

# AP725 20W TO-263 Power Resistor

- Power Dissipation 20 watts with h/s
- Low inductance
- D<sup>2</sup>PAK housing
- Electrically isolated from backplate
- TCR Options  $\pm 100$  ppm/ $^{\circ}$ C
- RoHS Compliant



## Characteristics

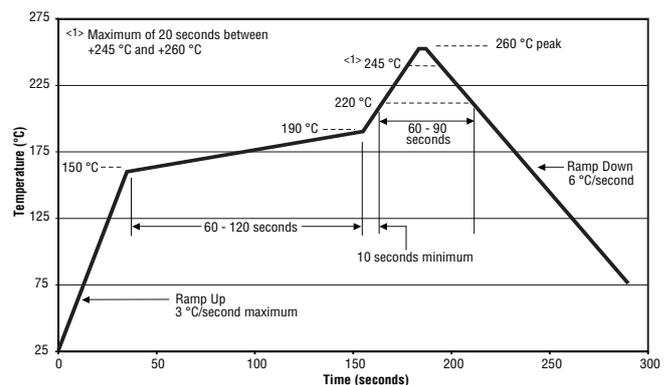
Tolerance (Code):	$\pm 1\%$ (F), $\pm 5\%$ (J)
Value range:	R02 to 130K (with standard resistance values)
Power rating:	20W at 25 $^{\circ}$ C case temperature
Temperature coefficient:	$\pm 100$ ppm/ $^{\circ}$ C
Thermal resistance:	6.5 $^{\circ}$ C/W
Inductance:	0.1 $\mu$ H maximum
Operating voltage:	$\sqrt{P \cdot R}$ with a maximum of 250V
Dielectric strength:	2kVac
Insulation resistance:	10G $\Omega$
Operating temperature:	-55 $^{\circ}$ C to 155 $^{\circ}$ C

## Electrical Specifications

Parameter	Specification
Short term overload (2x Pr for R < 2 $\Omega$ , 1.6 x Pr for R $\geq$ 2 $\Omega$ , V < 1.5x operating voltage)	$\Delta R \pm 0.25\%$
Load life ( 1000 hours at rated power)	$\Delta R \pm 1.0\%$
Thermal shock (-55 $^{\circ}$ C to 155 $^{\circ}$ C, 5 cycles)	$\Delta R \pm 0.5\%$
Resistance to soldering heat (10 sec at 270 $^{\circ}$ C)	$\Delta R \pm 0.5\%$
Vibration (20 G 10 - 2000Hz .06" D.A)	$\Delta R \pm 0.25\%$
Moisture sensitivity level	1

## Soldering Profile

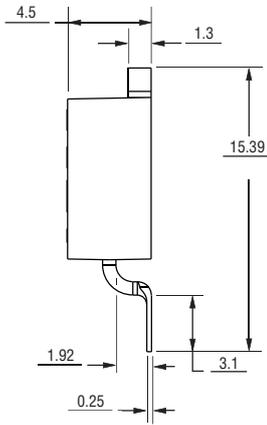
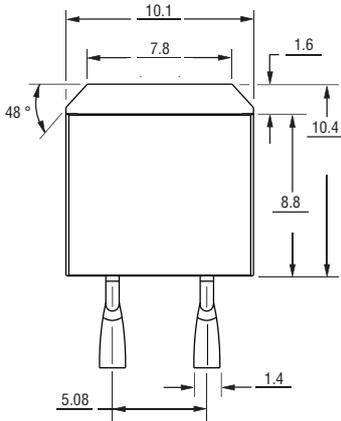
Power dissipation is 2.8W at an ambient temperature of 25 $^{\circ}$ C when mounted on a double sided copper using FR4, 70 $\mu$ m of copper 39x30x1.6mm



