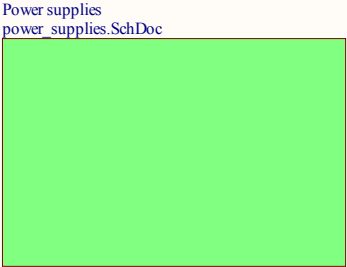
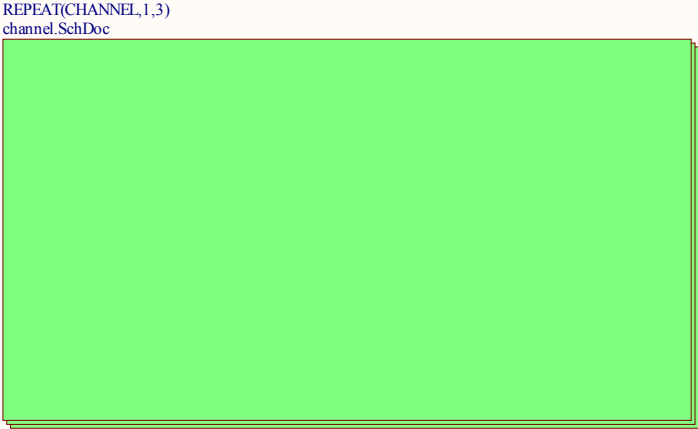


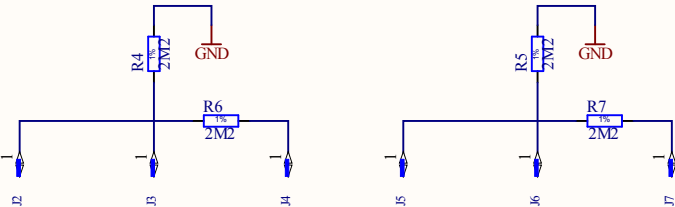
▲ NIM levels:  
Logic 1 = -14mA to -18mA into 50ohms  
Logic 0 = -1mA to +1mA into 50ohms



