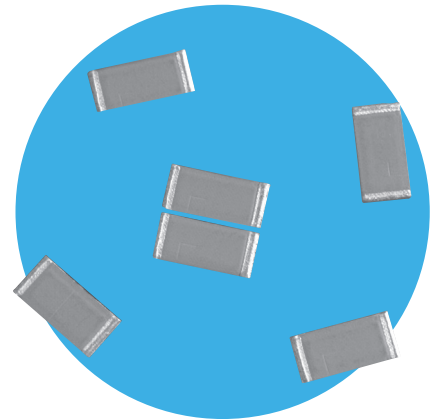


## Double-Sided Chip Resistors

### DSC Series

- Two parallel resistance elements in a single chip
- Excellent pulse withstand performance
- Laser trimmed up to 0.5% tolerance
- Enhanced working voltage
- Enhanced power rating
- Pb-free terminations
- Anti-sulphur version available.



 All Pb-free parts comply with EU Directive 2011/65/EU (RoHS2)

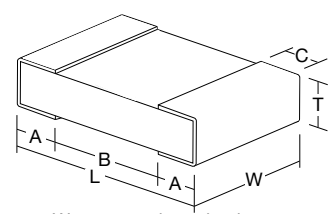
### Electrical Data

		0805	1206	2010	2512
Power @70°C	Watts	0.25	0.33	0.75	1.5
2 second overload power @25°C	Watts	1.6	2.1	4.7	9.4
Short pulse performance		See graphs			
Resistance range	Ohms	1R0 to 1M0	1R0 to 4M7		
Tolerance	%	10R to 1M: 0.5, All values: 1, 5			
LEV	Volts	150	200	400	500
TCR	ppm/°C	<10R:200 ≥10R:100			
Operating temperature	°C	-55 to +155			
Dielectric withstand voltage	Volts	500			
Thermal Impedance	°C/W	210	160	80	50
Pad & trace area for rated power*	mm <sup>2</sup>	40	50	60	100
Values		E24 or 96 preferred - other values to special order			

\* Recommended minimum pad & adjacent trace area for each termination for rated power dissipation on FR4 PCB

### Physical Data

Dimensions (mm) & Weight (g)							
	L	W	T max	A	B min	C	Wt.
0805	2.0±0.3	1.25±0.2	0.7	0.3±0.15	0.9	0.3±0.15	0.012
1206	3.2±0.4	1.6±0.2	0.7	0.4±0.2	1.7	0.4±0.15	0.020
2010	5.1±0.3	2.5±0.2	0.8	0.6±0.3	3.0	0.6±0.25	0.036
2512	6.5±0.3	3.2±0.2	0.8	0.6±0.3	4.4	0.6±0.25	0.055



Wrap-around terminations  
(3 faces)

### Construction

Thick film resistor material, overglaze and organic protection are screen printed on a 96% alumina substrate. Wrap-around terminations have an electroplated nickel barrier and Pb-free solderable coating, this ensures excellent 'leach' resistance properties and solderability.

### Marking

Components are not marked. Reels are marked with type, value, tolerance, date code and quantity.

### Solvent Resistance

The body protection is resistant to all normal industrial cleaning solvents suitable for printed circuits.

