minimum
Resistance to Soldering Heat	260℃±5℃，10s±1s	MIL-STD-202 Method 210	±0.5%
Short Time Overload	5×Rated power for 5 s * 2.5×Rated power for 10 s	MIL-STD-202 Method 201	±0.5%
Shock	100g , 6ms , Orientation & Shock time: ±X, ±Y, ±Z; 3 times each orientation, total 18 times.	MIL-STD-202 Method 213	0.5%
Vibration	5 g's for 20 min, 12 cycles each of 3 orientations. Note: Use 8"X5" PCB .031" thick 7 secure points on one long side and 2 secure points at corners of opposite sides. Parts mounted within 2" from any secure point. Test from 10-2000 Hz.	MIL-STD-202Method204	0.5%

Power Derating



Ordering Information

Field	Codes and description
Type	YMF
Size	4618
Power	10: 10W
Resistance	R005:5mΩ; R100:100mΩ; 0m50:0.5mΩ; 2m20:2.2mΩ
Tolerance	J:±5%; G:±2%; F:±1%; D:±0.5%; B:±0.1%
TCR	C:±5; L:±10; M:±15; P:±20; Q:±30 (ppm/°C)
Pins	4:4 pins; 2:2 pins; C:SMD; D:through-hole; L:long; S:standard