有关敝公司产品的注意事项

请务必在使用敝公司产品之前阅读。

⚠ 注 意

产品目录中的记载内容

本产品目录中所记载的内容为2019年10月的内容。因产品改良等原因，可能会不经预告而变更其记载内容，或是停止供应本产品目录中所记载的产品。所以，请务必在使用前先确认最新的产品信息。

未按照本产品目录中所记载的内容或交货规格说明书使用敝公司产品，即便其致使用设备发生损害、不良情况等时，敝公司也不承担任何责任，敬请知悉。

签署交货规格说明书

就本产品目录中所记载产品的产品规格等相关内容，敝公司备有交货规格说明书，详情请向敝公司咨询。在使用敝公司产品前请务必就交货规格说明书之内容确认并批准之。

实装前的事前评估

使用敝公司产品时，请务必事先安装到使用设备之后，在实际使用的环境下进行评估和确认。

用途的限定

1. 可以使用的设备

本产品目录中所记载的产品预设为使用于一般电子设备 [音像设备、办公自动化设备、家电产品、办公设备、信息通讯设备 (手机、电脑等)] 以及面向本产品目录或是交货规格说明书中另行注明的设备的通用性、标准性用途。

另外，面向汽车用电子设备、电信基础设施 / 工业设备、医疗设备 (国际 (GHTF) 第一类、第二类、第三类) 方面的应用，敝公司也备有预设的产品线，请参考本产品目录或是交货规格说明书的内容，使用相对应的产品。

2. 需要另行确认的设备

若考虑将本产品目录中所记载的产品使用于当产品发生故障、品质不良，或是由此引起的运转失常而可能会危及生命、身体或是财产，以及有可能给社会造成深刻影响的以下设备 (不包括本产品目录或是交货规格说明书中另行注明可以使用设备) 等时，请务必事先向敝公司咨询。

(1) 运输用设备 (汽车驱动控制设备、火车控制设备、船舶控制设备等)
(2) 交通信号设备
(3) 防灾 / 保安设备
(4) 医疗设备 (国际 (GHTF) 第三类)
(5) 高公共性信息通讯设备 / 信息处理设备 (电话交换机、电话 / 无线 / 广播电视基站等)
(6) 其他与上述设备有同等品质与可靠性要求的设备

3. 禁止使用的设备

请勿将敝公司产品使用于对安全性和可靠性有着极高要求的以下设备。

(1) 航天设备 (人工卫星、火箭等)
(2) 航空设备 (注释1)
(3) 医疗设备 (国际 (GHTF) 第四类)、植体 (体内植入型) 医疗设备 (注释2)
(4) 发电控制设备 (面向核能 / 水力 / 火力发电厂等的设备)
(5) 海底设备 (海底中继设备、海中的作业设备等)
(6) 军事设备
(7) 其他与上述设备有同等品质与可靠性要求的设备

注释 1 ：仅限于对航空设备的安全运行不产生直接干扰的设备 [机内娱乐设备、机内照明设备、电动座椅、餐饮设备等]，在满足敝公司另行指定的相关条件时，亦可将敝公司产品用于以上用途。在贵公司考虑将敝公司的产品用于以上用途时，请务必事先向敝公司咨询相关的信息。

注释 2 ：包括注入人体内的部分和与此相连接的体外部分。

4. 责任的限制

未经敝公司的事先书面同意，把本产品目录中所记载的产品使用于非敝公司预设用途的设备、前述需要向敝公司咨询的设备或敝公司禁止使用的设备，从而给客户或第三方造成损害的，敝公司不承担任何责任，敬请知悉。

安全设计

需将敝公司的产品使用于对安全性和可靠性要求较高的设备、电路上时，请进行充分的安全性评估和可靠性评估。另外，请通过设置保护电路、保护装置的系统，设置冗余电路不会被单一故障影响安全性的系统等失效导向安全 (fail-safe) 设计，确保充分的安全性。

有关知识产权

本产品目录中所记载的信息是用于说明相关产品的典型操作以及相关应用。此类信息的使用不代表对于敝公司以及第三方的知识产权以及其他权利的使用许可或是不侵权保证。

保证范围

敝公司产品的保证范围仅限于已经交付的敝公司产品本身，由敝公司产品的故障或不良情况所诱发的损害，敝公司不承担任何责任，敬请知悉。但是，以书面形式另行签署了交易基本合同书、品质保证协定书等时，敝公司将根据该合同的条件提供保证。

正规销售渠道

本产品目录中所记载的内容适用于从敝公司营业所、销售子公司、销售代理店 (即“正规销售渠道”) 购买的敝公司产品，并不适用于从其他渠道购买的敝公司产品，敬请知悉。

出口时的注意事项

本产品目录中所记载的部分产品在出口时须事先确认《外汇和对外贸易法》以及美国在出口管理方面的相关法规，并办理相关手续。如有不明之处，请向敝公司咨询。

绕线型片状功率电感器(BR 系列)