### General Note

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DSC Series

## Performance Data

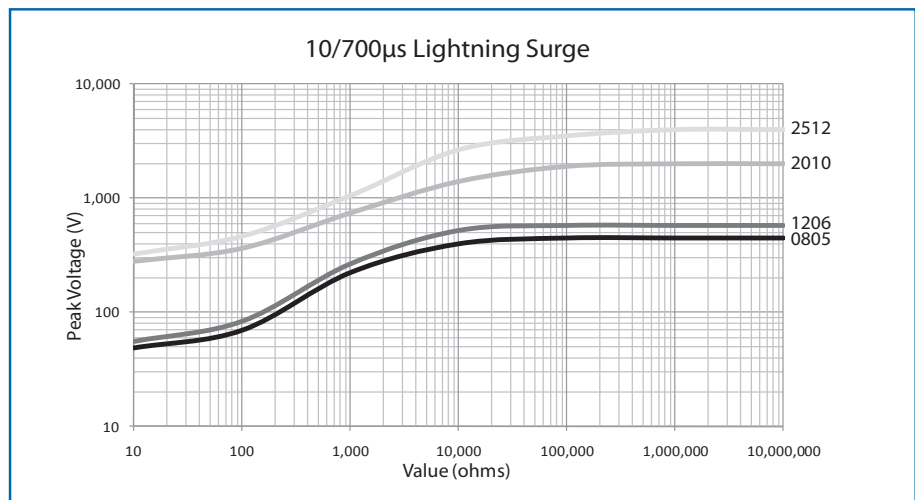
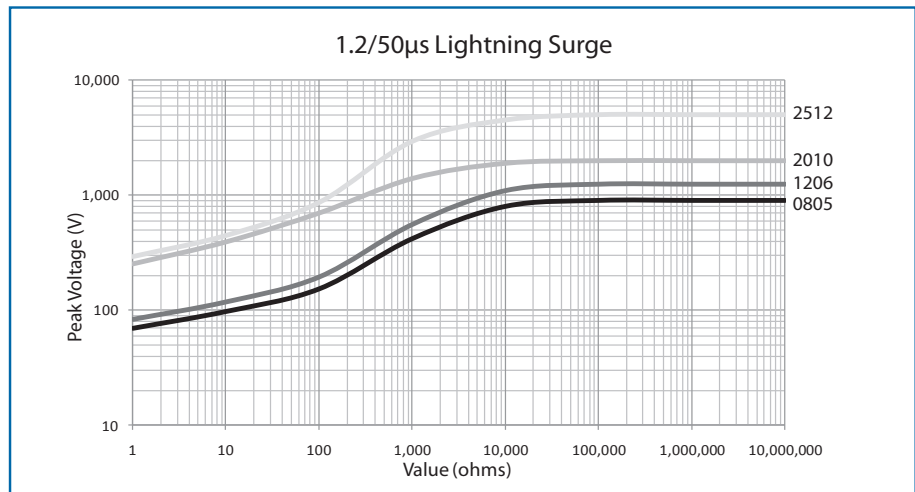
		Maximum	Typical
Load at rated power: 1000 hours at 70°C	ΔR%	1	0.25
Derating from rated power at 70°C	ΔR%	Zero at 155°C	
Overload: 6.25 x rated power for 2 seconds		1	0.1
Shelf life test: 12 months at room temperature	ΔR%	0.1	0.02
Dry heat: 1000 hours at 155°C	ΔR%	1	0.2
Long term damp heat	ΔR%	1	0.25
Temperature rapid change	ΔR%	0.25	0.05
Resistance to sulphur-bearing gas (AS version only): ASTM-B-809		0.25	0.05

Note: A 0.01 Ohm addition to be added to the performance of all resistors <10 Ohms.

## Pulse Performance Data

### Lightning Surge

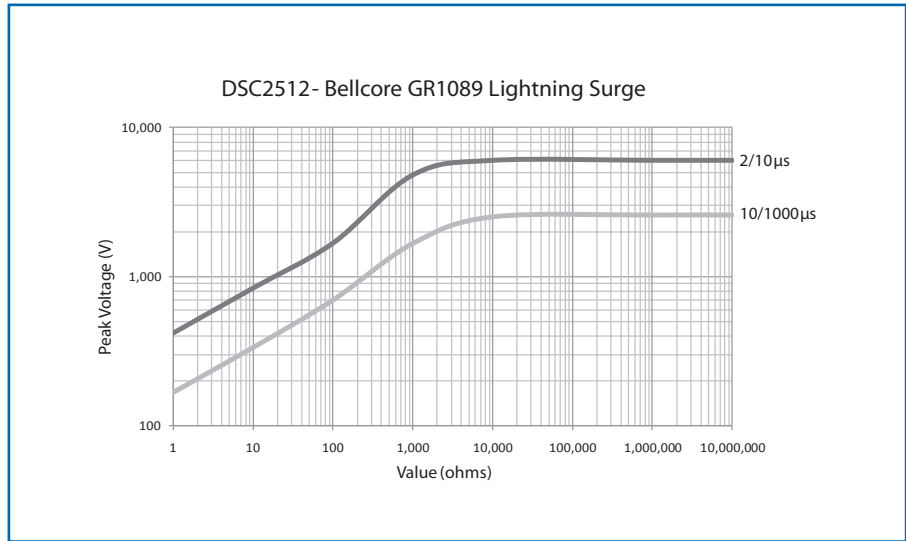
Resistors are tested in accordance with IEC 60 115-1 using both 1.2/50μs and 10/700μs pulse shapes. 10 pulses are applied. The limit of acceptance is a shift in resistance of less than 1% from the initial value.



