

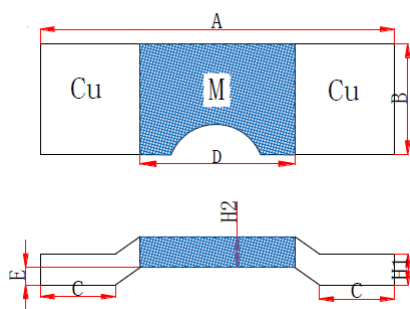
Chip Shunt Resistor



Features

- Resistance value from 0.2mΩ–5mΩ
- Electron beam welding, stable performance
- RoHS compliant
- Excellent long term stability

Construction



Applications

- Switching Power Supply
- Voltage Regulation Module
- PDA and Cell Phone
- Power Module
- Frequency Converters
- DC-DC Converter, Adapter, Battery Pack, Charger
- Current Sensor for Power Hybrid Sources
- High Current Handling for Automotive Engine Controls and Power Management

Dimensions

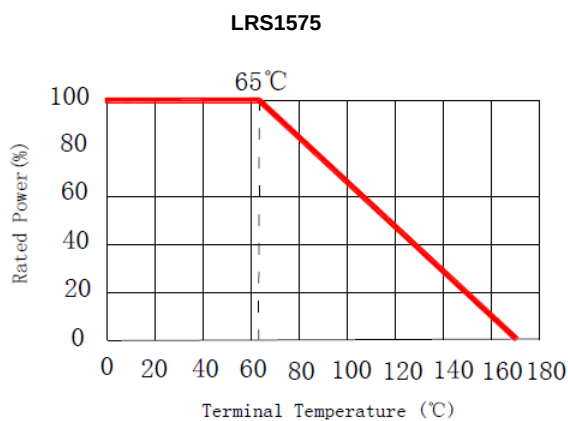
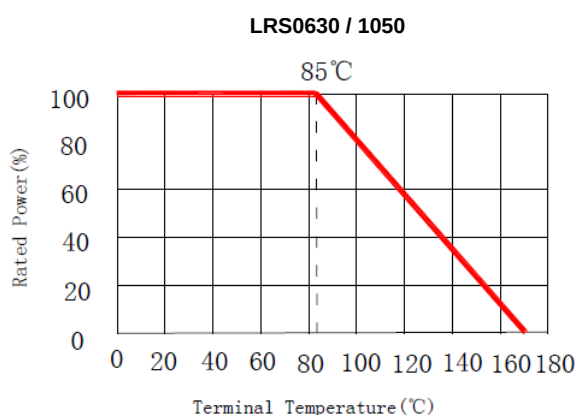
Type	Resistance (mΩ)	Material	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	H1 (mm)	H2 (mm)
LRS0630	0.3	Manganin	6.35±0.3	3.05±0.3	1.14±0.3	3.0±0.3	0.35±0.05	0.95±0.05	0.95±0.05
	0.5	Manganin	6.35±0.3	3.05±0.3	1.14±0.3	3.0±0.3	0.35±0.05	0.89±0.05	0.89±0.05
	0.9	Manganin	6.35±0.3	3.05±0.3	1.14±0.3	3.0±0.3	0.35±0.05	0.50±0.05	0.50±0.05
	1	Manganin	6.35±0.3	3.05±0.3	1.14±0.3	3.0±0.3	0.35±0.05	0.42±0.05	0.42±0.05
	2	Manganin	6.35±0.3	3.05±0.3	1.14±0.3	3.0±0.3	0.35±0.05	0.25±0.05	0.25±0.05
	3	NiCr alloy	6.35±0.3	3.05±0.3	1.14±0.3	3.0±0.3	0.35±0.05	0.48±0.05	0.42±0.05
	4	NiCr alloy	6.35±0.3	3.05±0.3	1.14±0.3	3.0±0.3	0.35±0.05	0.36±0.05	0.42±0.05
LRS1050	0.2, 0.3	Manganin	10.5±0.3	5.0±0.3	2.0±0.3	5.0±0.3	0.50±0.05	1.42±0.05	1.42±0.05
	0.5	Manganin	10.5±0.3	5.0±0.3	2.0±0.3	5.0±0.3	0.50±0.05	0.76±0.05	0.88±0.05
	1	Manganin	10.5±0.3	5.0±0.3	2.0±0.3	5.0±0.3	0.50±0.05	0.38±0.05	0.43±0.05
	2	NiCr alloy	10.5±0.3	5.0±0.3	2.0±0.3	5.0±0.3	0.50±0.05	0.69±0.05	0.64±0.05
	3	NiCr alloy	10.5±0.3	5.0±0.3	2.0±0.3	5.0±0.3	0.50±0.05	0.43±0.05	0.43±0.05
	4	NiCr alloy	10.5±0.3	5.0±0.3	2.0±0.3	5.0±0.3	0.50±0.05	0.32±0.05	0.32±0.05
	5	NiCr alloy	10.5±0.3	5.0±0.3	2.0±0.3	5.0±0.3	0.50±0.05	0.35±0.05	0.25±0.05
LRS1575	0.2	Manganin	15.2±0.3	7.5±0.3	4.0±0.3	5.0±0.3	0.50±0.05	1.42±0.05	1.42±0.05
	0.4	Manganin	15.2±0.3	7.5±0.3	4.0±0.3	5.0±0.3	0.50±0.05	0.76±0.05	0.74±0.05
	0.5	Manganin	15.2±0.3	7.5±0.3	4.0±0.3	5.0±0.3	0.50±0.05	0.56±0.05	0.56±0.05
	1	Manganin	15.2±0.3	7.5±0.3	4.0±0.3	5.0±0.3	0.50±0.05	0.32±0.05	0.32±0.05
	2	NiCr alloy	15.2±0.3	7.5±0.3	4.0±0.3	5.0±0.3	0.50±0.05	0.40±0.05	0.40±0.05
	3	NiCr alloy	15.2±0.3	7.5±0.3	4.0±0.3	5.0±0.3	0.50±0.05	0.27±0.05	0.27±0.05
	5	NiCr alloy	15.2±0.3	7.5±0.3	4.0±0.3	5.0±0.3	0.50±0.05	0.20±0.05	0.20±0.05