回流焊

■型号标示法

※使用温度范围: -40～+105℃ (包含产品本身发热)

B R	△ L	2 5 1 8	T	2 R 2	M	△ △ △
①	②	③	④	⑤	⑥	⑦

△=空格

①类型

代码	类型
BR	绕线型片状功率电感器

②特性

代码	特性
FL	超薄
△L	
HL	
△C	大电流

③尺寸 (L × W)

代码	外型 (inch)	尺寸 (L×W) [mm]
1608	1608(0603)	1.6×0.8
2012	2012(0805)	2.0×1.25
2016	2016(0806)	2.0×1.6
2518	2518(1007)	2.5×1.8
3225	3225(1210)	3.2×2.5

④包装

代码	包装
T	卷盘带装

⑤标称电感值

代码 (例)	标称电感值 [μH]
R20	0.2
1R0	1.0
100	10
101	100

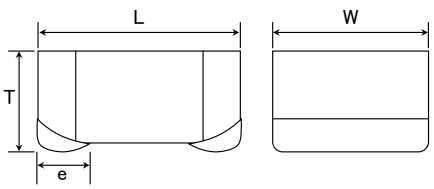
※R=小数点

⑥电感量公差

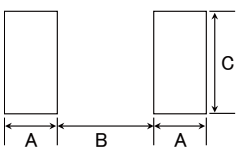
代码	电感量公差
K	±10%
M	±20%

⑦本公司管理记号

■标准外型尺寸 / 标准数量



推荐焊盘图案
实装上的注意
·请确认实装状态后使用。
·本产品焊法限定为回流焊法。



Type	A	B	C
1608	0.55	0.70	1.00
2012	0.60	1.00	1.45
2016	0.60	1.00	1.80
2518	0.60	1.50	2.00
3225	0.85	1.70	2.70

单位: mm

Type	L	W	T	e	标准数量[pcs]	
					纸带	压纹带
BR L1608	1.6±0.2 (0.063±0.008)	0.8±0.2 (0.031±0.008)	0.7 max (0.028 max)	0.45±0.15 (0.016±0.006)	—	3000
BR C1608	1.6±0.2 (0.063±0.008)	0.8±0.2 (0.031±0.008)	0.8±0.2 (0.031±0.008)	0.45±0.15 (0.016±0.006)	—	3000
BR L2012	2.0±0.2 (0.079±0.008)	1.25±0.2 (0.049±0.008)	1.0 max (0.040 max)	0.5±0.2 (0.020±0.008)	—	3000
BR C2012	2.0±0.2 (0.079±0.008)	1.25±0.2 (0.049±0.008)	1.4 max (0.056 max)	0.5±0.2 (0.020±0.008)	—	2000
BR C2016	2.0±0.2 (0.079±0.008)	1.6±0.2 (0.063±0.008)	1.6±0.2 (0.063±0.008)	0.5±0.2 (0.020±0.008)	—	2000
BRFL2518	2.5±0.2 (0.098±0.008)	1.8±0.2 (0.071±0.008)	1.0 max (0.040 max)	0.5±0.2 (0.020±0.008)	—	3000
BR L2518	2.5±0.2 (0.098±0.008)	1.8±0.2 (0.071±0.008)	1.2 max (0.048 max)	0.5±0.2 (0.020±0.008)	—	3000
BRHL2518	2.5±0.2 (0.098±0.008)	1.8±0.2 (0.071±0.008)	1.5 max (0.060 max)	0.5±0.2 (0.020±0.008)	—	2000
BR C2518	2.5±0.2 (0.098±0.008)	1.8±0.2 (0.071±0.008)	1.8±0.2 (0.071±0.008)	0.5±0.2 (0.020±0.008)	—	2000
BR L3225	3.2±0.2 (0.126±0.008)	2.5±0.2 (0.098±0.008)	1.7 max (0.068 max)	0.75±0.2 (0.03±0.008)	—	2000

单位：mm (inch)

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另外，有关各产品的详细信息(特性图、可靠性信息、使用时的注意事项等)，请参阅敝公司网站(http://www.ty-top.com/)。

■型号一览

●1608(0603)型

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BR L1608T1R0M	RoHS	1.0	±20%	700	0.230	510	650	1.0
BR L1608T1R5M	RoHS	1.5	±20%	600	0.280	440	590	1.0
BR L1608T2R2M	RoHS	2.2	±20%	400	0.400	360	500	1.0
BR L1608T3R3M	RoHS	3.3	±20%	300	0.650	290	390	1.0
BR L1608T4R7M	RoHS	4.7	±20%	150	1.00	240	310	1.0
BR L1608T6R8M	RoHS	6.8	±20%	100	1.64	200	250	1.0
BR L1608T100M	RoHS	10	±20%	45	2.00	170	220	1.0
BR L1608T150M	RoHS	15	±20%	32	2.56	150	200	1.0