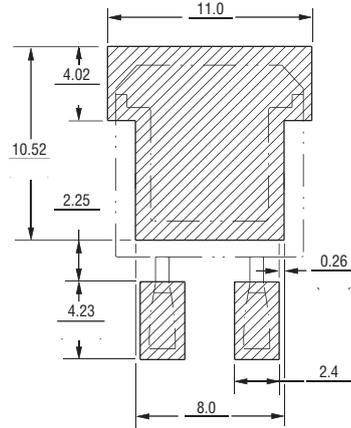
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# AP725 20W TO-263 Power Resistor

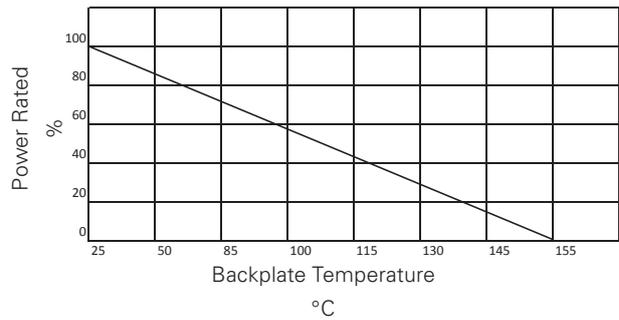
## Dimensions (mm ± 0.38)



## Recommended pad layout



## Derating Curve



## Standard part numbers

AP725R1F	AP7255RF	AP72525RF	AP72575RF
AP725R5F	AP72510RF	AP72530RF	AP725100RF
AP7251RF	AP72512RF	AP72533RF	AP725150RF
AP7251R5F	AP72515RF	AP72547RF	AP725200RF
AP7252RF	AP72520RF	AP72568RF	AP7251KF

## Ordering Procedure

Standard Resistor: Series, Resistance Value, Tolerance, Packaging options T&R - TR or Tubes - blank

e.g. AP725 8R2 J TR / AP725 2R F

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# AP830 30 Watts TO-220 High Power Resistors



A high power TO-220 style resistor package designed for high frequency emitter circuits in switching power supplies. Also used in voltage regulation and low energy pulse loading.

- 30 Watts at 25°C case temperature on heat sink
- Single screw mounting to heat sink
- Moulded case for protection and easy to mount
- Non-inductive design
- Electrically isolated case
- RoHS Compliant



## Characteristics

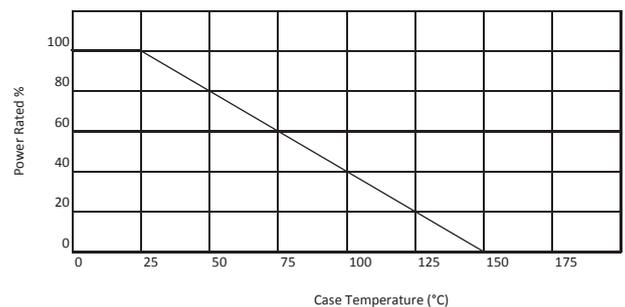
Power rating:	2.25 Watts in free air
Operating voltage:	350V max
Dielectric strength:	1800Vac
Insulation resistance:	10GΩ min
Working temperature range:	-65°C to +150°C
Temperature coefficient:	As specified, referenced to 25°C, ΔR taken at +105°C
Short time overload:	ΔR ±0.3%, 2 times rated power with applied voltage not to exceed 1.5 times maximum continuous operating voltage for 5 seconds
Load life:	ΔR ±1.0%, 2000 hours at rated power
Damp heat with load:	ΔR ±0.5%, 40°C, 90 - 95% R.H max working voltage for 1000 hours with 1.5 hours "ON" and 0.5 hours "OFF"
Solderability:	90% min coverage, 245 ±5°C for 3 seconds
Thermal shock:	ΔR ±0.3%, -65°C - 150°C, 100 cycles
Terminal strength:	ΔR ±0.2%, 2.4 N
Vibration and high frequency:	ΔR ±0.2%, 20g peak