GND test points

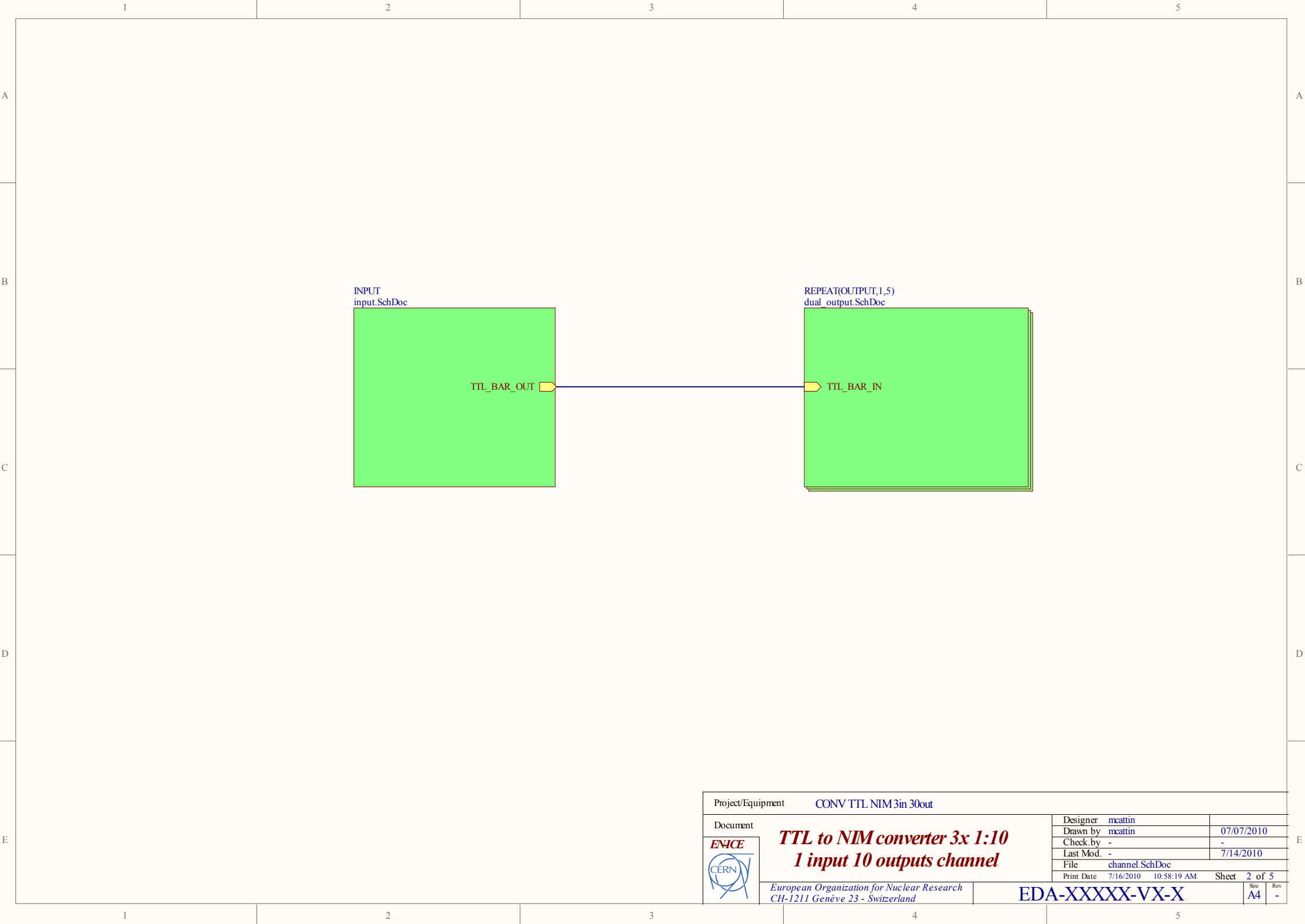



ESD discharge strips (top and bottom of the card)

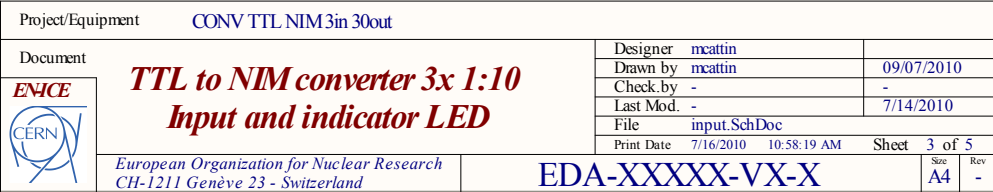


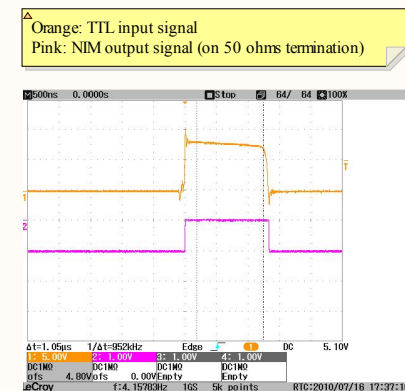
Project/Equipment		CONV TTL NIM3in 30out		
Document		<div>ENICE</div> <div>CERN</div> <div>TTL to NIM converter 3x 1:10 Top level</div> <div>European Organization for Nuclear Research CH-1211 Genève 23 - Switzerland</div>		
Designer				mcattin
Drawn by				mcattin
Check by				-
Last Mod.				7/14/2010
File		top.SchDoc		
Print Date		7/16/2010	10:58:19 AM	Sheet 1 of 5
Size		A4		
Rev		-		