Chip Shunt Resistor

Part Numbering

LRS	1050	F	T	W	H	0M50	M
Product Type	Dimensions	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance	Material Code
	0630: 6.35x3.05 1050: 10.5x5.0 1575: 15.2x7.5	F: $\pm 1\%$ J: $\pm 5\%$	T: Taping Reel	D: ± 50 1: ± 60 W: ± 75 E: ± 100	S: 2W B: 2.5W R: 3W C: 3.5W H: 4W D: 5W I: 6W E: 7W	0M20: 0.2m Ω 0M30: 0.3m Ω 0M50: 0.5m Ω R001: 1m Ω R002: 2m Ω R003: 3m Ω R004: 4m Ω	M: Manganin N: NiCr alloy

Derating Curve



Standard Electrical Specifications

Type	Power Rating	Resistance Range(m Ω)		TCR (PPM/°C)
		$\pm 1\%$	$\pm 5\%$	
LRS0630	2.5W	4		± 100
	3W	0.3, 0.5, 0.9, 1		± 50
	3W	2, 3		± 100
LRS1050	2W	5		± 100
	2.5W	4		± 100
	3W	3		± 100
	4W	1		± 60
	4W	2		± 100
	4W	0.5		± 75
	5W	0.2, 0.3		± 75
LRS1575	3W	5		± 100
	3.5W	3		± 100
	4W	2		± 100
	6W	0.5, 1		± 100
	6W	0.4		± 50
	7W	0.2		± 50

