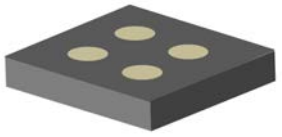
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

CSP Enhancement Mode Power MOSFET

CJ4616SP Dual N-Channel MOSFET

V_{SSS}	$R_{SS(on)}$TYP	I_S
15V	14 mΩ@4.5V	8A
	14.5mΩ@4.0V	
	15 mΩ@3.8V	
	16 mΩ@3.1V	
	19 mΩ@2.5V	

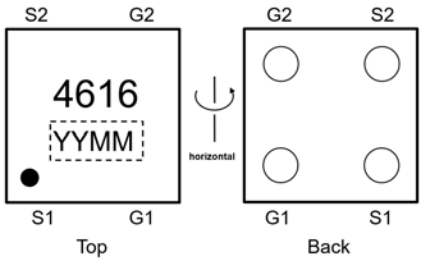
CSPB1515-4



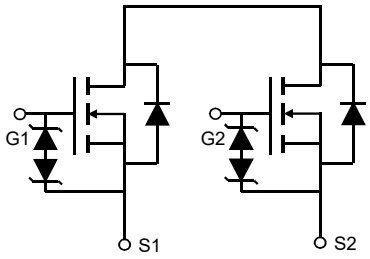
DESCRIPTION

The CJ4616SP uses advanced trench technology to provide excellent $R_{SS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V while retaining a 12V $V_{GS(MAX)}$ rating. It is ESD protected. This device is suitable for use as a unidirectional or bi-directional load switch, facilitated by its common-drain configuration.

Marking and pin assignment



Equivalent Circuit



Marking:
1. 4616: Product Code
2. YYMM: Date Code
3. Solid dot: Pin 1

Absolute Maximum Ratings (T_A =25℃unless otherwise noted)

Symbol	Parameter	Limit	Unit
V_{SSS}	Source to Source Voltage	15	V
V_{GSS}	Gate-Source Voltage	±12	V
I_S	Source Current(DC) [1]	8	A
I_{SP}	Source Current (Pulse) [1,2]	60	A
P_T	Total Dissipation [1]	1.5	W
Tch	Channel Temperature	150	℃
T_{STG}	Storage Temperature	-55 To 150	℃

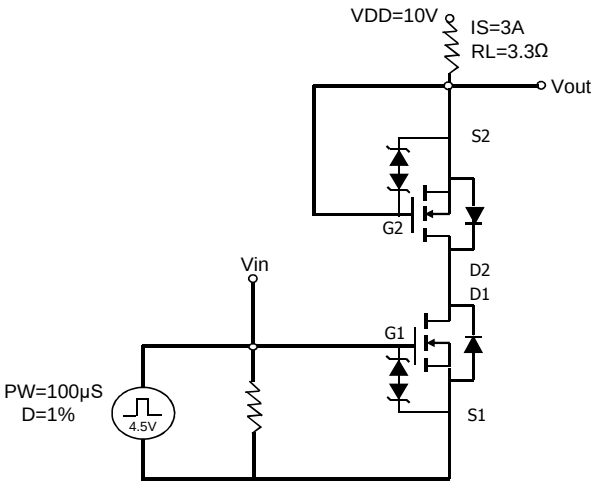
Note 1 Mounted on FR4 board (25.4 mm × 25.4 mm × t1.0 mm) using the minimum recommended pad size (36μm Copper).
2 t = 10 μs, Duty Cycle ≤ 1 %

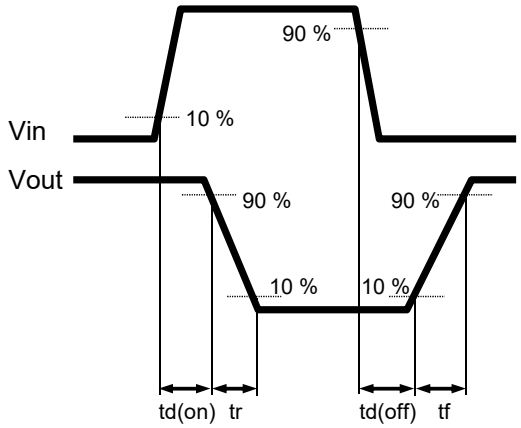
MOSFET ELECTRICAL CHARACTERISTICS

Electrical Characteristics (T_A=25℃unless otherwise noted)