## Electrical Specifications

Resistance Value Range	Available Tolerance & Pref. Value Ranges	Available TCR
R05 - 1R	J (±5%) K (±10%)	Not specified
1R02 - 3R	F (±1%) , J (±5%) , K (±10%)	±300ppm/°C
3R01 - 10R		±100ppm/°C (std.) ±200ppm/°C
10R2 - 10K	D (±0.5%) F (±1%) J (±5%) K (±10%)	±50ppm/°C ±100ppm/°C (std.) ±200ppm/°C

Preferred value ranges:  
F (±1%) - E96 , J (±5%) - E24, K (±10%) - E12

## Derating Curve

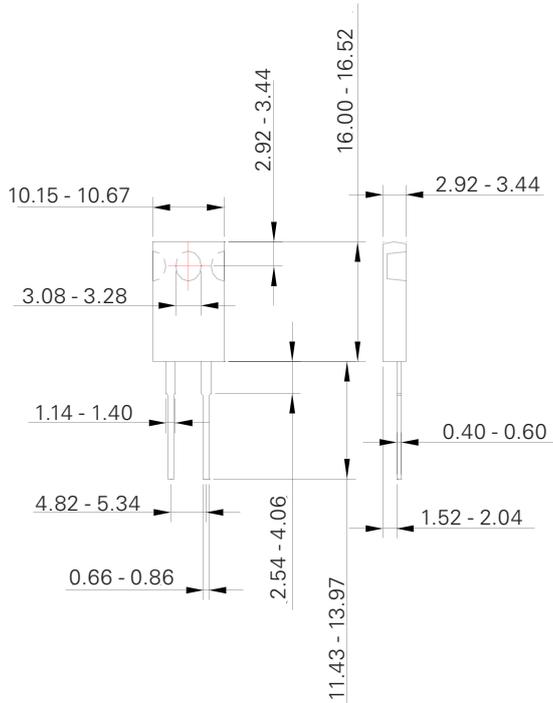


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# AP830 30 Watts TO-220 High Power Resistors



## Dimensions (mm)



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# AP836 35 Watts TO-220 High Power Resistors

A high power TO-220 style resistor package designed for high frequency emitter circuits in switching power supplies. Also used in voltage regulation and low energy pulse loading.

- 35 Watts at 25°C case temperature on heat sink
- Single screw mounting to heat sink
- Moulded case for protection and easy to mount
- Non-inductive design
- Electrically isolated case
- RoHS Compliant



## Characteristics

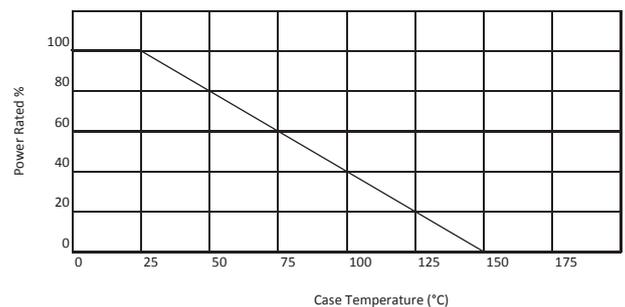
Power rating:	2.50 Watts in free air
Operating voltage:	350V max
Dielectric strength:	1800Vac
Insulation resistance:	10GΩ min
Working temperature:	-65°C to 150°C
Temperature coefficient:	As specified, referenced to 25°C, ΔR taken at +105°C
Short time overload:	ΔR ±0.3%, 2 times rated power with applied voltage not to exceed 1.5 times maximum continuous operating voltage for 5 seconds
Load life:	ΔR ±1.0%, 2000 hours at rated power
Damp heat with load:	ΔR ±0.5%, 40 ±2°C, 90 - 95% R.H max working voltage for 1000 hours with 1.5 hours "ON" and 0.5 hours "OFF"
Solderability:	90% min coverage, 245 ±5°C for 3 seconds
Thermal shock:	ΔR ±0.3%, -65°C - 150°C, 100 cycles
Terminal strength:	ΔR ±0.2%, 2.4 N
Vibration and high frequency:	ΔR ±0.2%, 20g peak

