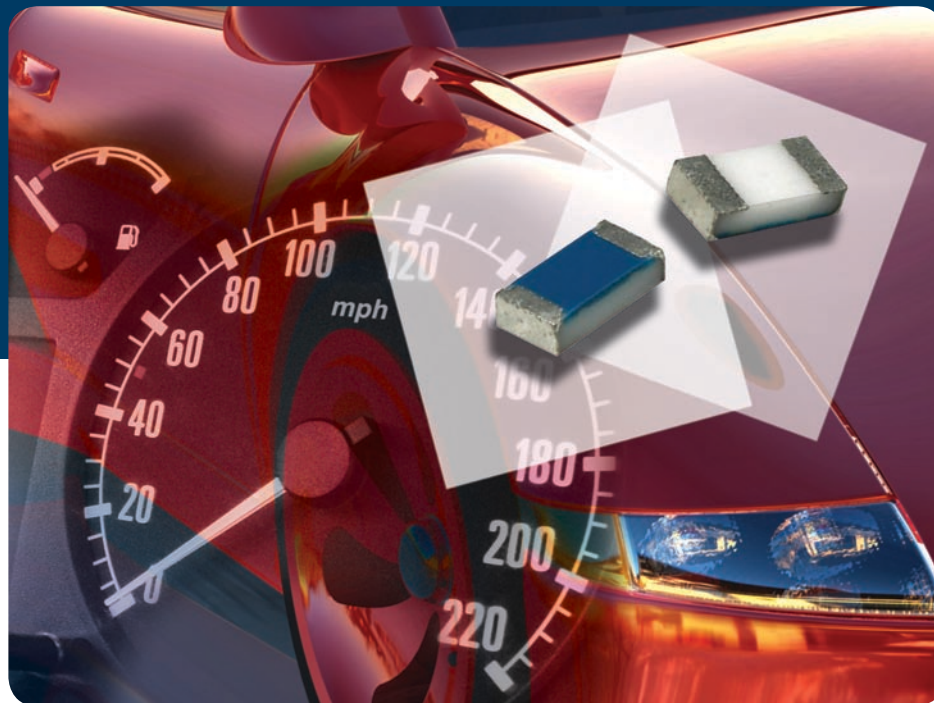




THIN FILM RESISTORS

MCT 0603 AT



Professional Automotive Thin Film Chip Resistors

KEY BENEFITS

- Permissible film temperature: 175 °C
- AEC-Q200 compliant
- 1000 V ESD capability
- High power rating: $P_{85} = 150$ mW
- Superior moisture resistivity: < 0.5 % (85 °C; 85 % RH; 56 days)
- Approved according to EN 140 401-801
- Green product, supports lead (Pb)-free soldering, RoHs-compliant

APPLICATIONS

- Automotive
- Telecommunications
- Industrial equipment
- Test and measuring equipment
- Medical equipment

Datasheet is available on our web site at www.vishay.com
for MCT 0603 AT - <http://www.vishay.com/doc?28760>

Professional Automotive Thin Film Chip Resistor



FEATURES

- Operating temperature 175 °C, 1000 h
- Superior moisture resistivity < 0.5 % (85 °C; 85 % RH; 1000 h)
- Rated dissipation $P_{85} = 150$ mW
- AEC-Q200 compliant
- Green product, supports lead (Pb)-free soldering, RoHS compliant



APPLICATIONS

- Automotive
- Telecommunication
- Medical equipment
- Industrial equipment

MCT 0603 AT Professional Thin Film Chip Resistors are the perfect choice for most fields of modern professional electronics where reliability and stability is of major concern. Typical applications include automotive, telecommunication, industrial, medical equipment, precision test and measuring equipment.



METRIC SIZE	0603
INCH:	RR1608M
METRIC:	RR1608M

TECHNICAL SPECIFICATIONS

DESCRIPTION	MCT 0603 AT
Metric size	RR1608M
Resistance range	100 Ω to 100 kΩ
Resistance tolerance	± 1%; ± 0.5 %
Temperature coefficient	± 50 ppm/K; ± 25 ppm/K
Rated dissipation P_{85} (1)	0.150 W
Operating voltage, U_{max} , AC/DC	75 V
Permissible film temperature (1)	175 °C
Thermal resistance (2)	≤ 550 K/W
Insulation voltage	100 V
	1 min.; U_{ins} continuous
Observed failure rate $FT_{observed}$	≤ 0.1 x 10 ⁻⁹ /h

Notes

- Please refer to APPLICATION INFORMATION below
- Measuring conditions in accordance with EN 140401-801

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For technical questions, contact filmresistors.thinfilmchip@vishay.com

APPLICATION INFORMATION

The power dissipation on the resistor generates a temperature rise against the local ambient, depending on the heat flow support of the printed-circuit board (thermal resistance). The rated dissipation applies only if the permitted film temperature is not exceeded.

These resistors do not feature a limited lifetime when operated within the permissible limits. However, resistance value drift increasing over operating time may result in exceeding a limit acceptable to the specific application. Hereby establishing a functional lifetime. At the maximum permissible film temperature of 175 °C the useful lifetime is specified for 1000 h. The designer may estimate the performance of the particular resistor application or set certain load and temperature limits in order to maintain a desired stability.

MAXIMUM RESISTANCE CHANGE AT RATED POWER

DESCRIPTION	MCT 0603 AT	
Metric size	RR1608M	
Operation mode	Standard	Power
Rated power	$P_{70} = 0.125$ W	$P_{85} = 0.15$ W
Film temperature	125 °C	155 °C
Max. resistance change at P_{70} for resistance range:	100 Ω to 100 kΩ	175 °C
$\Delta R/R$ max., after:	≤ 0.15 %	≤ 0.25 %
	1000 h	≤ 0.25 %
	8000 h	≤ 0.5 %
	225 000 h	≤ 1.0 %
Max. resistance change at P_{85} for resistance range:	100 Ω to 100 kΩ	≤ 0.5 %
$\Delta R/R$ max., after:	1000 h	≤ 0.5 %

PART NUMBER AND PRODUCT DESCRIPTION (1)

PART NUMBER: MCT0603MD4641DPW00

M	C	T	0	6	0	3	M	D	4	6	4	1	D	P	W	0	0
MODEL/SIZE	SPECIAL CHARACTER		TCR		VALUE		TOLERANCE		PACKAGING (2)		SPECIAL CHARACTER		RESISTANCE VALUE				
MCT0603	M = AT (Automotive)		D = ± 25 ppm/K C = ± 50 ppm/K Z = Jumper		3 digit value multiplier 0 = *10 ⁰ 1 = *10 ¹ 2 = *10 ² 3 = *10 ³ 0000 = Jumper		D = ± 0.5 % Z = Jumper		P5 PW		up to 2 digits 00 = standard		4K = 47 kΩ 0R0 = Jumper				
PRODUCT DESCRIPTION: MCT 0603 - 25 0.5 % AT PW 4K64																	
MCT	0603	-25	0.5 %	AT	PW	4K64											
MODEL	SIZE	TCR	TOLERANCE VALUE	SPECIAL CHARACTER	PACKAGING (2)	RESISTANCE VALUE											
MCT	0603	± 25 ppm/K ± 50 ppm/K	± 0.5 % ± 1 %	AT	P5 PW	47K = 47 kΩ 0R0 = Jumper											

Notes

- Products can be ordered using either the PART NUMBER and PRODUCT DESCRIPTION
- Please refer to table PACKAGING below

Revision 07-May-08