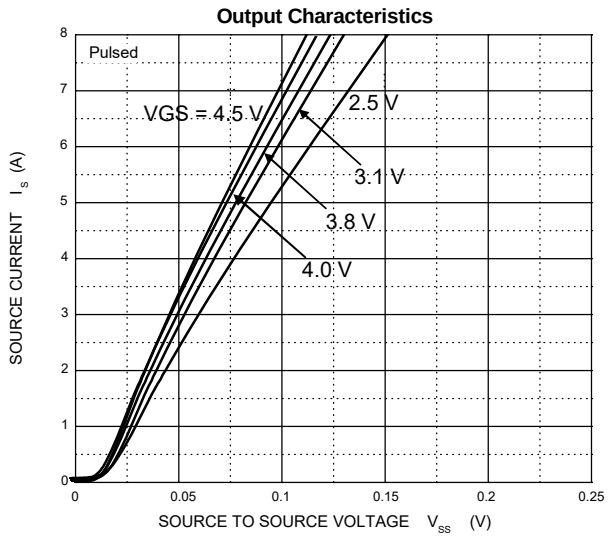
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Parameters						
BV_{SSS}	Source to Source Breakdown Voltage	I_S=250μA, V_{GS}=0V	15			V
I_{SSS}	Zero- Gate Voltage Source Current	V_{SS}=15V, V_{GS}=0V	-	-	1	μA
I_{GSS}	Gate to Source Leakage Current	V_{SS}=0V, V_{GS}= ±8V	-	-	±10	μA
V_{TH}	Cutoff Voltage	V_{SS}=7.5V, I_S=250μA	0.5	0.9	1.3	V
$\|yg_{FS}\|$	Forward Transfer Admittance	V_{SS}=10V,I_S=3A	1	9	-	S
$R_{SS(on)}$	Static Source to Source On-Resistance	V_{GS}=4.5V,I_S=3A	10.0	14.0	18.0	mΩ
		V_{GS}=4.0V,I_S=3A	10.5	14.5	19.0	mΩ
		V_{GS}=3.8V,I_S=3A	11.0	15.0	20.0	mΩ
		V_{GS}=3.1V,I_S=3A	12.0	16.0	21.0	mΩ
		V_{GS}=2.5V,I_S=3A	13.0	19.0	30.0	mΩ
$t_{d(on)}$	Turn-on Delay Time	V_{SS}=10V,I_S=3A V_{GS}=4.5V	-	4.6	-	μS
t_r	Turn-on Rise Time		-	20.2	-	μS
$t_{d(off)}$	Turn-Off Delay Time		-	40.4	-	μS
t_f	Turn-Off Fall Time		-	60.6	-	μS
C_{iss}	Input Capacitance	V_{SS}=10V,V_{GS}=0V, f=10kHz	-	485	-	pF
C_{oss}	Output capacitance		-	190	-	pF
C_{rss}	Reverse transfer capacitance		-	95	-	pF
Q_g	Total gate charge	V_{SS}=12V,I_S=6A,V_{GS}=4.5V	-	8.8	-	nC
$V_{F(S-S)}$	Diode Forward Voltage	V_{GS}=0V,I_S=1A	-	-	1.2	V

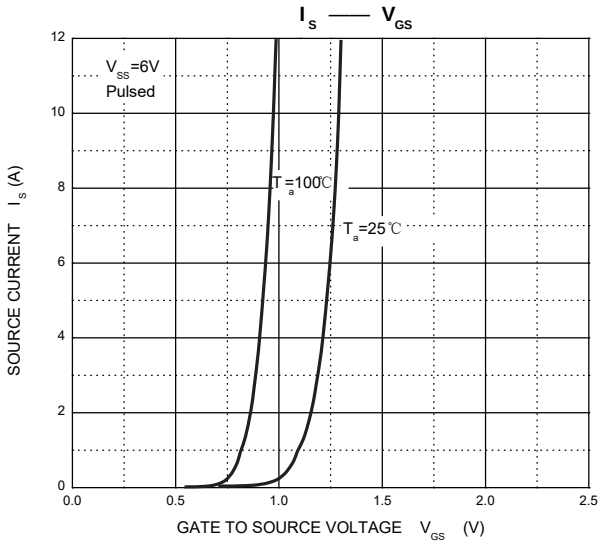
Note: Measurement circuit for td(on)/tr/td(off)/tf/Q_g,when FET1 is measured,G2 and S2 are short-circuited.

