

Vehicle Transient Simulator

VTS 200

Datasheet



In Compliance with

- > Ford EMC-CS-2009.1
- > FMC1278-2016

Introduction

Transient simulator VTS 200 is designed according to test requirements of Ford EMC-CS-2009 and FMC1278-2016, capable of generating Pulse A1, A2-1, A2-2, C-1 and C-2 under CI 220, Pulse A2-1 and A2-2 under CI 260 F and RI 130. For RI 130 tests, the BNC co-axial cable is provided for connection with specific test clamps.

Features

- > Capable of generating wide range of pulses in compliance with Ford standards;

Application Areas

- > Automobiles

Technical Parameters	
Input Voltage	Max 13.5 V;
Output Voltage	Max 10 A – 20 A (standard 10 A relay)
Test Mode	By sequence or infinite loop
Resistor R1	51 Ω, 25 W
Resistor R2	220 Ω ± 5%, 2 W
Resistor R3	33 Ω ± 5%, 10 W
Resistor R4	6 Ω ± 5%, 50 W
Capacitor C1	100 nF capacitor, 400 V
Inductor L1	5 μH inductor
Inductor L2	100 mH inductor
Diode D1	Zener diode, 39 V, 5 W
Transistor Q1	NPN transistor
SW0 - SW4	Single Throw Switch
RLY1	12 V AC relay, NC contact used (Potter & Brumfield KUP-14A15-12)

Test Procedures	
As per EMC-CS-2009 FMC1278-2016	CI 220: A1, Mode M1, M2
	CI 220: A2-1, Mode M1, M2, M3
	CI 220: A2-2, Mode M1, M2, M3
	CI 220: C-1, Mode M2, M3
	CI 220: C-2, Mode M2 和 M3
	CI 260: F
	RI 130: A2-1, Mode M2 and M3;
	RI 130: A2-2, Mode M2 and M3;
	Specific type of test clamp shall be used.

Output Waveforms and Current					
Tests	Output Waveform	Mode	Time *1	Max Output Voltage	Output Terminal
RI 130	A2-1	2	60	*2	SOURCE SINK
		3			
	A2-2	2			
		3			
CI 220	A1	1	120	10	PULSE A, F+ GND-
		2			
	A2-1	1			
		2			
		3			
	A2-2	1			
		2			
		3			
	C-1	2			
		3			
	C-2	2			
		3			
CI 260	F	-	60	10	PULSE A, F+ GND-

General Parameters	
Fuse	20 A, for DUT power supply current
Protection	Over-voltage protection and reverse polarity protection
Power Supply	12 V battery or APS/APG series
Operating Temp.	15 - 35 °C
Operating Humidity	35%-85%RH (no condensation)
Dimension	335 x 310 x 195 mm
Weight	Approx 7.2 kg

Input and Output Method	
Input	Via 4 mm safety connector, for DC power supply
Output	Via 4 mm safety connector, for CI 220, CI 260 tests; 50 Ω BNC connector for RI 130 tests;
LED Indicators	Test status, Test items (ID); Waveform; Mode;

