

**Type TL Series**



Tyco are pleased to offer this unique High Power, metal chip resistor for current sensing positions. It has a special metal resistive element and suitable barrier layers beneath the solder to prolong terminal life. Following the developments by semiconductor manufacturers in the production of a range of IC's for battery charge management and low voltage power supplies, the TL Series satisfies the demand for a low ohmic shunt resistor to act as a current sensor. It has particular applications in the automotive industry for sensing in EMU's.

**Key Features**

- Up to 1 Watt at 70°C
- Supplied on Tape
- Ideal for Current Detection
- Wide Value Range R001 to 1R0 Possible
- Fully Automated Manufacture
- 12:06, 20:10 and 25:12 Packages Available
- Available in Distribution

PRODUCT  
PLANNED FOR EOL

LTB 15/11/2023

For suggested alternatives please see following pages

**Type TL Series**

Product Planned For EOL

**Characteristics - Electrical**

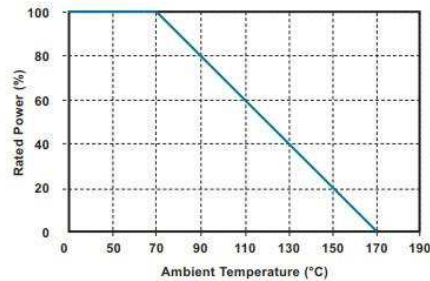
	1206	2010	2512
Resistance Value Range:	R003-R20	R003-R50	R001-R50
Resistance Tolerance:	± 1%		
Power Rating:	Up to 1 watt at 70°C derating to zero at 170°C		
Operating Temperature:	-65°C to +170°C		
Inductance:	< 5 Nanohenries		
T.C.R.	±75ppm/°C (R007-R20/R50)		

**Characteristics - Mechanical**

Body Construction:	Fully Welded Element
Terminations:	100% Tin
Coating:	Epoxy

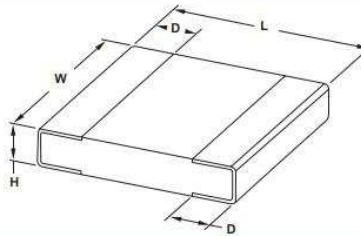
**Power Derating Curve**

Type	Power Rating
TL2B	0.25 Watts
TL2H*	0.5 Watts
TL3A	1.0 Watts



For resistors operated in ambient temperatures above 70°C, power rating must be derated in accordance with this curve.

**Dimensions**



Type	L	W	H	D
TL2B	3.2	1.6	0.6	0.5
TL2H*	5.1	2.5	0.6	0.5
TL3A	6.4	3.2	0.6	0.8

**How to Order**

TL	3A	R015	F	TE
Common Part	Power Ratings	Resistance Value	Tolerance	Packaging
TL - Standard Part	2B - 12:06 *2H - 20:10 3A - 25:12	0.005 ohm (5 milli ohm) R005  0.015 ohm (15 milli ohms) R015  0.047 ohm (47 milli ohms) R047	F - ±1%	TE - 4000 per Reel  TDG - 2000 per Reel (2512 only)

## Suggested Replacement Parts

### Series:

TLR Series [TLR Series Data Sheet](#)

TLRP Series [TLRP Series Data Sheet](#)

TLM Series [TLM Series Data Sheet](#)

TLRF Series [TLRF Data Sheet](#)