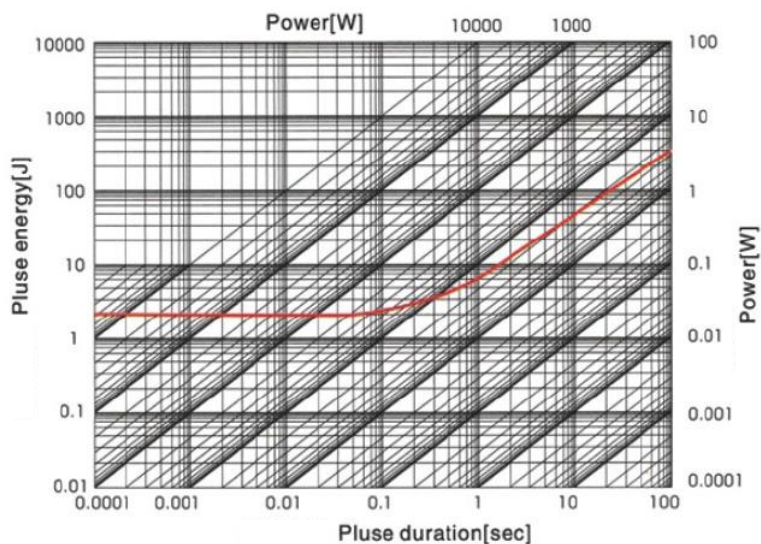
Chip Shunt Resistor

Environmental Characteristics

Item	Requirement	Test Method
Short time overload	$\Delta R \leq \pm 0.5\%R$	Rated Power $\times 5$ for 5 seconds
Load Life	$\Delta R \leq \pm 1.0\%R$	70°C, power rated for 1000 hours
Resistance to Soldering Heat	$\Delta R \leq \pm 0.5\%R$	260°C for 10±1s
Thermal Shock	$\Delta R \leq \pm 0.5\%R$	-55°C/175°C, 30min, 5 cycles
Moisture Resistance	$\Delta R \leq \pm 1.0\%R$	-55°C, 93±3%RH, 56d
High Temperature Exposure	$\Delta R \leq \pm 1.0\%R$	175°C for 1000 hours
Vibration	$\Delta R \leq \pm 0.5\%R$	10~200Hz, 98m/S ² , 6hours

■ Storage Temperature: 15~28°C; Humidity < 80%RH

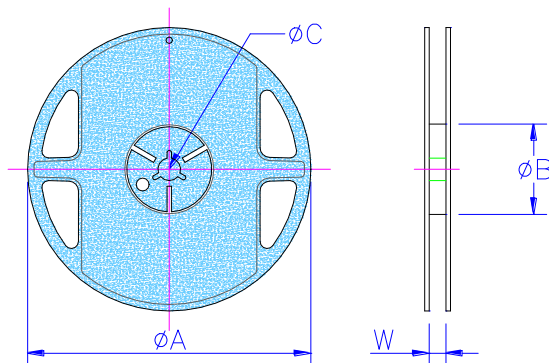
Pulse Energy



Chip Shunt Resistor

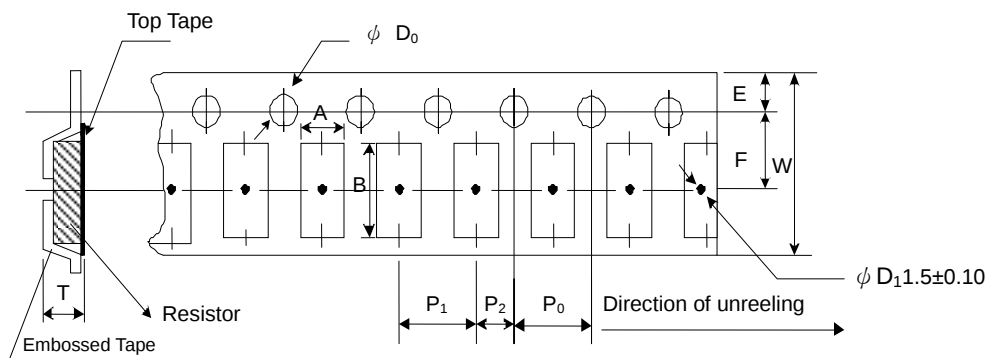
■ Packaging

Reel Specifications & Packaging Quantity



Type	Packaging Quantity		Tape Width	Reel Diameter	ΦA (mm)	ΦB (mm)	ΦC (mm)	W (mm)
LRS0630	Embossed	5K	16mm	13 inch	330.5±1.0	99.5±0.5	13.2+0.3/-0.2	17.4±0.5
LRS1050	Embossed	3K	24mm	13 inch	330.5±1.0	99.5±0.5	13.2+0.3/-0.2	25.4±0.5
LRS1575	Embossed	2K	24mm	13 inch	330.5±1.0	99.5±0.5	13.2+0.3/-0.2	25.4±0.5

Embossed Plastic Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P ₀ (mm)	P ₁ (mm)	P ₂ (mm)	ΦD ₀ (mm)	T (mm)
LRS0630	3.50±0.10	6.80±0.10	16.0±0.30	1.75±0.10	7.5±0.15	4.00±0.10	8.00±0.10	2.00±0.05	1.50+0.1, -0	1.45±0.10
LRS1050	5.70±0.10	11.20±0.10	24.0±0.30	1.75±0.10	11.5±0.15	4.00±0.10	8.00±0.10	2.00±0.10	1.50+0.1, -0	2.05±0.10
LRS1575	8.20±0.10	15.90±0.10	24.0±0.30	1.75±0.10	11.5±0.15	4.00±0.10	12.00±0.10	2.00±0.10	1.50+0.1, -0	2.05±0.10