## Electrical Specifications

Resistance Value Range	Available Tolerance & Pref. Value Ranges	Available TCR
R05 - 1R	J (±5%) K (±10%)	Not specified
1R02 - 3R	F (±1%) , J (±5%) , K (±10%)	±300ppm/°C
3R01 - 10R		±100ppm/°C (std.) ±200ppm/°C
10R2 - 10K	D (±0.5%) F (±1%) J (±5%) K (±10%)	±50ppm/°C ±100ppm/°C (std.) ±200ppm/°C

Preferred value ranges:  
F (±1%) - E96 , J (±5%) - E24, K (±10%) - E12

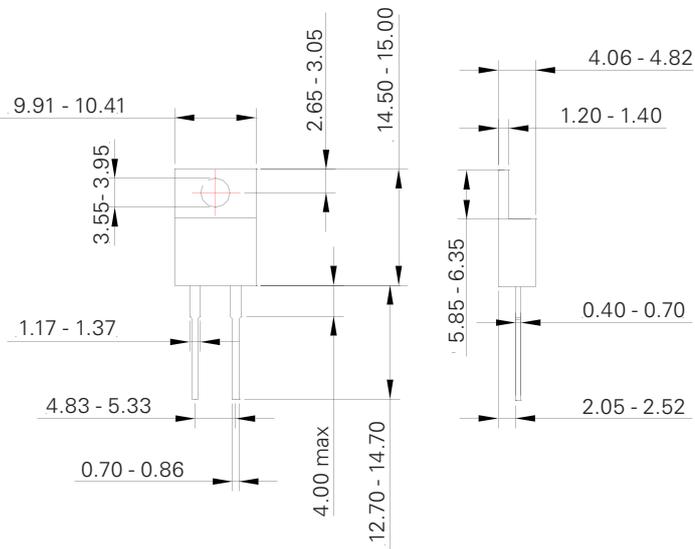
## Derating Curve



For more information and ordering, please consult  
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# AP836 35 Watts TO-220 High Power Resistors

## Dimensions (mm)



## Standard part numbers

AP8361RJ	AP83615RJ	AP836150RJ
AP8362R2J	AP83622RJ	AP836330RJ
AP8363R3J	AP83633RJ	AP836470RJ
AP8364R7J	AP83647RJ	AP8361KJ
AP8365R6J	AP83651RJ	AP8362K4J
AP8367R5J	AP83675RJ	AP8364K7J
AP83610RJ	AP836100RJ	AP83610KJ

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# AP851 50 Watts TO-220 High Power Resistors

A high power TO-220 style resistor package designed for high frequency emitter circuits in switching power supplies. Also used in voltage regulation and low energy pulse loading.



- 50 Watts at 25°C case temperature on heat sink
- Single screw mounting to heat sink
- Moulded case for protection and easy to mount
- Non-inductive design
- Electrically isolated case
- RoHS Compliant

## Characteristics

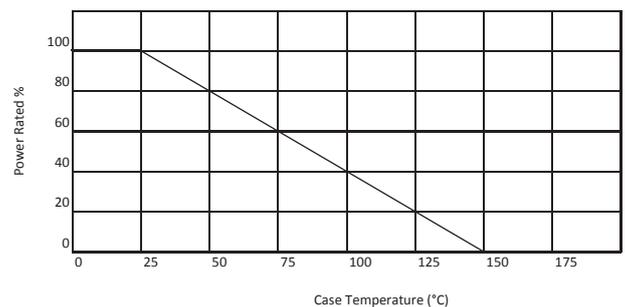
Power rating:	2.25 Watts in free air
Operating voltage:	420V max
Dielectric strength:	1800Vac
Insulation resistance:	10GΩ min
Temperature coefficient:	As specified, referenced to 25°C, ΔR taken at +105°C
Short time overload:	ΔR ±0.3%, 2 times rated power with applied voltage not to exceed 1.5 times maximum continuous operating voltage for 5 seconds
Load life:	ΔR ±1.0%, 2000 hours at rated power
Damp heat with load:	ΔR ±0.5%, 40 ±2°C, 90 - 95% R.H max working voltage for 1000 hours with 1.5 hours "ON" and 0.5 hours "OFF"
Solderability:	90% min coverage, 245 ±5°C for 3 seconds
Thermal shock:	ΔR ±0.3%, -65°C - 150°C, 100 cycles
Terminal strength:	ΔR ±0.2%, 2.4 N
Vibration and high frequency:	ΔR ±0.2%, 20g peak