Original Part			Replacement Part			Comparison
TCPN	Part Description	Alias	TCPN	Part Description	Alias	Key Differences
4-1625826-3	TL2B R01 1% 4K RL	TL2BR01FTE	1-2176467-4	TLRP 1206 1.0W R010 1% 75PPM 5K RL	TLRP2B10WR010FTD	Power Rating (W) - 0.25 Vs 1: Dimensions (mm) 3.2 x 1.6 x 0.635 Vs 3.15 x 1.45 x 0.55: See Datasheet
1625826-3	TL2B R01 1%	TL2BR01F	1-2176467-4	TLRP 1206 1.0W R010 1% 75PPM 5K RL	TLRP2B10WR010FTD	
1625826-1	TL2B R015 1%	TL2BR015F	1-2176467-6	TLRP 1206 1.0W R015 1% 75PPM 5K RL	TLRP2B10WR015FTD	
4-1625826-1	TL2B R015 1% 4K RL	TL2BR015FTE	1-2176467-6	TLRP 1206 1.0W R015 1% 75PPM 5K RL	TLRP2B10WR015FTD	Element Metal Strip Vs Metal Foil Power Rating (W) 0.25 Vs 1 TCR $\pm 75$ PPM/ $^{\circ}$ C Vs $\pm 50$ PPM/ $^{\circ}$ C See Data Sheet
4-1625826-2	TL2B R018 1% 4K RL	TL2BR018FTE	2176418-6	TLRF 1206 1.0W R018 1% 50PPM 5K RL	TLRF2B10DR018FTD	
1625826-2	TL2B R018 1%	TL2BR018F	2176418-6	TLRF 1206 1.0W R018 1% 50PPM 5K RL	TLRF2B10DR018FTD	
4-1625826-4	TL2B R022 1% 4K RL	TL2BR022FTE	2176418-8	TLRF 1206 1.0W R022 1% 50PPM 5K RL	TLRF2B10DR022FTD	Power Rating (W) - 0.25 Vs 1: Dimensions (mm) 3.2 x 1.6 x 0.635 Vs 3.15 x 1.45 x 0.55: See Datasheet
1625826-4	TL2B R022 1%	TL2BR022F	2176418-8	TLRF 1206 1.0W R022 1% 50PPM 5K RL	TLRF2B10DR022FTD	
5-1625826-4	TL2B R025 1% 4K RL	TL2BR025FTE	1-2176467-8	TLRP 1206 1.0W R025 1% 75PPM 5K RL	TLRP2B10WR025FTD	
1625826-5	TL2B R033 1%	TL2BR033F	2-2176467-0	TLRP 1206 1.0W R033 1% 75PPM 5K RL	TLRP2B10WR033FTD	Element Metal strip Vs Metal Foil: Power W 0.25 Vs 0.5: TCR PPM/ $^{\circ}$ C 75 Vs 50: Dimensions (MM) 3.2 x 1.6 x 0.635 Vs 3.05 x 1.55 x 0.55: See Data sheet
4-1625826-5	TL2B R033 1% 4K RL	TL2BR033FTE	2-2176467-0	TLRP 1206 1.0W R033 1% 75PPM 5K RL	TLRP2B10WR033FTD	
1625826-6	TL2B R047 1%	TL2BR047F	3-2176156-0	TLM 1206 0.5W R047 1% 50PPM 5K RL	TLM2BDR047FTD	
4-1625826-6	TL2B R047 1% 4K RL	TL2BR047FTE	3-2176156-0	TLM 1206 0.5W R047 1% 50PPM 5K RL	TLM2BDR047FTD	Element Metal strip Vs Metal Foil: Power W 0.25 Vs 0.5: TCR PPM/ $^{\circ}$ C 75 Vs 50: Dimensions (MM) 3.2 x 1.6 x 0.635 Vs 3.05 x 1.55 x 0.55: See Data sheet
1625826-7	TL2B R051 1% 4K RL	TL2BR051FTE	3-2176156-1	TLM 1206 0.5W R051 1% 50PPM 5K RL	TLM2BDR051FTD	
1625826-8	TL2B R068 1%	TL2BR068F	3-2176156-4	TLM 1206 0.5W R068 1% 50PPM 5K RL	TLM2BDR068FTD	
4-1625826-8	TL2B R068 1% 4K RL	TL2BR068FTE	3-2176156-4	TLM 1206 0.5W R068 1% 50PPM 5K RL	TLM2BDR068FTD	
1-1625826-1	TL2B R075 1% 4K RL	TL2BR075FTE	3-2176156-5	TLM 1206 0.5W R075 1% 50PPM 5K RL	TLM2BDR075FTD	
1-1625826-2	TL2B R082 1% 4K RL	TL2BR082FTE	3-2176156-6	TLM 1206 0.5W R082 1% 50PPM 5K RL	TLM2BDR082FTD	
4-1625826-9	TL2B R09 1% 4K RL	TL2BR09FTE	3-2176156-9	TLM 1206 0.5W R090 1% 50PPM 5K RL	TLM2BDR090FTD	
1625826-9	TL2B R09 1%	TL2BR09F	3-2176156-9	TLM 1206 0.5W R090 1% 50PPM 5K RL	TLM2BDR090FTD	
1-1625826-0	TL2B R10 1% 4K RL	TL2BR10FTE	3-2176156-8	TLM 1206 0.5W R10 1% 50PPM 5K RL	TLM2BDR100FTD	