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BR C1608TR43M 6	RoHS	0.43	±20%	740	0.082	1,400	1,100	6.0
BR C1608TR50M 6	RoHS	0.50	±20%	710	0.090	1,200	1,050	6.0
BR C1608TR60M 6	RoHS	0.60	±20%	630	0.099	1,100	940	6.0
BR C1608TR72M 6	RoHS	0.72	±20%	600	0.144	1,000	810	6.0
BR C1608TR82M 6	RoHS	0.82	±20%	560	0.176	950	730	6.0
BR C1608T1R0M 6	RoHS	1.0	±20%	550	0.188	890	680	6.0

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BR C1608TR20M	RoHS	0.20	±20%	400	0.060	1,750	980	7.96
BR C1608TR35M	RoHS	0.35	±20%	300	0.080	1,400	810	7.96
BR C1608TR45M	RoHS	0.45	±20%	200	0.090	1,250	800	7.96
BR C1608TR56M	RoHS	0.56	±20%	170	0.095	1,150	760	7.96
BR C1608TR77M	RoHS	0.77	±20%	150	0.110	1,000	660	7.96
BR C1608T1R0M	RoHS	1.0	±20%	140	0.180	850	520	7.96
BR C1608T1R5M	RoHS	1.5	±20%	120	0.300	700	410	7.96
BR C1608T2R2M	RoHS	2.2	±20%	100	0.550	550	280	7.96

●2012(0805)型

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BR L2012TR47M 6	RoHS	0.47	±20%	500	0.048	1,500	1,900	6.0
BR L2012T1R0M 6	RoHS	1.0	±20%	400	0.108	1,050	1,230	6.0
BR L2012T2R2MD6	RoHS	2.2	±20%	250	0.184	680	950	6.0

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BR L2012TR47M	RoHS	0.47	±20%	350	0.090	1,100	1,050	7.96
BR L2012T1R0M	RoHS	1.0	±20%	300	0.135	850	850	7.96
BR L2012T1R5M	RoHS	1.5	±20%	250	0.180	700	750	7.96
BR L2012T2R2M	RoHS	2.2	±20%	200	0.300	600	550	7.96
BR L2012T3R3M	RoHS	3.3	±20%	190	0.500	490	440	7.96
BR L2012T4R7M	RoHS	4.7	±20%	150	0.550	340	400	7.96
BR L2012T6R8M	RoHS	6.8	±20%	60	0.750	290	350	7.96
BR L2012T100M	RoHS	10	±20%	30	0.850	270	330	2.52
BR L2012T150M	RoHS	15	±20%	15	1.00	220	300	2.52
BR L2012T220M	RoHS	22	±20%	13	1.30	190	270	2.52
BR L2012T330M	RoHS	33	±20%	8.0	2.00	150	220	2.52
BR L2012T470M	RoHS	47	±20%	7.0	3.50	125	160	2.52
BR L2012T680M	RoHS	68	±20%	6.5	5.80	100	110	2.52
BR L2012T101M	RoHS	100	±20%	6.0	7.70	85	85	0.796

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BR C2012T1R0M	RoHS	1.0	±20%	490	0.060	1,500	1,400	1.0
BR C2012T1R5MD	RoHS	1.5	±20%	390	0.090	1,200	1,100	1.0
BR C2012T2R2MD	RoHS	2.2	±20%	350	0.110	1,100	1,000	1.0
BR C2012T3R3MD	RoHS	3.3	±20%	300	0.170	800	870	1.0
BR C2012T4R7MD	RoHS	4.7	±20%	250	0.265	700	600	1.0

※) 直流重叠允许电流 (Idc1) 为直流重叠带来的电感值下降, 范围在30%以内的直流电感值 (at 20℃)
※) 温度上升允许电流 (Idc2) 为温度上升到40℃时的直流电感值 (at 20℃)
※) 额定电流值: Idc1或Idc2中低的一方的直流电流值当作额定电流值。