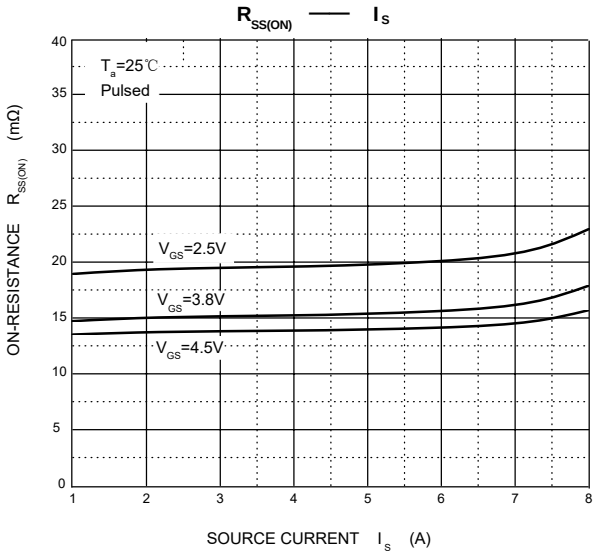


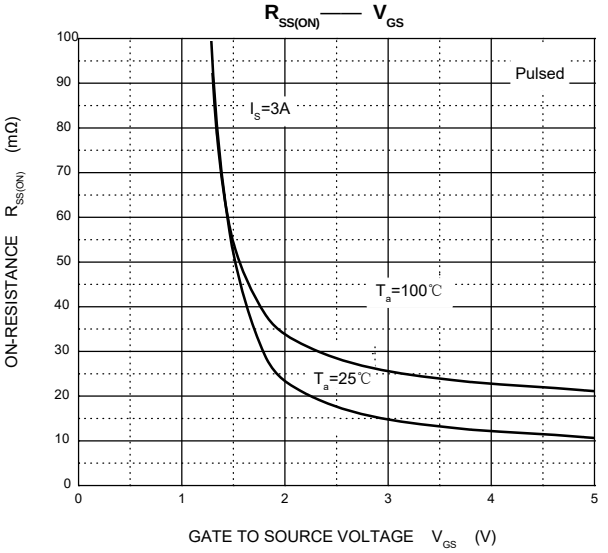


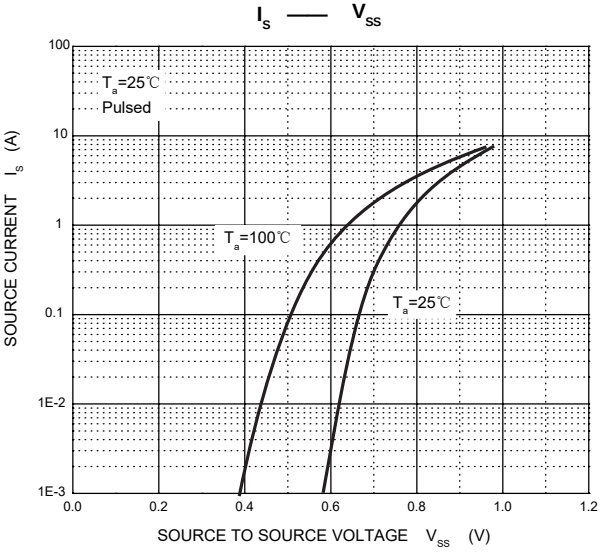
Typical Characteristics