EDA-XXXXX-VX-X



Project/Equipment		CONV TTL NIM3in 30out		
Document		<div><div>ENICE</div><div></div></div> <div><b>TTL to NIM converter 3x 1:10</b> <b>1 input 10 outputs channel</b></div> <div>European Organization for Nuclear Research CH-1211 Genève 23 - Switzerland</div>		
Designer	mcattin			
Drawn by	mcattin			
Check by	-			
Last Mod.	-			
File	channel.SchDoc			
Print Date	7/16/2010 10:58:19 AM	Sheet	2 of 5	
EDA-XXXXX-VX-X			Size	Rev
			A4	-





Project/Equipment		CONV TTL NIM 3in 30out	
Document		Designer	mcattin
 <p><b><i>TTL to NIM converter 3x 1:10</i></b> <b><i>Dual output buffer block</i></b></p>		Drawn by	mcattin
		Check by	-
		Last Mod.	-
		File	dual_output.SchDoc
		Print Date	7/16/2010 10:58:19 AM
 <p>European Organization for Nuclear Research CH-1211 Genève 23 - Switzerland</p>		Sheet 4 of 5	
EDA-XXXXXX-VX-X		Size	A4
		Rev	

Estimated power consumption:

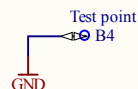
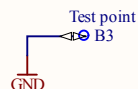
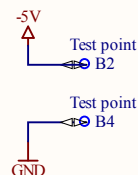
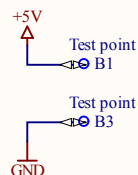
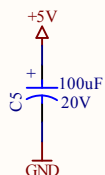
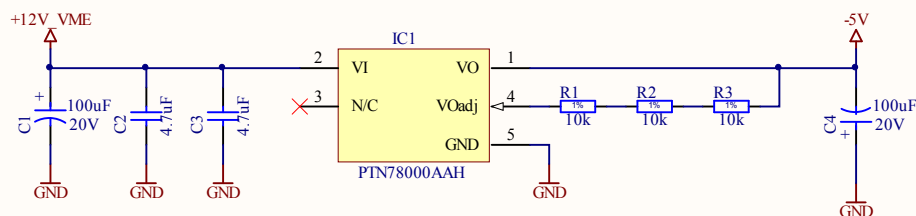
+5V -> 75mA / channel