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■型号一览

●2016(0806)型

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BR C2016T1R0M	RoHS	1.0	±20%	450	0.085	1,350	1,100	0.10
BR C2016T1R5M	RoHS	1.5	±20%	370	0.150	1,100	820	0.10
BR C2016T2R2M	RoHS	2.2	±20%	250	0.180	910	760	0.10
BR C2016T3R3M	RoHS	3.3	±20%	140	0.220	740	680	0.10
BR C2016T4R7M	RoHS	4.7	±20%	78	0.270	660	610	0.10
BR C2016T6R8M	RoHS	6.8	±20%	39	0.330	550	560	0.10
BR C2016T100□	RoHS	10	±10%, ±20%	35	0.400	450	520	0.10
BR C2016T150□	RoHS	15	±10%, ±20%	28	0.600	400	410	0.10
BR C2016T220□	RoHS	22	±10%, ±20%	24	1.00	310	310	0.10
BR C2016T330□	RoHS	33	±10%, ±20%	13	1.70	270	240	0.10
BR C2016T470□	RoHS	47	±10%, ±20%	11	2.20	210	210	0.10
BR C2016T680□	RoHS	68	±10%, ±20%	8	2.80	200	190	0.10
BR C2016T101□	RoHS	100	±10%, ±20%	7	3.40	140	170	0.10

●2518(1007)型

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BRFL2518T1R0M	RoHS	1.0	±20%	130	0.090	1,200	1,200	1.0
BRFL2518T1R5M	RoHS	1.5	±20%	100	0.110	1,100	1,000	1.0
BRFL2518T2R2M	RoHS	2.2	±20%	80	0.130	850	950	1.0
BRFL2518T3R3M	RoHS	3.3	±20%	70	0.220	700	700	1.0
BRFL2518T4R7M	RoHS	4.7	±20%	60	0.330	650	650	1.0

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BR L2518T1R0M	RoHS	1.0	±20%	130	0.080	1,600	1,000	7.96
BR L2518T1R5M	RoHS	1.5	±20%	100	0.100	1,200	920	7.96
BR L2518T2R2M	RoHS	2.2	±20%	80	0.135	1,000	850	7.96
BR L2518T3R3M	RoHS	3.3	±20%	70	0.300	800	580	7.96
BR L2518T4R7M	RoHS	4.7	±20%	60	0.400	700	470	7.96

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BRHL2518T1R0M	RoHS	1.0	±20%	400	0.055	2,000	1,400	1.0
BRHL2518T1R5M	RoHS	1.5	±20%	350	0.085	1,700	1,100	1.0
BRHL2518T2R2M	RoHS	2.2	±20%	300	0.115	1,500	1,000	1.0
BRHL2518T3R3MD	RoHS	3.3	±20%	200	0.165	1,200	800	1.0
BRHL2518T4R7MD	RoHS	4.7	±20%	150	0.245	1,100	750	1.0

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BR C2518T1R0M	RoHS	1.0	±20%	280	0.050	2,550	1,650	1.0
BR C2518T1R5M	RoHS	1.5	±20%	230	0.080	2,100	1,300	1.0
BR C2518T2R2M	RoHS	2.2	±20%	200	0.120	1,800	1,000	1.0
BR C2518T3R3M	RoHS	3.3	±20%	150	0.175	1,450	860	1.0
BR C2518T4R7M	RoHS	4.7	±20%	100	0.230	1,250	750	1.0
BR C2518T6R8M	RoHS	6.8	±20%	45	0.280	1,050	680	1.0
BR C2518T100□	RoHS	10	±10%, ±20%	20	0.350	890	610	1.0
BR C2518T150□	RoHS	15	±10%, ±20%	13	0.430	760	550	1.0
BR C2518T220□	RoHS	22	±10%, ±20%	10	0.560	640	490	1.0
BR C2518T330□	RoHS	33	±10%, ±20%	8	0.850	560	390	1.0
BR C2518T470□	RoHS	47	±10%, ±20%	6.5	1.45	410	300	1.0
BR C2518T680□	RoHS	68	±10%, ±20%	5.5	2.40	340	230	1.0
BR C2518T101□	RoHS	100	±10%, ±20%	4.5	3.60	300	190	1.0

(注) 型号中的[]中标有电感值代码 (M或K)。

※) 直流重叠允许电流 (Idc1) 为直流重叠带来的电感值下降, 范围在30%以内的直流电感值 (at 20℃)
※) 温度上升允许电流 (Idc2) 为温度上升到40℃时的直流电感值 (at 20℃)
※) 额定电流值: Idc1或Idc2中低的一方的直流电流值当作额定电流值。

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■型号一览

●3225(1210)型

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±30%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BR L3225TR27M	RoHS	0.27	±20%	390	0.022	4,500	2,850	7.96
BR L3225TR36M	RoHS	0.36	±20%	350	0.025	4,300	2,750	7.96
BR L3225TR51M	RoHS	0.51	±20%	270	0.029	3,600	2,550	7.96