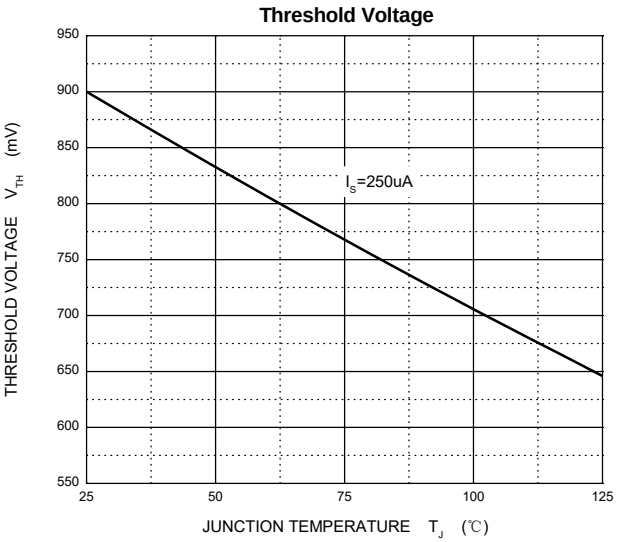




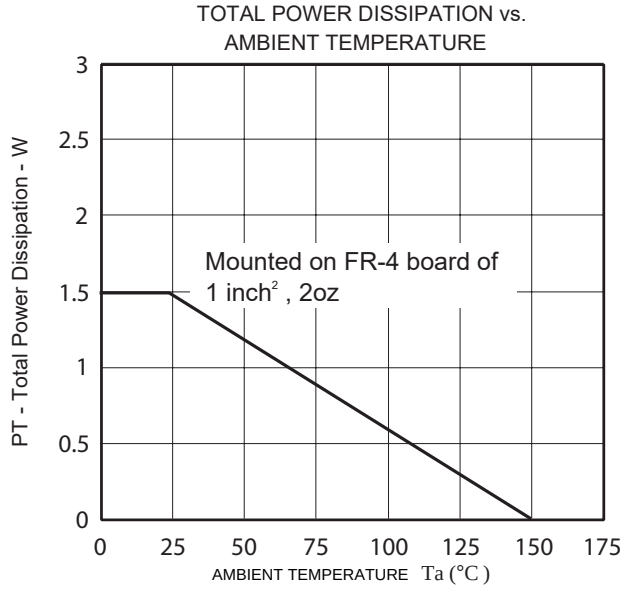


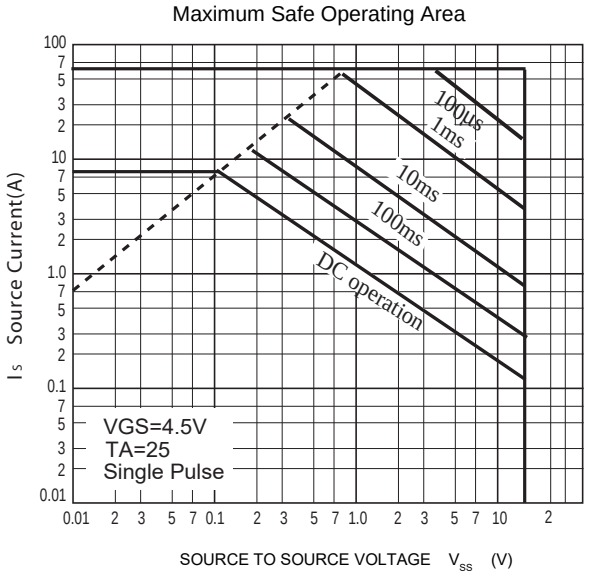


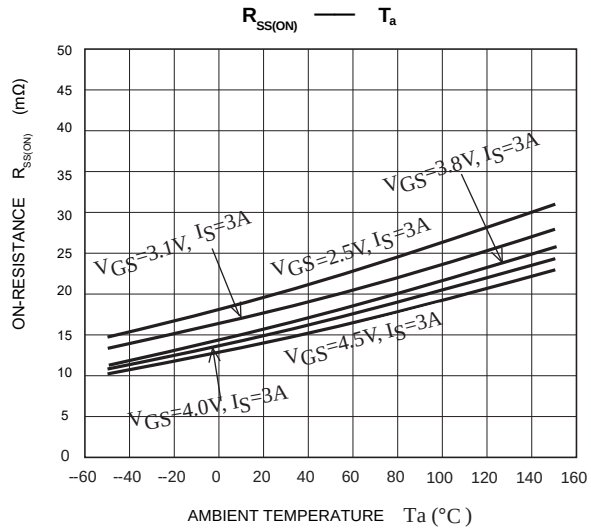