-5V -> 250mA / channel

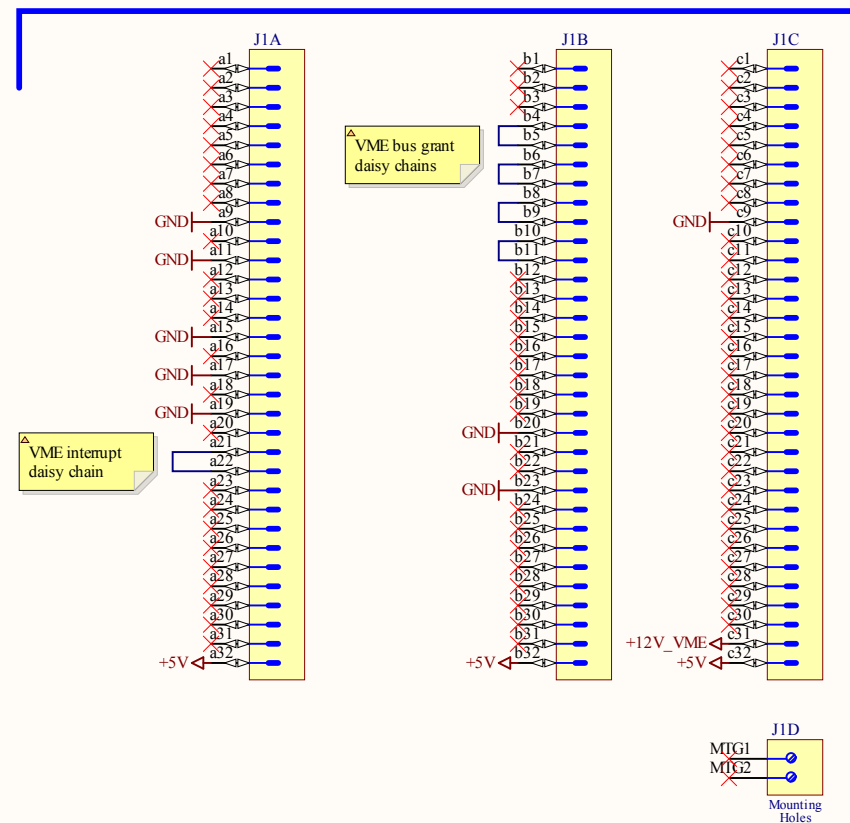
Channel = 1 input and 10 outputs

$$V_o = -(3 * (R_{set} + 28.5k)) / (R_{set} + 5.62k)$$

With  $R_{set} = 30k \rightarrow V_o = -4.927V$



## VME P1



Project/Equipment CONV TTL NIM3in 30out

Document



**TTL to NIM converter 3x 1:10**  
**Power supplies, VME connector**

European Organization for Nuclear Research  
CH-1211 Genève 23 - Switzerland

Designer	mcattin	
Drawn by	mcattin	07/07/2010
Check by	-	-
Last Mod.	-	7/16/2010
File	power_supplies.SchDoc	
Print Date	7/16/2010 10:58:19 AM	Sheet 5 of 5

EDA-XXXXX-VX-X

Size	Rev
A4	-

Component	Description	Designator	Footprint	Library	Quantity
Test point	Single Terminal	PC1, B5, B34	021806041H_05- N44-11	021806041H_05- N44-11	4
100uF	Polarized capacitor	C1, C4, C5	CAP69032000- 100X1150	0691100AP-2000- 20%_L55000003- SANYO_SH	3
4.7uF	Non-polarized capacitor	C2, C3, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35	CAP69032000- 100X1150	0691100AP-2000- 20%_L55000003- SANYO_SH	32
		C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C121, C122, C123, C124, C125, C126, C127, C128, C129, C130, C131, C132, C133, C134, C135, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C146, C147, C148, C149, C150, C151, C152, C153, C154, C155, C156, C157, C158, C159, C160, C161, C162, C163, C164, C165, C166, C167, C168, C169, C170, C171, C172, C173, C174, C175, C176, C177, C178, C179, C180, C181, C182, C183, C184, C185, C186, C187, C188, C189, C190, C191, C192, C193, C194, C195, C196, C197, C198, C199, C200, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C212, 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100uF	Non-polarized capacitor	C153	CAP62100140H_05- V_10N_276	021006_1000_05- V_10N_276	66
22uF	Polarized capacitor	C152, C154, C155	CAP69032000- 100X1150	0691100AP-2000- 20%_L55000003- SANYO_SH	3
PC1/L48L	Probe	C153	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
	TV to 25W Input, 1.5A-15V To-TV Output, Adjustable				
PTN78000AAH	Switching Regulator	IC1	TEAD_EUR (H- POSSE-TS)	PTN78000AAH	1
AD21448R2	Operational Amplifier	C152, C154, C155	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	3
		C153	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
AD21448R2	Operational Amplifier	IC1	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
SN74LS123D	Monostable Multivibrator	C154, C154, C154	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	3
SN74NACT14D	CMOS INVERTER	C153, C153, C153	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	3
AD41512 Type-C	Universal Serial Data Interface	IC1	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	1
SMU-Pad	Single 10M Pad	C152, C154, C155	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	3
LE580-03	Dual Female Coax 2 Common Shield 3	C152, C153, C154	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	3
LE580-03	Dual Female Coax 2 Common Shield 3	C152, C153, C154	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	3
Green	Green 10M 1C2A	C152, C153, C154	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	3
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
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100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
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100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
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100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_05- V_10N_276	021006_1000_05- V_10N_276	66
100	Resistor - 1%	R100, R100, R100	021006_1000_		