型号	EHS	标称电感值 [μH]	电感量公差	自共振频率 [MHz] (min.)	直流电阻 [Ω] (±20%)	额定电流 ※) [mA]		测试频率 [MHz]
						直流重叠许容电流 Idc1	温度上升许容电流 Idc2	
BR L3225T1R0M	RoHS	1.0	±20%	220	0.043	2,400	2,200	0.1
BR L3225T1R5M	RoHS	1.5	±20%	170	0.045	2,200	1,750	0.1
BR L3225T2R2M	RoHS	2.2	±20%	150	0.065	1,850	1,600	0.1
BR L3225T3R3M	RoHS	3.3	±20%	140	0.120	1,450	1,200	0.1
BR L3225T4R7M	RoHS	4.7	±20%	120	0.180	1,300	1,000	0.1
BR L3225T6R8M	RoHS	6.8	±20%	90	0.270	1,050	770	0.1
BR L3225T100□	RoHS	10	±10%, ±20%	70	0.350	900	700	0.1
BR L3225T150□	RoHS	15	±10%, ±20%	20	0.570	700	530	0.1
BR L3225T220□	RoHS	22	±10%, ±20%	13	0.690	550	470	0.1
BR L3225T330□	RoHS	33	±10%, ±20%	9	0.840	470	420	0.1
BR L3225T470□	RoHS	47	±10%, ±20%	7	1.00	420	390	0.1
BR L3225T680□	RoHS	68	±10%, ±20%	6	1.40	330	300	0.1
BR L3225T101□	RoHS	100	±10%, ±20%	5	2.50	270	250	0.1

(注) 型号中的[]中标有电感值代码 (M或K) 。

※) 直流重叠允许电流 (Idc1) 为直流重叠带来的电感值下降, 范围在30%以内的直流电感值 (at 20℃)
※) 温度上升允许电流 (Idc2) 为温度上升到40℃时的直流电感值 (at 20℃)
※) 额定电流值: Idc1或Idc2中低的一方的直流电流值当作额定电流值。

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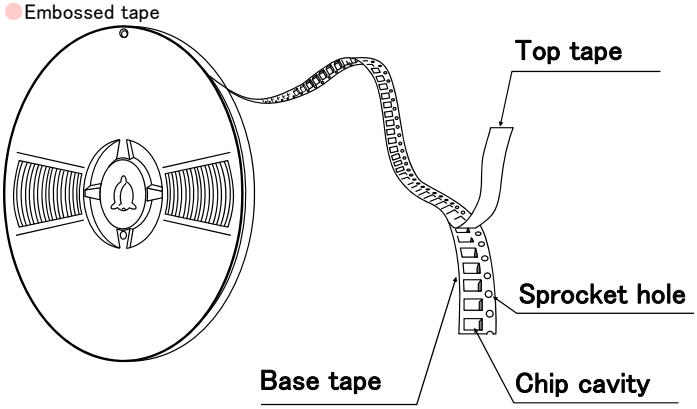
■PACKAGING

①Minimum Quantity

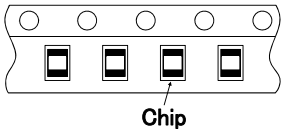
Type	Standard Quantity [pcs]	
	Paper Tape	Embossed Tape
BR C1608	—	3,000
BR L1608	—	3,000
BR L2012	—	3,000
BR C2012	—	2,000
BR C2016	—	2,000
BR C2518	—	2,000
BRHL2518	—	2,000
BR L2518	—	3,000
BRFL2518	—	3,000
BR L3225	—	2,000

②Tape Material

●Embossed tape

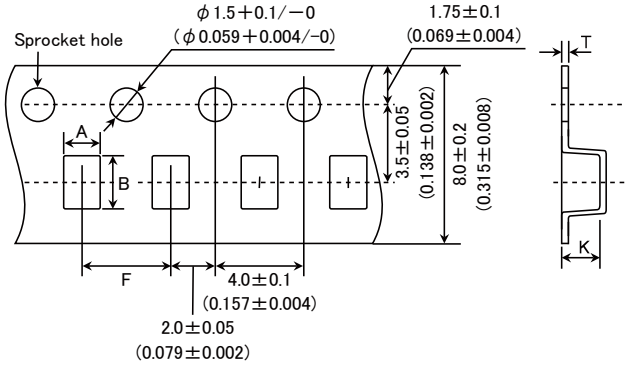


Chip Filled



③Taping dimensions

●Embossed Tape 8mm wide (0.315 inches wide)

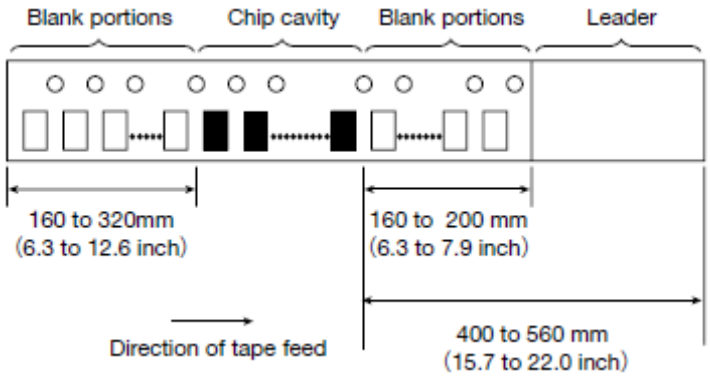


▸ This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our specification.
For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our Web site (http://www.ty-top.com/) .