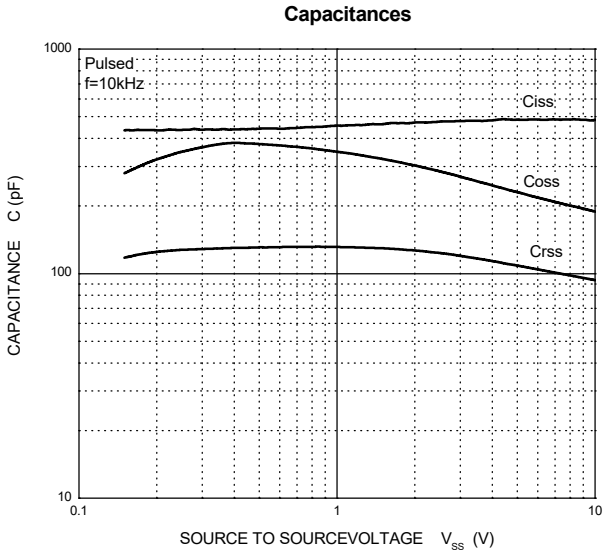


Typical Characteristics

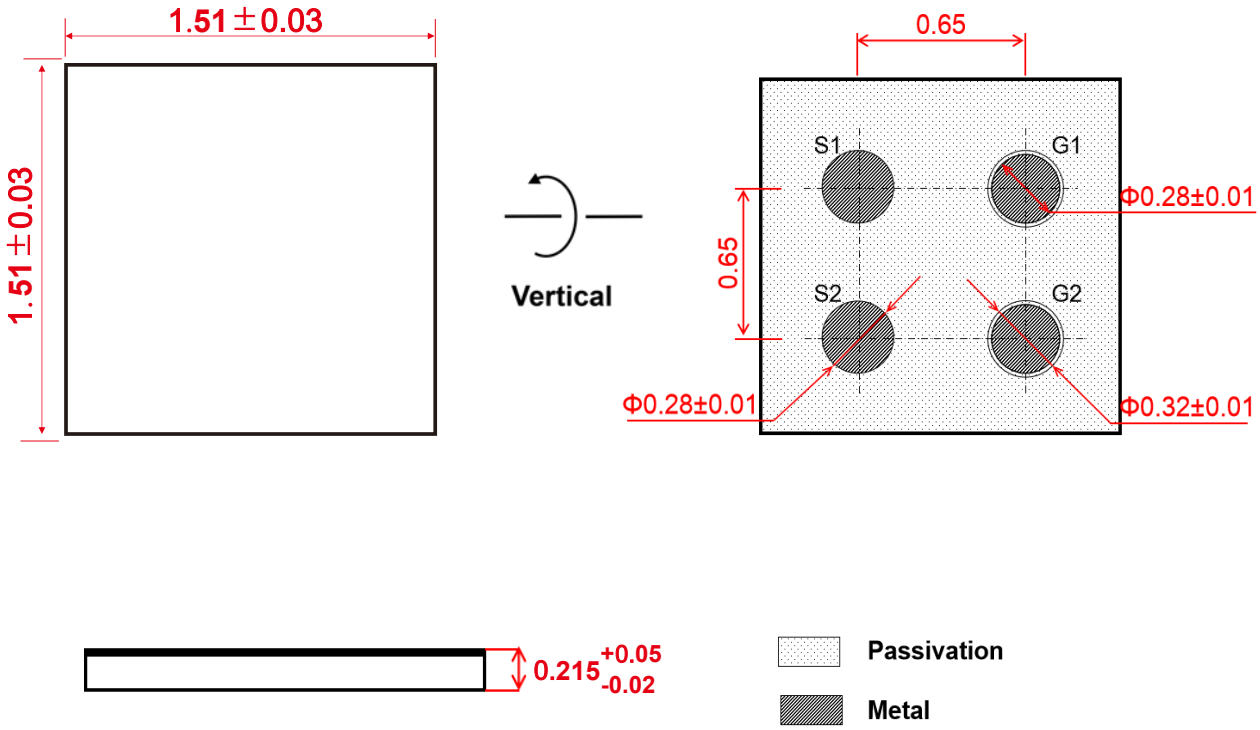




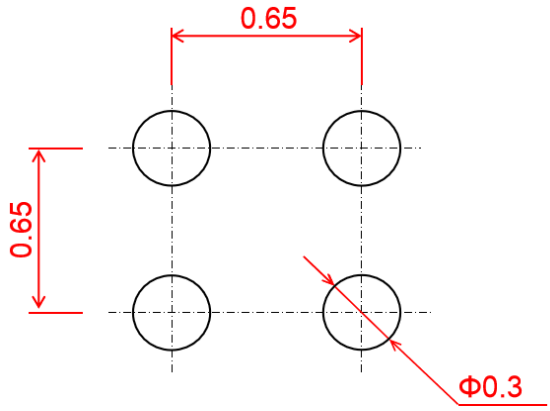