Original Part			Replacement Part			Comparison
TCPN	Part Description	Alias	TCPN	Part Description	Alias	Key Differences
5-1625826-3	TL2B R15 1% 4K RL	TL2BR15FTE	No Replacement			N/A
2-1625827-0	TL3A R001 1% 2K RL	TL3AR001FTDG	2-1879378-8	TLR 2512 1.0W R001 1% 50PPM 2K RL	TLR3A10DR001FTDG	TCR: Unspecified Vs 50PPM/°C Dimensions (mm): 6.35 x 3.18 x 0.635 Vs 6.35 x 3.18 x 0.35 See Data sheet
2-1625827-1	TL3A R002 1% 2K RL	TL3AR002FTDG	3-1879378-0	TLR 2512 1.0W R002 1% 50PPM 2K RL	TLR3A10DR002FTDG	
2-1625827-2	TL3A R003 1% 2K RL	TL3AR003FTDG	7-2176421-6	TLRP 2512 2.0W R003 1% 75PPM 2K RL	TLRP3A20WR003FTDG	Power Rating (W) - 1 Vs 2: Dimensions (mm) 6.35 x 3.18 x 0.635 Vs 6.4 x 3.2 x 0.7: See Datasheet
2-1625827-3	TL3A R004 1% 2K RL	TL3AR004FTDG	2176421-7	TLRP 2512 2.0W R004 1% 75PPM 4K RL	TLRP3A20WR004FTE	
1625827-1	TL3A R005 1%	TL3AR005F	2176421-4	TLRP 2512 2.0W R005 1% 75PPM 4K RL	TLRP3A20WR005FTE	
4-1625827-0	TL3A R005 1% 2K RL	TL3AR005FTDG	2176421-4	TLRP 2512 2.0W R005 1% 75PPM 4K RL	TLRP3A20WR005FTE	
1625827-2	TL3A R006 1% 2K RL	TL3AR006FTDG	7-2176421-7	TLRP 2512 2.0W R006 1% 75PPM 4K RL	TLRP3A20WR006FTE	
4-1625827-3	TL3A R01 1% 2K RL	TL3AR01FTDG	2176421-1	TLRP 2512 2.0W R010 1% 75PPM 4K RL	TLRP3A20WR010FTE	
1625827-5	TL3A R01 1%	TL3AR01F	2176421-1	TLRP 2512 2.0W R010 1% 75PPM 4K RL	TLRP3A20WR010FTE	
1625827-3	TL3A R015 1%	TL3AR015F	2176421-8	TLRP 2512 2.0W R015 1% 75PPM 4K RL	TLRP3A20WR015FTE	
4-1625827-1	TL3A R015 1% 2K RL	TL3AR015FTDG	2176421-8	TLRP 2512 2.0W R015 1% 75PPM 4K RL	TLRP3A20WR015FTE	
4-1625827-2	TL3A R018 1% 2K RL	TL3AR018FTDG	2176421-9	TLRP 2512 2.0W R018 1% 75PPM 4K RL	TLRP3A20WR018FTE	
1625827-4	TL3A R018 1%	TL3AR018F	2176421-9	TLRP 2512 2.0W R018 1% 75PPM 4K RL	TLRP3A20WR018FTE	
5-1625827-1	TL3A R02 1% 2K RL	TL3AR02FTDG	2176421-2	TLRP 2512 2.0W R020 1% 75PPM 4K RL	TLRP3A20WR020FTE	
4-1625827-4	TL3A R022 1% 2K RL	TL3AR022FTDG	8-2176421-0	TLRP 2512 2.0W R022 1% 75PPM 4K RL	TLRP3A20WR022FTE	
1625827-6	TL3A R022 1%	TL3AR022F	8-2176421-0	TLRP 2512 2.0W R022 1% 75PPM 4K RL	TLRP3A20WR022FTE	
1625827-7	TL3A R025 1% 2K RL	TL3AR025FTDG	8-2176421-1	TLRP 2512 2.0W R025 1% 75PPM 4K RL	TLRP3A20WR025FTE	
1-1625827-5	TL3A R027 1% 2K RL	TL3AR027FTDG	2-2176158-4	TLM 2512 1.0W R027 1% 50PPM 4K RL	TLM3ADR027FTE	Element Metal strip Vs Metal Foil: TCR PPM/C 75 Vs 50: Dimensions (MM) 6.35 x 3.18 x 0.635 Vs 6.30 x 3.15 x 0.55: See Data sheet
4-1625827-5	TL3A R033 1% 2K RL	TL3AR033FTDG	8-2176421-2	TLRP 2512 2.0W R033 1% 75PPM 4K RL	TLRP3A20WR033FTE	Power Rating (W) - 1 Vs 2: Dimensions (mm) 6.35 x 3.18 x 0.635 Vs 6.4 x 3.2 x 0.7: See Datasheet
1625827-8	TL3A R033 1%	TL3AR033F	8-2176421-2	TLRP 2512 2.0W R033 1% 75PPM 4K RL	TLRP3A20WR033FTE	
1-1625827-6	TL3A R039 1% 2K RL	TL3AR039FTDG	8-2176421-4	TLRP 2512 2.0W R039 1% 75PPM 4K RL	TLRP3A20WR039FTE	
1625827-9	TL3A R047 1%	TL3AR047F	8-2176421-6	TLRP 2512 2.0W R047 1% 75PPM 4K RL	TLRP3A20WR047FTE	
4-1625827-6	TL3A R047 1% 2K RL	TL3AR047FTDG	8-2176421-6	TLRP 2512 2.0W R047 1% 75PPM 4K RL	TLRP3A20WR047FTE	