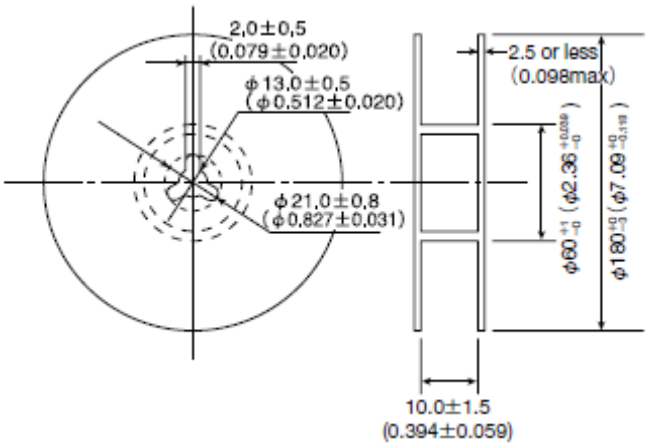
Type	Chip cavity		Insertion pitch	Tape thickness	
	A	B	F	T	K
BR L1608	1.1±0.1 (0.043±0.004)	1.9±0.1 (0.075±0.004)	4.0±0.1 (0.157±0.004)	0.2±0.05 (0.008±0.002)	0.9 max (0.035 max)
BR C1608	1.1±0.1 (0.043±0.004)	1.9±0.1 (0.075±0.004)	4.0±0.1 (0.157±0.004)	0.25±0.05 (0.010±0.002)	1.2 max (0.047 max)
BR L2012	1.45±0.1 (0.057±0.004)	2.2±0.1 (0.087±0.004)	4.0±0.1 (0.157±0.004)	0.25±0.05 (0.010±0.002)	1.2 max (0.047 max)
BR C2012	1.45±0.1 (0.057±0.004)	2.37±0.1 (0.093±0.004)	4.0±0.1 (0.157±0.004)	0.25±0.05 (0.010±0.002)	1.59 max (0.063 max)
BR C2016	1.75±0.1 (0.069±0.004)	2.1±0.1 (0.083±0.004)	4.0±0.1 (0.157±0.004)	0.3±0.05 (0.012±0.002)	1.9 max (0.075 max)
BRFL2518	2.3±0.1 (0.091±0.004)	2.8±0.1 (0.110±0.004)	4.0±0.1 (0.157±0.004)	0.25±0.05 (0.010±0.002)	1.3 max (0.051 max)
BR L2518	2.3±0.1 (0.091±0.004)	2.8±0.1 (0.110±0.004)	4.0±0.1 (0.157±0.004)	0.3±0.05 (0.012±0.002)	1.45 max (0.057 max)
BRHL2518	2.1±0.1 (0.083±0.004)	2.8±0.1 (0.110±0.004)	4.0±0.1 (0.157±0.004)	0.3±0.05 (0.012±0.002)	1.7 max (0.067 max)
BR C2518	2.15±0.1 (0.085±0.004)	2.7±0.1 (0.106±0.004)	4.0±0.1 (0.157±0.004)	0.3±0.05 (0.012±0.002)	2.2 max (0.087 max)
BR L3225	2.8±0.1 (0.110±0.004)	3.5±0.1 (0.138±0.004)	4.0±0.1 (0.157±0.004)	0.25±0.05 (0.010±0.002)	1.9 max (0.075 max)

Unit : mm (inch)

④Leader and Blank portion

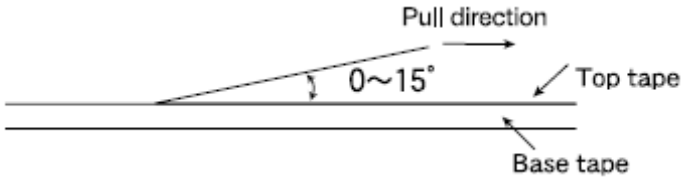


⑤Reel size



⑥Top Tape Strength

The top tape requires a peel-off force of 0.2 to 0.7N in the direction of the arrow as illustrated below.



WIRE-WOUND CHIP POWER INDUCTORS (BR SERIES)

■RELIABILITY DATA

1. Operating Temperature Range		
Specified Value	BR series	−40～＋105℃
Test Methods and Remarks	Including self-generated heat	

2. Storage Temperature Range (after soldering)		
Specified Value	BR series	−40～＋85℃
Test Methods and Remarks	Please refer the term of "7.Storage conditions" in Precautions.	