CSPB1515-4 Package Outline Dimensions(Unit:mm)

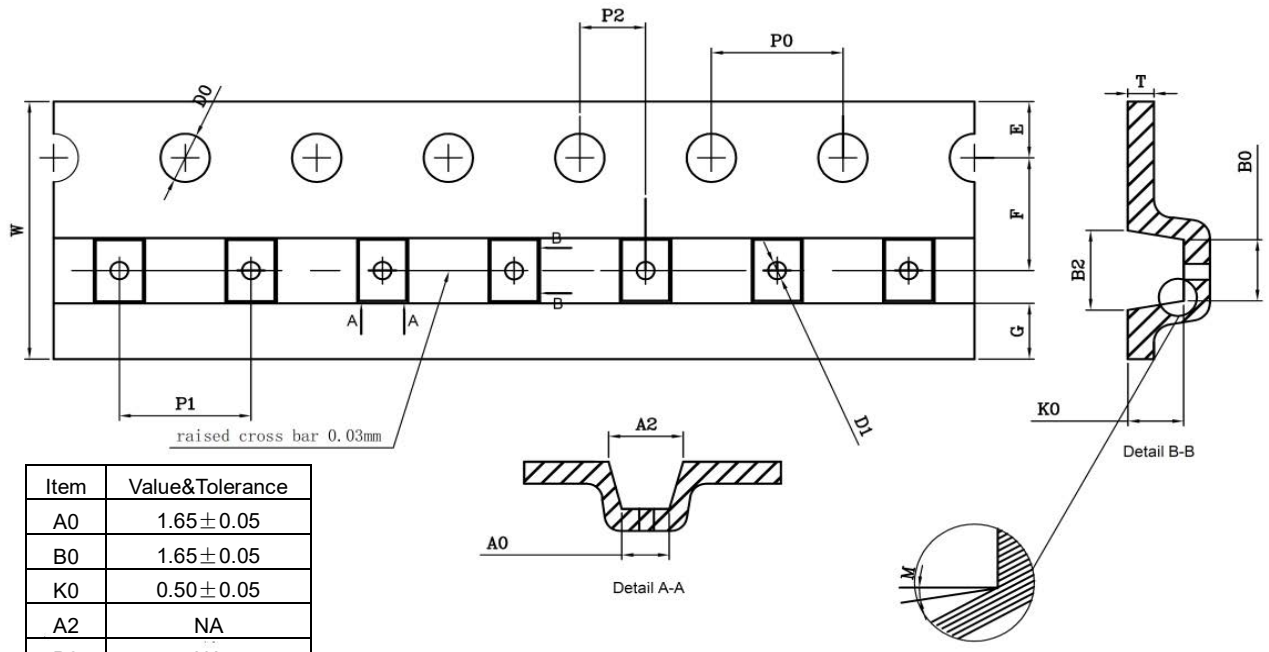


CSPB1515-4 Suggested Pad Layout (Unit:mm)