Original Part			Replacement Part			Comparison
TCPN	Part Description	Alias	TCPN	Part Description	Alias	Key Differences
4-1625827-7	TL3A R051 1% 2K RL	TL3AR051FTDG	3-2176158-1	TLM 2512 1.0W R051 1% 50PPM 4K RL	TLM3ADR051FTE	Element Metal strip Vs Metal Foil: TCR PPM/C 75 Vs 50: Dimensions (MM) 6.35 x 3.18 x 0.635 Vs 6.30 x 3.15 x 0.55: See Data sheet
1-1625827-0	TL3A R051 1%	TL3AR051F	3-2176158-1	TLM 2512 1.0W R051 1% 50PPM 4K RL	TLM3ADR051FTE	
5-1625827-0	TL3A R056 1% 2K RL	TL3AR056FTDG	3-2176158-2	TLM 2512 1.0W R056 1% 50PPM 4K RL	TLM3ADR056FTE	
1-1625827-1	TL3A R068 1%	TL3AR068F	8-2176421-9	TLRP 2512 2.0W R068 1% 75PPM 4K RL	TLRP3A20WR068FTE	Power Rating (W) - 1 Vs 2: Dimensions (mm) 6.35 x 3.18 x 0.635 Vs 6.4 x 3.2 x 0.7: See Datasheet
4-1625827-8	TL3A R068 1% 2K RL	TL3AR068FTDG	8-2176421-9	TLRP 2512 2.0W R068 1% 75PPM 4K RL	TLRP3A20WR068FTE	
1-1625827-2	TL3A R075 1%	TL3AR075F	1-2176421-0	TLRP 2512 2.0W R075 1% 75PPM 4K RL	TLRP3A20WR075FTE	
4-1625827-9	TL3A R075 1% 2K RL	TL3AR075FTDG	1-2176421-0	TLRP 2512 2.0W R075 1% 75PPM 4K RL	TLRP3A20WR075FTE	
1-1625827-3	TL3A R082 1% 2K RL	TL3AR082FTDG	9-2176421-2	TLRP 2512 2.0W R082 1% 75PPM 4K RL	TLRP3A20WR082FTE	
1-1625827-4	TL3A R10 1% 2K RL	TL3AR10FTDG	1-2176421-1	TLRP 2512 2.0W R100 1% 75PPM 4K RL	TLRP3A20WR100FTE	
1-1625827-7	TL3A R15 1% 2K RL	TL3AR15FTDG	9-2176421-6	TLRP 2512 2.0W R150 1% 75PPM 4K RL	TLRP3A20WR150FTE	
2-1625827-4	TL3A R22 1% 2K RL	TL3AR22FTDG	No Replacement			N/A

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