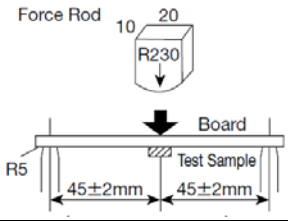
3. Rated current		
Specified Value	BR series	Within the specified tolerance

4. Inductance		
Specified Value	BR series	Within the specified tolerance
Test Methods and Remarks	Measuring equipment : LCR Meter (HP 4285A or equivalent) Measuring frequency : Specified frequency	

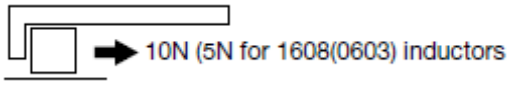
5. DC Resistance		
Specified Value	BR series	Within the specified tolerance
Test Methods and Remarks	Measuring equipment : DC ohmmeter (HIOKI 3227 or equivalent)	

6. Self resonance frequency		
Specified Value	BR series	Within the specified tolerance
Test Methods and Remarks	Measuring equipment : Impedance analyzer/material analyzer (HP4291A or equivalent HP4191A, 4192A or equivalent)	

7. Temperature characteristic		
Specified Value	BR series	Inductance change : Within ±15%
Test Methods and Remarks	Based on the inductance at 20℃ and Measured at the ambient of −40℃～＋85℃.	

8. Resistance to the bendability		
Specified Value	BR series	No damage.
Test Methods and Remarks	The given sample is soldered on the board and then the back side of the board is pushed until it bends 2mm like the figure. Dimension of the board : 100×40×1.0mm (0.8mm thickness for 1608(0603) inductors) Material of the board : Glass epoxy-resin Thickness of soldering paste : 0.12mm 	

9. Body strength		
Specified Value	BR series	No damage.
Test Methods and Remarks	2012～ Applied orce 10N Duration : 10sec. 1608 size Applied force : 5N Duration : 10sec.	

10. Adhesion of terminal electrodes		
Specified Value	BR series	Not to removed from the board.
Test Methods and Remarks	The given sample is soldered to the board and then it is kept for 5sec with 10N stress (5N for 1608(0603) inductors) like the figure.  	

11. Resistance to vibration		
Specified Value	BR series	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	The given sample is soldered to the board and then it is tested depending on the conditions of the following table.	

Vibration Frequency	10～55Hz	
Total Amplitude	1.5mm (May not exceed acceleration 196m/s2)	
Sweeping Method	10Hz to 55Hz to 10Hz for 1min.	
Time	X	For 2 hours on each X, Y, and Z axis.
	Y	
	Z	

Recovery : At least 2hrs of recovery under the standard condition after the test, followed by the measurement within 48hrs.

12. Solderability		
Specified Value	BR series	At least 90% area of the electrodes is covered by new solder.
Test Methods and Remarks	Test Method and Remarks】 The given sample is dipped into the flux and then it is tested depending on the conditions of the following table. Flux : Methanol solution containing rosin 25%.	

Solder Temperature	245±5℃
Time	5±0.5 sec.

13. Resistance to soldering heat		
Specified Value	BR series	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	3 times reflow having the temperature profile of 5sec of 260+0/−5 ℃ and 40sec of more than 230℃. Test board thickness : 1.0mm Test board material : Glass epoxy-resin Recovery : At least 2hrs of recovery under the standard condition after the test, followed by the measurement within 48hrs.	

14. Thermal shock		
Specified Value	BR series	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	The given sample is soldered to the board and then its Inductance is measured after 100cycles of the following conditions.	

Conditions of 1 cycle		
Step	Temperature (℃)	Duration (min)
1	−40±3	30±3
2	Room temperature	Within 3
3	+85±2	30±3
4	Room temperature	Within 3

Recovery : At least 2hrs of recovery under the standard condition after the test, followed by the measurement within 48 hrs.

15. Damp heat		
Specified Value	BR series	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	The given sample is soldered to the board and then it is kept at the following conditions. Temperature: 60±2℃ Humidity: 90～95%RH Time: 1000 hours. Recovery : At least 2hrs of recovery under the standard condition after the test, followed by the measurement within 48 hrs.	

16. Loading under damp heat		
Specified Value	BR series	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	The given sample is soldered to the board and then it is kept at the following conditions. Temperature: 60±2℃ Humidity: 90～95%RH Applied current: Rated current Time: 1000hours. Recovery : At least 2hrs of recovery under the standard condition after the test, followed by the measurement within 48 hrs.	

17. Low temperature life test		
Specified Value	BR series	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	The given sample is soldered to the board and then it is kept at the following conditions. Temperature: −40±2℃ Duration: 1000hours Recovery : At least 2hrs of recovery under the standard condition after the test, followed by the measurement within 48 hrs.	