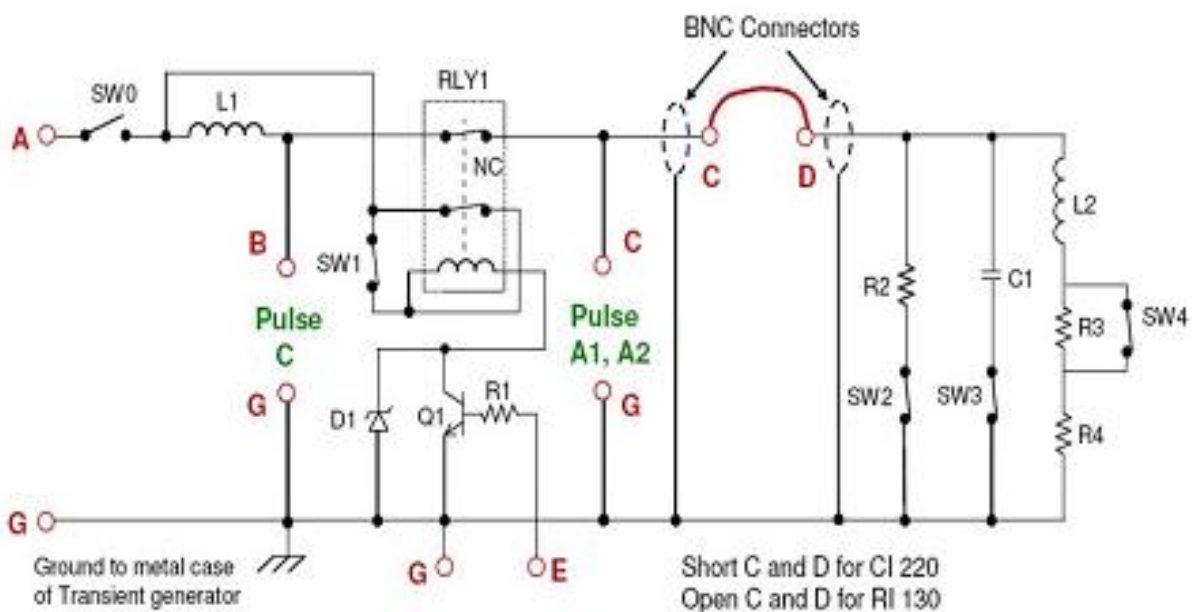
Standard Accessories	
Grounding cable	1 pc
Power supply cable	1 pc
Testing wire	1 pc
Fuse	1 pc
BNC cable	1 pc
Factory Inspection Report	1 pc
Quality Guarantee	1 pc
User manual	1 pc

Optional Accessories	
Test Clamp – TF 1315	Dimension: 1,345 x 110 x 152 mm; Weight: 5 kg
Relay – KUP-14A15-12	Switch voltage: 12 V; Switch current: 10 A; Triggering mode: 3PDT;



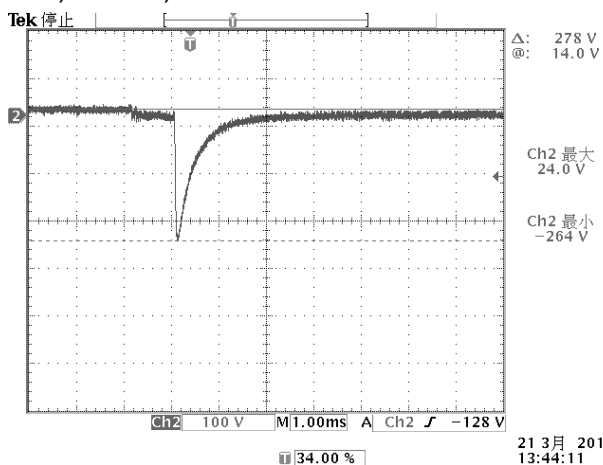
Design Schematic Diagram:

