

CSF363 Series Datasheet

Metal Band Power Resistors | Low Value
Surface Mount, 4 - Terminal

APPLICATIONS



Automotive



Industrial



Power & Energy

FEATURES

- 4 - Terminals Connection
- All Welded Construction, and pulse applications
- Solid Metal Construction
- Low thermal EMF (<3μV/°C)
- Excellent frequency response to 50 MHz
- AEC – Q200 Qualification under process
- RoHS & REACH Compliant

ORDERING CODE - Example

New SAP Part Nr.:

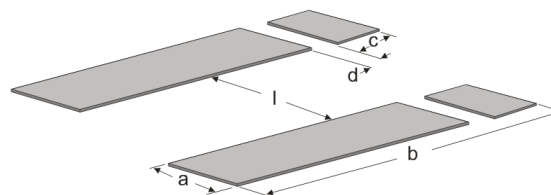
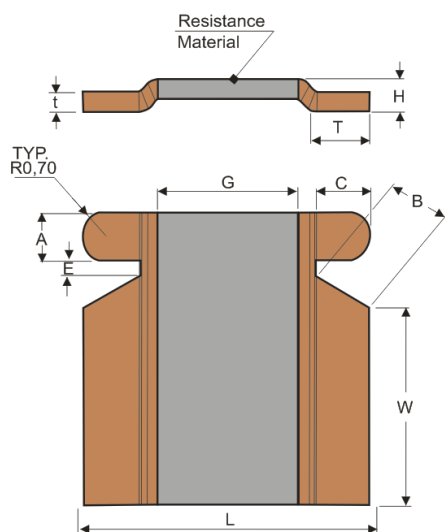
CSF	363	F	K	-	13-	R002	AA
Serie	Size	Tol.	Pack-Code	TCR	Forming type	* R Value	Special
	363 = 3637	D = ±0,5% F = ±1%	K = Blister tape reel	- Base on spec.	13- = 13 inch (Reel diameter)		AA = Standard

*0.2 mΩ to 4 mΩ there are 3~4 digits indicated the resistance value. Letter R/ L is decimal point
(L2 = 0.0002Ω, 0R001 = 1mΩ)

ELECTRICAL SPECIFICATIONS

Type		CSF363
Size		3637
Nominal Power Rating P_{70}	[W]	3,0
Resistance Range (Other values upon request)	[Ω]	R001 , R002 , R003 , R004 , R005 , R006 , R007 , R008 , R009 , R01
Tolerances	±[%]	D = 0,5% , F = 1%
Temperature Coefficient	[ppm/°C]	50 for values R003...R01 75 for values R001...R0029
Element TCR	[ppm/ °C]	< 20
Inductance	[nH]	0.5 to 5
Working Temperature Range	[°C]	-65 ... +170
Max. Working Voltage	[V] _{RMS}	$\sqrt{P_{70} \times R}$
Material		Cu-Mn-Cu

DIMENSIONS [mm]



Recommended solder pads dimensions

Type	Resistance range Ω	l	a	b	c	d
CSF363	R001...R01	4,52	2,95	9,91	1,68	0,61

Type	Resistance range Ω	L ±0,25	G ±0,25	W ±0,25	B ±0,25	C	A ±0,25	E ±0,25	H max.	T ±0,25	t
CSF363	R001...R01	9,14	5,00	6,50	1,63	1,30	1,40	0,50	0,90	1,48	0,40

CSF Series Datasheet

PERFORMANCE DATA

Type / size		CSF363
Short Time Overload ($U=5 \cdot \sqrt{P_{70} \times R} \cdot 5[s]$)	±[%]	0,5
Resistance to Soldering Heat IEC60115-1 clause 4.18 and Mil-STD-202 Method 210 (260[°C], 10 ¹² [s])	±[%]	0,5
Low Temperature Storage -65[°C] 24[h]	±[%]	0,5
High Temperature Exposure Mil-STD-202 Method 108 +170[°C] 1000[h]	±[%]	1,0
Biased Humidity MIL-STD-202 Method 103 (85[°C], 85[%RH] 10[% bias] 1.000[h])	±[%]	0,5
Vibrations Mil-STD-202 Method 204 (10 to 2000 [Hz], 1 [min], 3 directions 12 [h])	±[%]	0,5
Mechanical Shock Mil-STD-202 Method 213 (100 [G] for 6[ms], 5 pulses	±[%]	0,5
Endurance IEC60115-1 clause 4.25 (P_{70} @ 70[°C] 1000[h]), 1,5[h]ON ; 0,5[h]OFF)	±[%]	1,0
Low Temperature Storage -65 [°C] 24 [h]	±[%]	0,5
Thermal Shock (-55 ~150 [°C], 1000 cycles , 15[m] at each extreme)	±[%]	0,5
Moisture Resistance Mil-STD-202 Method 106 0% power, 7a and 7b not required	±[%]	0,5

