

OU/OUM Series



Composite Film Ceramic Composition

FEATURES

- Innovative and cost-effective composite film technology
- Conforms to ANSI/AAMI EC53:2013/ IEC 60601-2-27:2011
- Suitable replacement for ceramic composition resistors, which are required in many pulse applications
- Available in two packages to suit different board designs: through hole axial, and SMD MELF



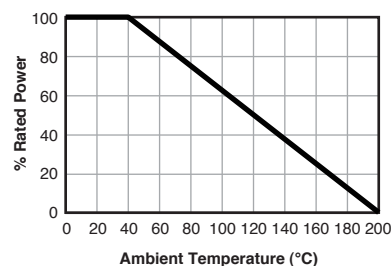
SERIES SPECIFICATIONS

Type	Power Rating (at 40°C)	Maximum Working Voltage	Maximum Permissible Surge Voltage	Resistance Range	Resistance Tolerance	Available Resistance Values
OU	1W	300V	15KV	33Ω - 22KΩ	±10%, ±20%	E-6 / E-12
OUM	1W	400V	15KV	33Ω - 22KΩ	±10%, ±20%	E-6 / E-12

CHARACTERISTICS

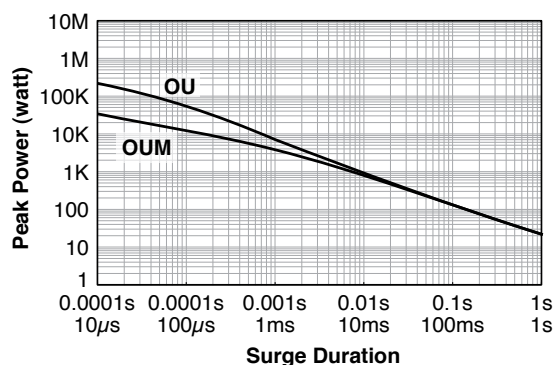
Dielectric Withstanding Voltage	800 VAC or DC
Temperature Coefficient	-3000 ppm/°C (Typical)
Operating Temperature Range	-55 ~ +200°C
Insulation Resistance	>10 ⁴ MΩ
Failure Rate (OUM)	<1pcs/10 ⁹ device hours

Derating

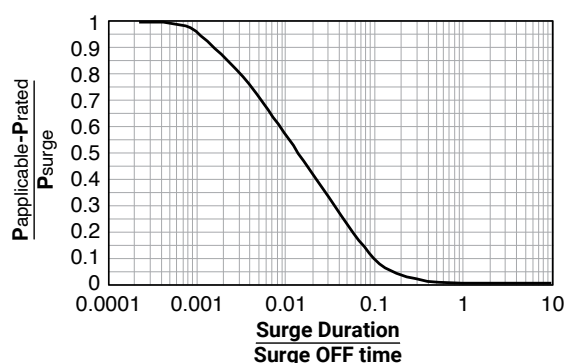


SURGE PERFORMANCE

Single Surge Performance



Surge Power Derating Curve



- SINGLE SURGE PERFORMANCE graph is good for NON REPETITIVE applications operating in an ambient temperature of 40°C or less. For temperatures above 40°C, the graph power must be derated further linearly down to zero at 200°C.
- To determine applicable surge power in continuous-surge applications:
 1. Identify allowable duration and peak power P_{surge} of single surge;
 2. Determine ratio of surge duration/surge OFF time in application;
 3. Calculate $P_{\text{applicable}}$ backwardly according to Y-axis of SURGE POWER DERATING CURVE.

(continued)

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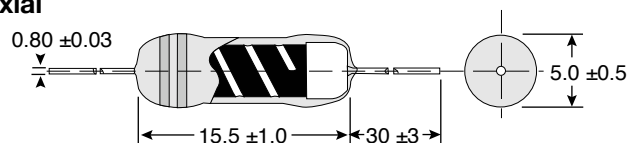
PERFORMANCE

Test	Condition	Max. ΔR
Short Time Over Load	IEC 60115-1 4.13; 5 seconds 2.5x rated voltage (not over 2x max working voltage)	$\pm 2\%$
Load Life In Humidity	IEC 60115-1 4.24; 56 days rated load at $(40 \pm 2)^\circ\text{C}$ and $(93 \pm 3)\%$ relative humidity	$\pm 5\%$
Load Life	IEC 60115-1 4.25.1; Rated load (not over max. working voltage) 1,000 hours with 1.5 hours ON, 0.5 hours OFF, at $(40 \pm 2)^\circ\text{C}$	$\pm 5\%$
Resistance To Soldering Heat	IEC 60115-1 4.18.2; Leads immersed till 3mm from the body in $(260 \pm 5)^\circ\text{C}$ solder for 10 ± 1 seconds	OU: $\pm 2\%$ OUM: $\pm 2.5\%$
Solderability	IEC 60115-1 4.17.2; Solder area covered after $(235 \pm 3)^\circ\text{C}$ / (2 ± 0.2) seconds with flux applied	95% min. coverage
Vibration	IEC 60115-1 4.22; Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 0.75mm and 10 to 500 Hz.	$\pm 2\%$
Thermal Endurance	IEC 60115-1 4.25.3; 1000 hours at 200°C without load	$\pm 5\%$
Thermal Shock	IEC 60115-1 4.19; -55°C 30minutes, $+155^\circ\text{C}$ 30minutes, 5 cycles	$\pm 3\%$
Surge Test	Surge voltage = $\sqrt{40,000 \times P \times R}$ DC (P is power rating, R is resistance value); surge voltage is not more than 15KV. Surge duration 1.2/50 μs , period 60s, 100 surges	$\pm 5\%$

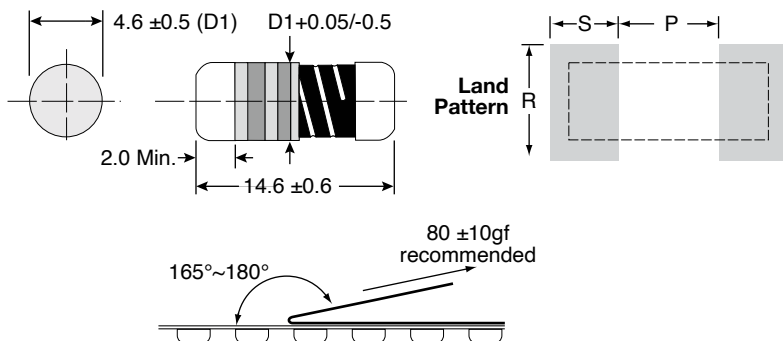
DIMENSIONS

mm

OU: Axial



OUM: MELF



ORDERING INFORMATION

RoHS compliant			
O U M 4 7 1 K E			
OU Series	Construction	Resistance	Tolerance
	M = MELF blank = axial	first two digits are significant; third is multiplier 471 = 470 Ω	K = 10%

Standard Part Numbers

Axial	MELF
OU470KE	OUM560KE OUM820KE
OU101KE OU151KE	OUM101KE OUM181KE
OU221KE OU471KE	OUM471KE OUM821KE
OU102KE OU152KE	OUM102KE OUM182KE OUM332KE OUM472KE
OU472KE OU822KE	
OU103KE OU153KE OU223KE	OUM103KE OUM183KE OUM223KE