### General Note

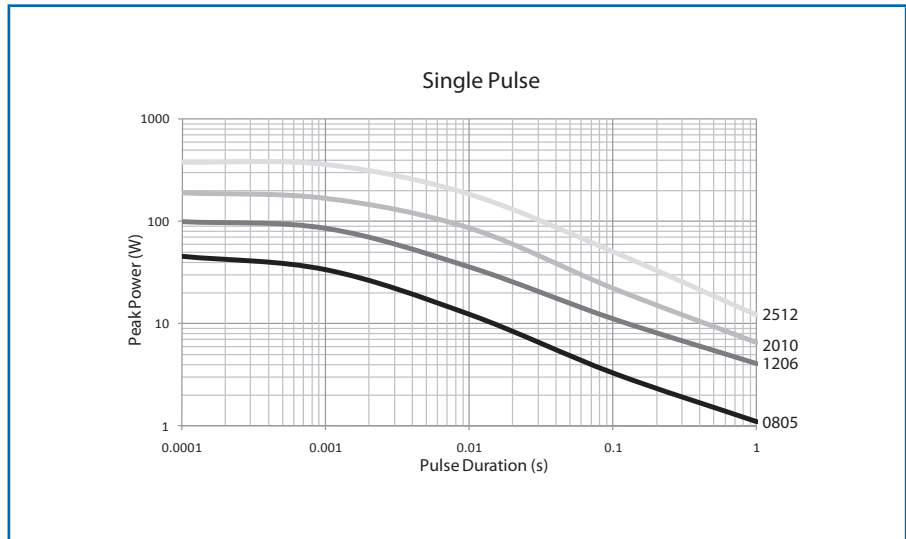
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DSC Series



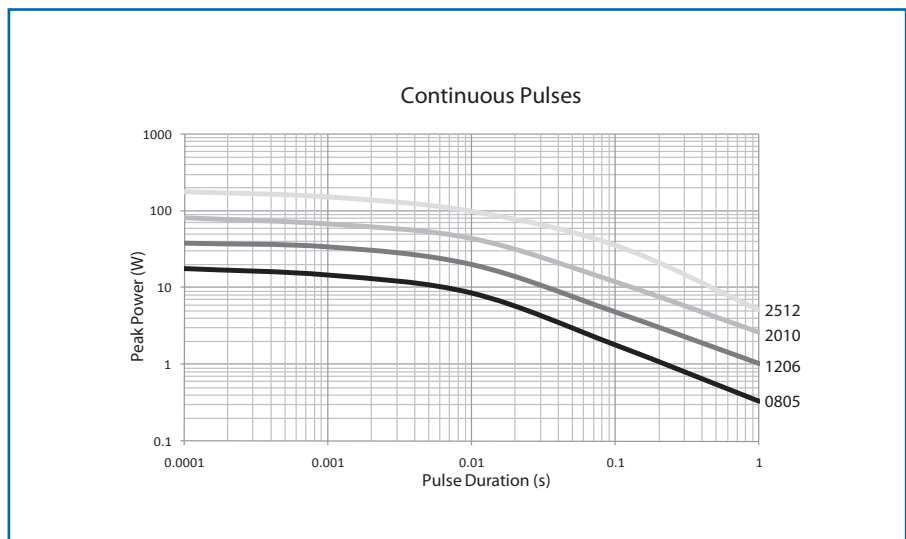
Single Pulse

The single impulse graph is the result of 50 impulses of rectangular shape applied at one-minute intervals. The limit of acceptance was a shift in resistance of less than 1% from the initial value.