## Electrical Specifications

Resistance Value Range	Available Tolerance & Pref. Value Ranges	Available TCR
R1 - 1R	J (±5%) K (±10%)	Not specified
1R02 - 3R	F (±1%) , J (±5%) , K (±10%)	±300ppm/°C
3R01 - 10R		±100ppm/°C (std.) ±200ppm/°C
10R2 - 10K	D (±0.5%) F (±1%) J (±5%) K (±10%)	±50ppm/°C ±100ppm/°C (std.) ±200ppm/°C

Preferred value ranges:  
F (±1%) - E96 , J (±5%) - E24, K (±10%) - E12

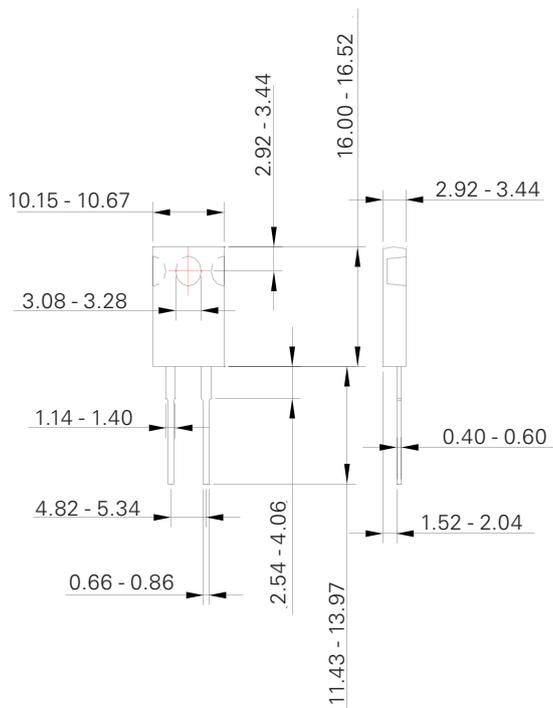
## Derating Curve



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# AP851 50 Watts TO-220 High Power Resistors

## Dimensions (mm)



## Standard part numbers

AP8511RF	AP8514R7J	AP85125RJ	AP851330RJ
AP8511RJ	AP85110RF	AP85147RJ	AP851470RJ
AP8512RJ	AP85110RJ	AP851100RF	AP8511KJ
AP8513R3J	AP85115RJ	AP851100RJ	AP85110KJ
AP8513R9J	AP85125RF	AP851220RJ	

## Ordering Information

**A P 8 5 1 1 0 0 R F N**

Series	Resistance	Tolerance	TCR
		F = 1%	N = 50ppm
		J = 5%	L = 200ppm
		K = 10%	Blank = standard

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# AP101 100W TO-247 High Power Resistors **ARCOL**

- 100 watts at 25°C case temperature heat sink mounted
- TO-247 style power package
- Single screw mounting to heat sink
- Moulded case for protection
- Electrically isolated case
- Non-Inductive design
- RoHS Compliant