Figure F-1: Transient Generator Circuit for RI 130 and CI 220

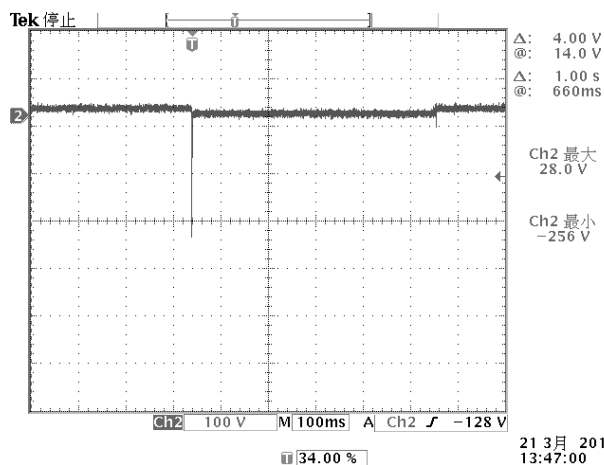


Waveforms

CI 220, Pulse A1, Mode 1

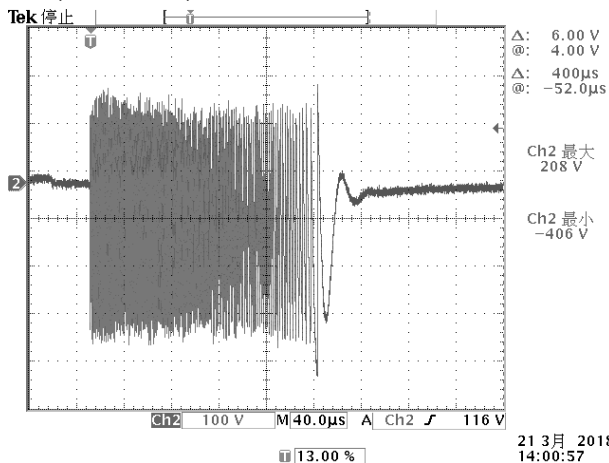


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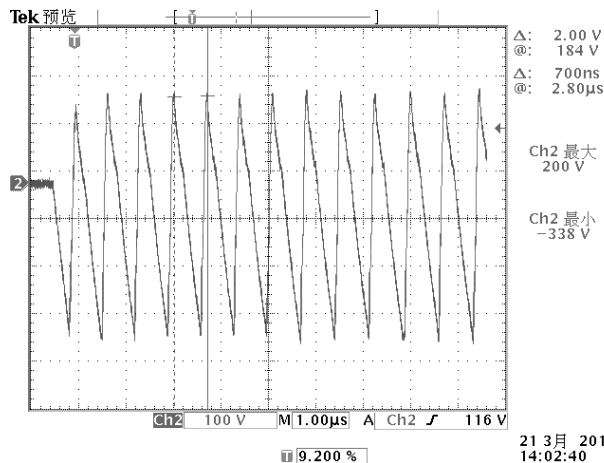


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CI 220, Pulse A2-1, Mode 1

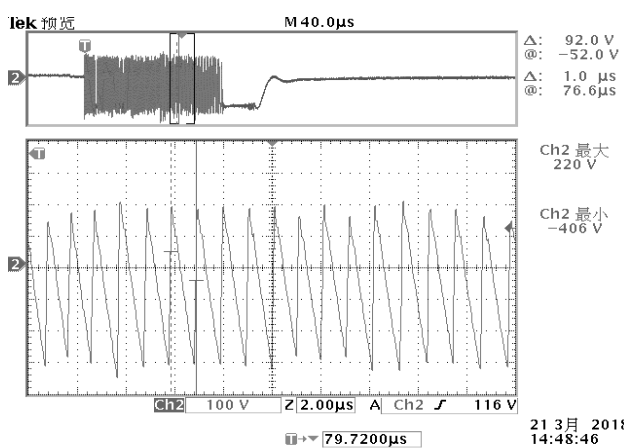


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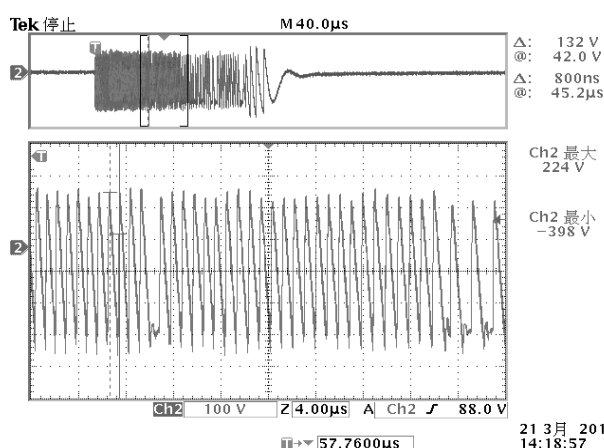