Continuous Load Due to Repetitive Pulses

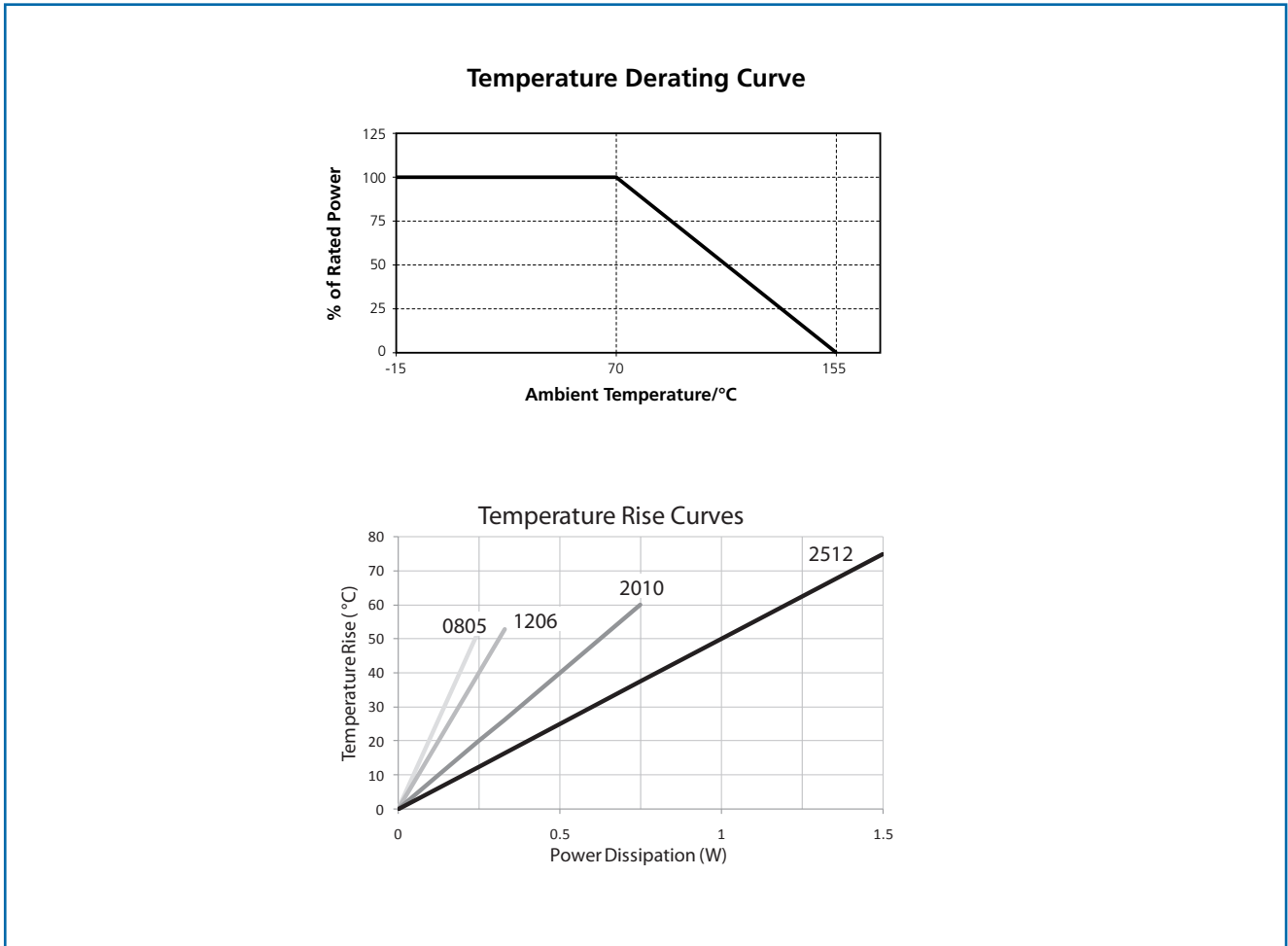
The continuous load graph was obtained by applying repetitive rectangular pulses where the pulse period was adjusted so that the average power dissipated in the resistor was equal to its rated power at 70°C. Again the limit of acceptance was a shift in resistance of less than 1% from the initial value.



General Note

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## Thermal Performance Data



## Packaging

0805 and 1206 DSC series resistors are supplied on 8mm carrier tape and 7 inch reels as per IEC 286-3, quantity per reel; 3000. 2010 and 2512 DSC series resistors are supplied on 12mm carrier tape and 7 inch reels as per IEC 286-3, quantity per reel; 2010 : 3000pcs; 2512 : 1800pcs. Reels of 1000pcs are available on request.

### General Note

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DSC Series

## Application Notes

DSC resistors are ideally suited for handling by automatic methods due to their rectangular shape and the small dimensional tolerances. Electrical connection to a ceramic substrate or to a printed circuit board can be made by reflow or wave soldering of wrap-around terminations.

Wrap-around terminations provide good leach properties and ensure reliable contact. Due to the robust construction, the DSC can be immersed in the solder bath for 30 seconds at 260°C. This enables the resistor to be mounted on one side

of a printed circuit board and wire-led components applied on the other side. DSC is compatible with typical Pb-free soldering materials and temperature profiles

DSC resistors themselves can operate at a maximum temperature of 155°C. For soldered resistors, the joint temperature should not exceed 110°C. This condition is met when the stated power levels at 70°C and recommended pad and trace areas are used. Allowance should be made if smaller areas of copper are used.

## Ordering Procedure

Specify type reference etc as shown in this example of DSC2512 10K ohms 1%.

Type ..... **DSC**    **2512**    **10K**    **F**    **T 1 8**

Size ..... [points to 2512]

Termination ..... [points to 10K]

	Standard terminations
AS	Anti-sulphur terminations

Value (use IEC62 code) ..... [points to 10K]

Tolerance (use IEC62 code) ..... [points to F]

D	0.5%
F	1%
J	5%

Packing ..... [points to T 1 8]

T3		0805, 1206 or 2010	3000/reel	
T18	Tape	2512	1800/reel	Standard
T1		0805, 1206, 2010 or 2512	1000/reel	

**General Note**

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