## Characteristics

Tolerance (Code):	± 1% (F), ± 5% (J), ± 10% (K)
Operating temperature:	-65°C to +175°C
Temperature coefficient:	± 50ppm/°C to ± 300ppm/°C (re to ohmic values), referenced to 25°C, ΔR taken at +105°C
Operating voltage:	700V max
Dielectric strength:	1800Vac 60 seconds, ΔR±0.15%
Insulation resistance:	10G min
Maximum torque:	0.9 Nm
Free air:	25°C, rated at 3.5W
Load Life	ΔR±1.0%, Rated power, 2,000 hours
Solderability	90% min. coverage, 245±5°C for 3 seconds
Momentary Overload	ΔR±0.5%, 1.5 times rated power and V (dc) ≤ 1.5VMax. for 5 seconds
Moisture resistance	ΔR±0.5%, -10°C - +65°C, RH>90%, cycle 240 hours
Thermal Shock	ΔR±0.5%, -65°C - 150°C, 100 cycles
Terminal Strength	ΔR±0.2%, (Pull Test) 2.4N
Vibration, High Frequency	ΔR±0.4%, 20g peak

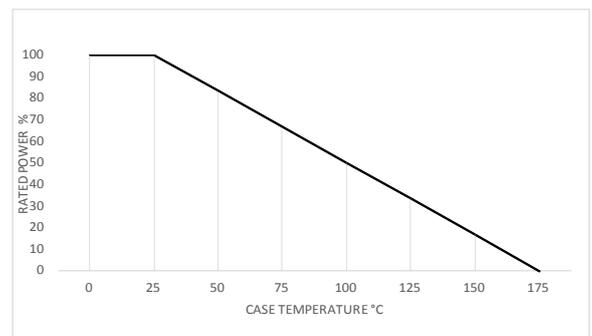
## Ordering Procedure

Standard Resistor: Series, Resistance Value, Tolerance Code, TCR  
 eg: AP101 10K J 50ppm

## Electrical Specifications

Value Range	Tolerance Pref. Value Range	TCR (ppm/°C)
R05 - 1R	± 1% (F)	Not specified
> 1R - 3R	E12, E24, E96	± 300ppm/°C
> 3R - 10R	± 5% (J) E12, E24	± 100ppm/°C, ± 200ppm/°C
> 10R - 100K	± 10% (K) E12	± 50ppm/°C, ± 100ppm/°C, ± 200ppm/°C

## Derating Curve



The case temperature is to be used for the definition of the applied power limit  
 The case temperature measurement must be made with a thermocouple contacting the centre of the component mounted on the designed heat sink  
 Thermal grease should be applied properly

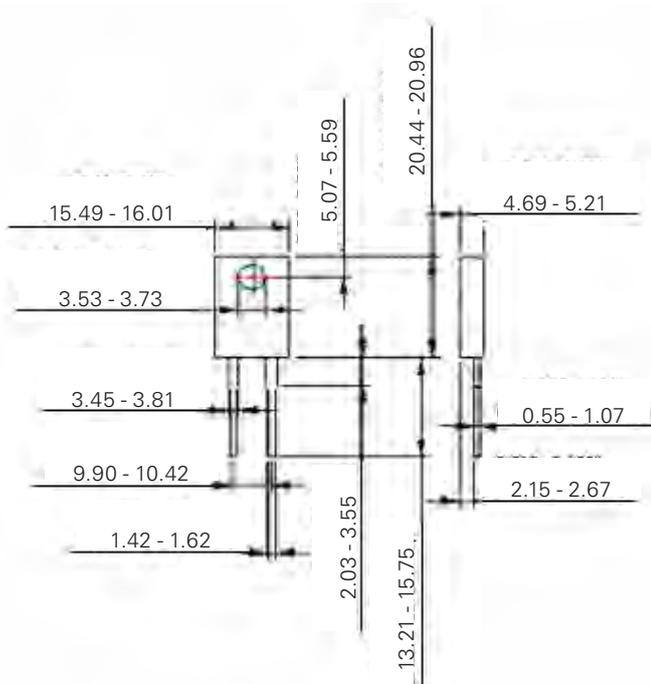
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