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CI 220, Pulse A2-1, Mode 2

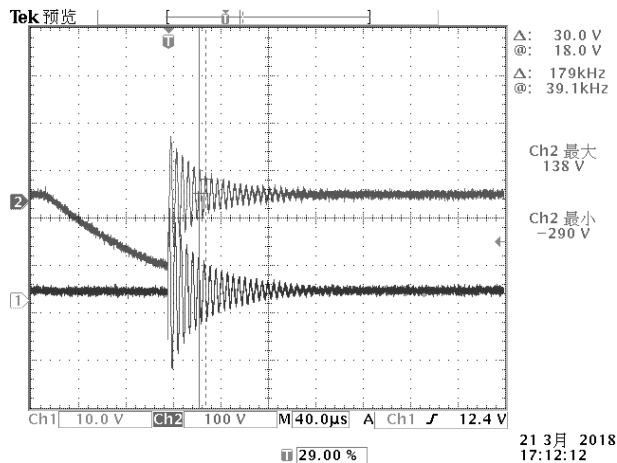
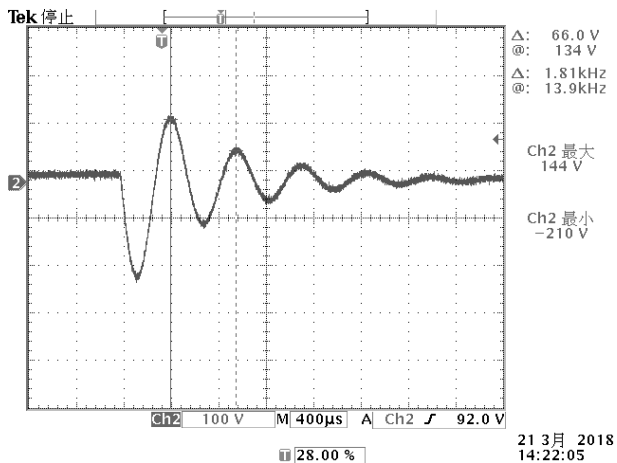


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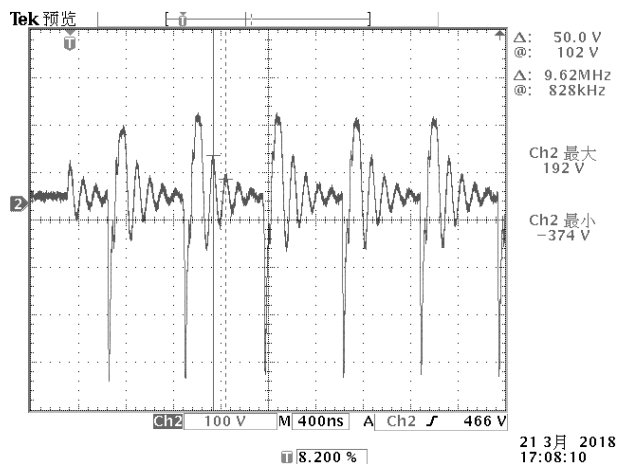
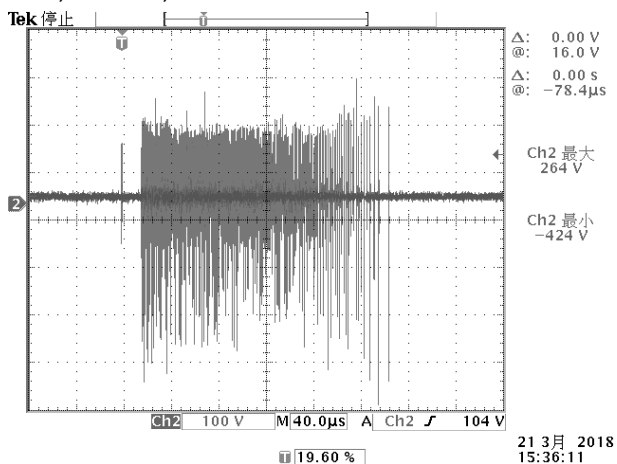


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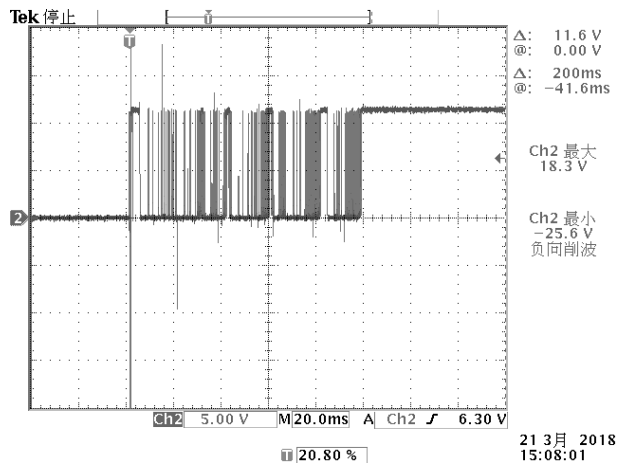
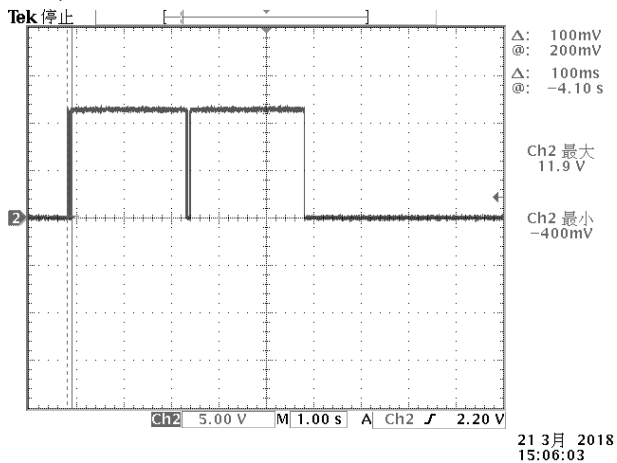
CI 220, Pulse A2-2, Mode 2