18. High temperature life test		
Specified Value	BR series	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	The given sample is soldered to the board and then it is kept at the following conditions. Temperature: 85±2℃ Duration: 1000hours Recovery : At least 2hrs of recovery under the standard condition after the test, followed by the measurement within 48 hrs.	

19. Standard conditions		
Specified Value	BR series	Standard test condition : Unless otherwise specified, temperature is 20±15℃ and 65±20%of relative humidity. When there is any question concerning measurement result: In order to provide correlation data, the test shall be condition of 20±2℃ of temperature, 65±5% relative humidity. Inductance is in accordance with our measured value.

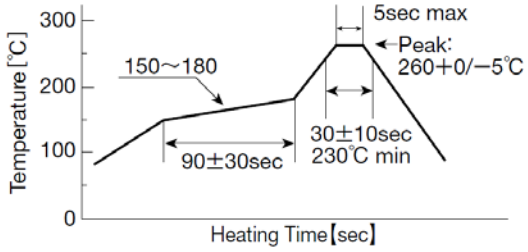
WIRE-WOUND CHIP POWER INDUCTORS (BR SERIES)

■PRECAUTIONS

1. Circuit Design	
Precautions	◆Operating Ambient The products are premised on the usage for the general equipments like the office supply equipment, the telecommunications systems, the measuring equipment, the household equipment and so on. Please ask to TAIYO YUDEN's sales person in advance, if you need to apply them to the equipments or the systems which might have any influences for the human body, the property, like the traffic systems, the safety equipment, the aerospace systems, the nuclear control systems, the medical equipment and soon.

2. PCB Design	
Precautions	◆Land pattern design 1. Please refer to a recommended land pattern.
Technical considerations	◆Land pattern design Surface Mounting 1. The conditions of the picking and placing should be checked in advance. 2. The products are only for reflow soldering.

3. Considerations for automatic placement	
Precautions	◆Adjustment of mounting machine 1. Excessive physical impact should not be imposed on the products for picking and placing onto the PC boards. 2. Mounting and soldering conditions should be checked in advance.
Technical considerations	◆Adjustment of mounting machine The products might be broken if too much stress is given for the picking and placing.

4. Soldering	
Precautions	◆Reflow soldering 1. Please apply our recommended soldering conditions on the specification as much as possible. 2. The products are only for reflow soldering. 3. Please do not give any stress to a product until it returns in room temperature after reflow soldering. ◆Recommended conditions for using a soldering iron. (Excluding 1608 type) Touch a soldering iron to the land pattern not to the product directly. The temperature of a soldering iron is less than 350degC. The soldering is for 3 seconds or less.
Technical considerations	◆Reflow soldering 1. The product might break or might make the tombstoning, if the soldering conditions are too far from our recommended conditions. 

5. Cleaning	
Precautions	◆Cleaning conditions 1. Please don't wash by the ultra-sonic waves.
Technical considerations	◆Cleaning conditions 1. Washing by the ultra-sonic waves might break the product.

6. Handling	
Precautions	◆Handling 1. Keep the product away from any magnets. ◆Cutting the PC boards 1. Please don't give any stress of the bending or the twisting for the cutting process of PC boards. 2. Please don't give any shock and stress to the products in transportation. ◆Mechanical considerations 1. Please don't give too much shock to the product. 2. Please don't give any shock and stress to the products in transportation. ◆The stress for picking and placing 1. Please don't give any shock into an exposed ferrite core. ◆Packing 1. Please don't pile the packing boxes up as much as possible.
Technical considerations	◆Handling 1. There is a case that a characteristic varies with magnetic influence. ◆Cutting the PC boards 1. Please don't give the bending stress or the twisting stress to the products because they might break in such cases. ◆Mechanical considerations 1. The mechanical shock might break the products. 2. The products might break depending on the handling in transportation. ◆Pick-up pressure 1. The electrical characteristics of the products might be shifted by too much physical shock and stress. ◆Packing 1. The products and the tape might break, if the packing boxes are piled up.

7. Storage conditions	
Precautions	◆Storage 1. To maintain the solderability of terminal electrodes and to keep the packing material in good condition, temperature and humidity in the storage area should be controlled. ・ Recommended conditions Ambient temperature : 0～40℃ Humidity : Below 70% RH ・ The ambient temperature must be kept below 30℃. Even under ideal storage conditions, solderability of products electrodes may decrease as time passes. For this reason, product should be used within 6 months from the time of delivery. In case of storage over 6 months, solderability shall be checked before actual usage.
Technical considerations	◆Storage 1. The ambient of high temperature or high humidity might accelerate to make the solderability and the tape worse.