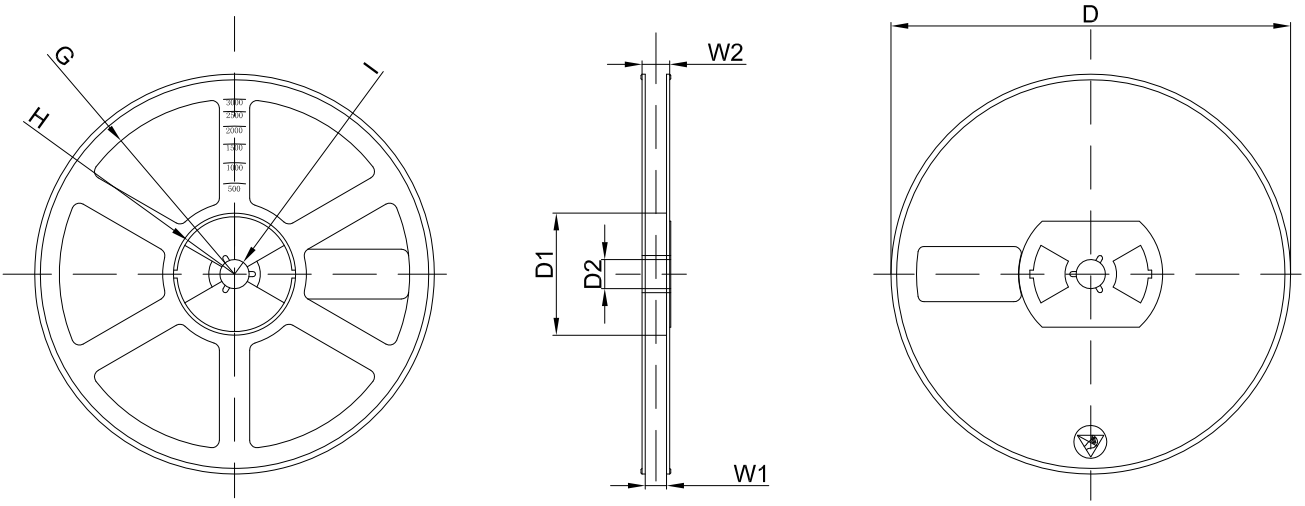


Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.050mm.
3.The pad layout is for reference purposes only.

CSPB1515-4 Tape (Unit:mm)



Item	Value&Tolerance
A0	1.65±0.05
B0	1.65±0.05
K0	0.50±0.05
A2	NA
B2	NA
D0	1.50+0.10/0.00
D1	1.00MIN
P0	4.00TYP
P1	4.00TYP
P2	2.00±0.05
E	1.75±0.10
F	3.50±0.05
G	NA
T	0.20±0.05
W	8.00+0.30/-0.10
M	MAX 3°



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø180.00	60.00	13.00	R78.00	R25.60	R6.50	8.60	11.40

REEL	Reel Size	Box	Box Size(mm)
3000 pcs	7 inch	30,000 pcs	203×203×195

Attention:

1、When exporting the products or technology described in this document, you should comply with the applicable export control laws and regulations and follow the procedures required by such laws and regulations.

2、The products described in this book are intended to be used for general applications (such as office equipment, communications equipment, measuring instruments and household appliances), or for specific applications as expressly stated in this book. Consult our sales staff in advance for information on the following applications: Special applications (such as for airplanes, aerospace, automotive equipment, traffic signaling equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body. It is to be understood that our company shall not be held responsible for any damage incurred as a result of or in connection with your using the products described in this book for any special application, unless our company agrees to your using the products in this book for any special application.

3、Specifications of any and all JSCJ products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.

4、You should use the JSCJ products described in this document within the range specified by JSCJ, especially with respect to the maximum rating, operating supply voltage range, movement power voltage range, heat radiation characteristics, installation and other product characteristics. JSCJ shall have no liability for malfunctions or damages arising out of the use of JSCJ products beyond such specified ranges.

5、Regarding monolithic semiconductors, if you should intend to use this IC continuously under high temperature, high current, high voltage, or drastic temperature change, even if it is used within the range of absolute maximum ratings or operating conditions, there is a possibility of decrease reliability. Please contact us for a confirmation.

6、JSCJ strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.

8、JSCJ has used reasonable care in preparing the information included in this document, but JSCJ does not warrant that such information is error free. JSCJ assumes no liability whatsoever for any damages incurred by you resulting from errors in or omissions from the information included herein.

9、The products and product specifications described in this book are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.

This catalog provides information as of Dec. 2021. Specifications and information herein are subject to change without notice.