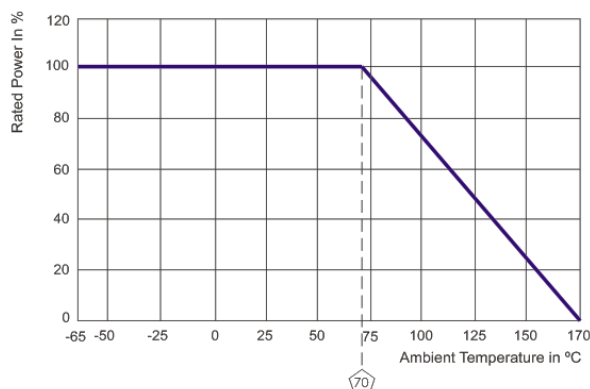
MARKING

The resistors marking will follow below concept:

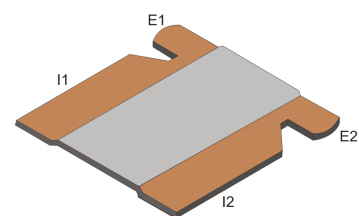
- 4 digits where "R" designates the decimal location in ohms, e.g. 2mΩ the product marking is R002.
- 4 digits where "L" designates the decimal location in milli-ohms, e.g. 1.9mΩ the product marking is 1L9

PERFORMANCE GRAPHS

Power Derating Curve



4 Terminal Kelvin Connections



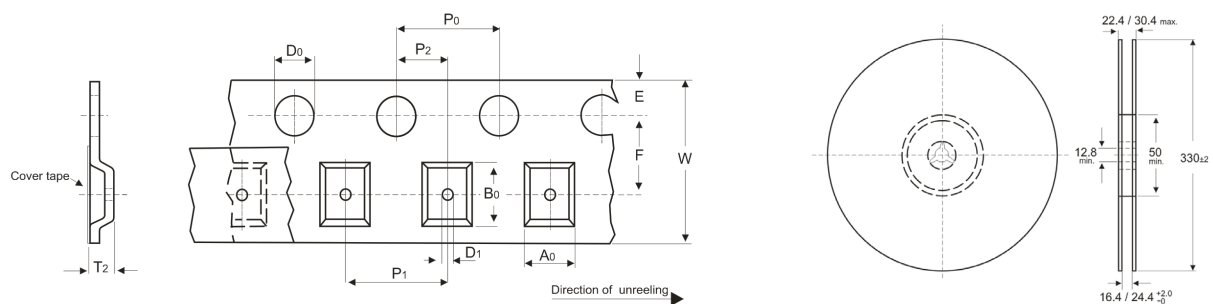
- E1 and E2: Voltage sense connection
- I1 and I2: Current connection

CSF Series Datasheet

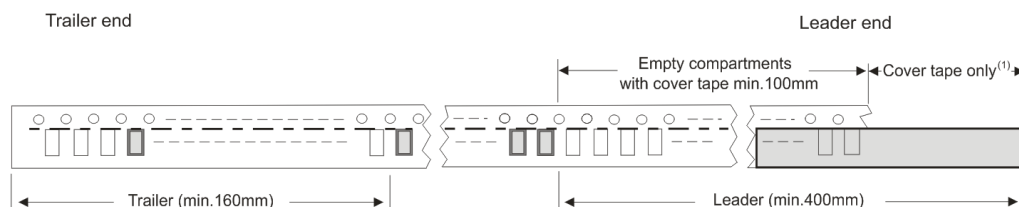
PACKAGING

The type CSF is packed embossed plastic according to IEC60286-3, packing details described below,

Tape and reel information			
Tape width	Reel size	SPQ	Weight (typical) [g/1000 pieces]
16 mm	330mm / 13"	4000	274,3



Type	A0 ±0,1	B0 ±0,1	D0 +0,1	D1 min.	E ±0,1	F ±0,1	P0 ±0,1	P1 ±0,1	P2 ±0,1	T2 max.	W max.
CSF363	9,6	9,9	1,5	1,5	1,75	7,5	4,0	12,0	2,0	1,51	16,3



Notes

- The minimum length of the leader is 400 mm, which includes a minimum 100 mm of carrier tape with empty compartments and sealed by the cover tape
- The minimum length of the trailer is 160 mm carrier tape with empty compartments and sealed by the cover tape

⁽¹⁾ All of the leader may consist of the carrier tape with empty compartments sealed by cover tape