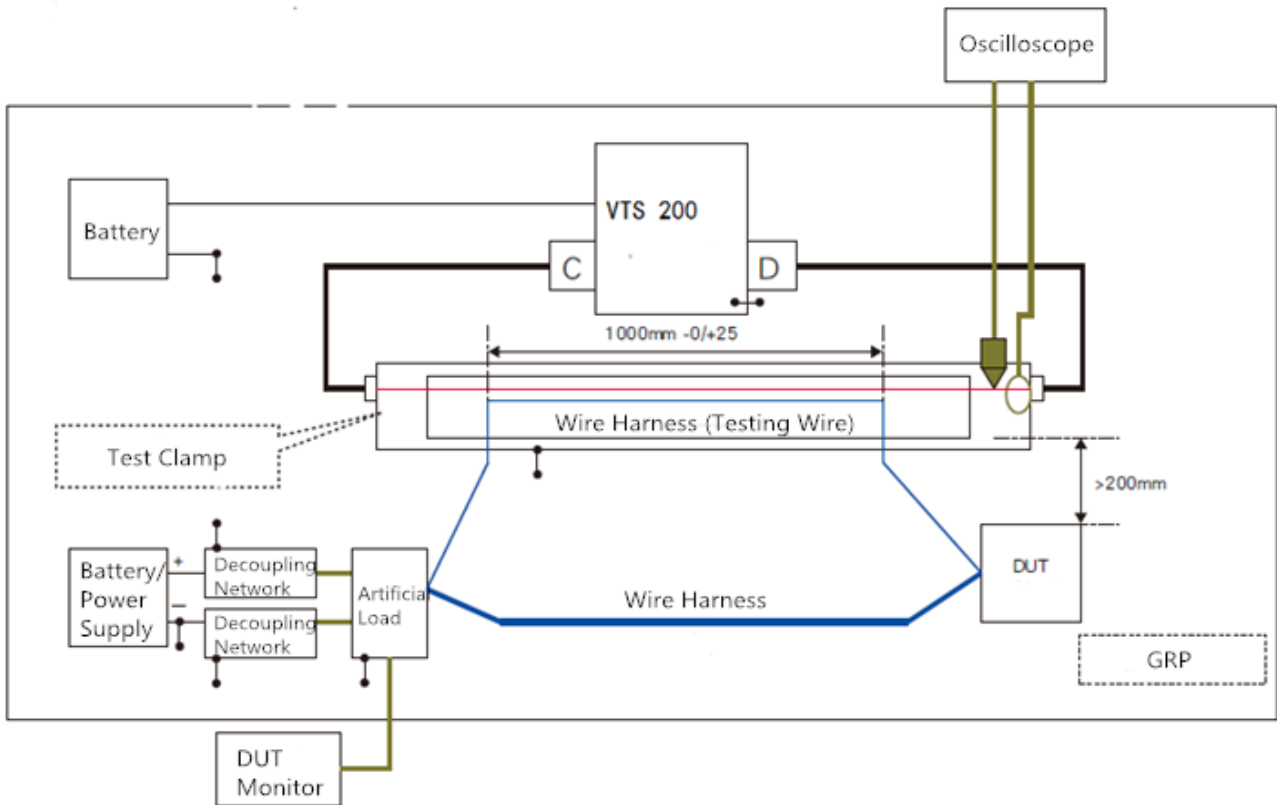
CI 220, Pulse C1, Mode 2



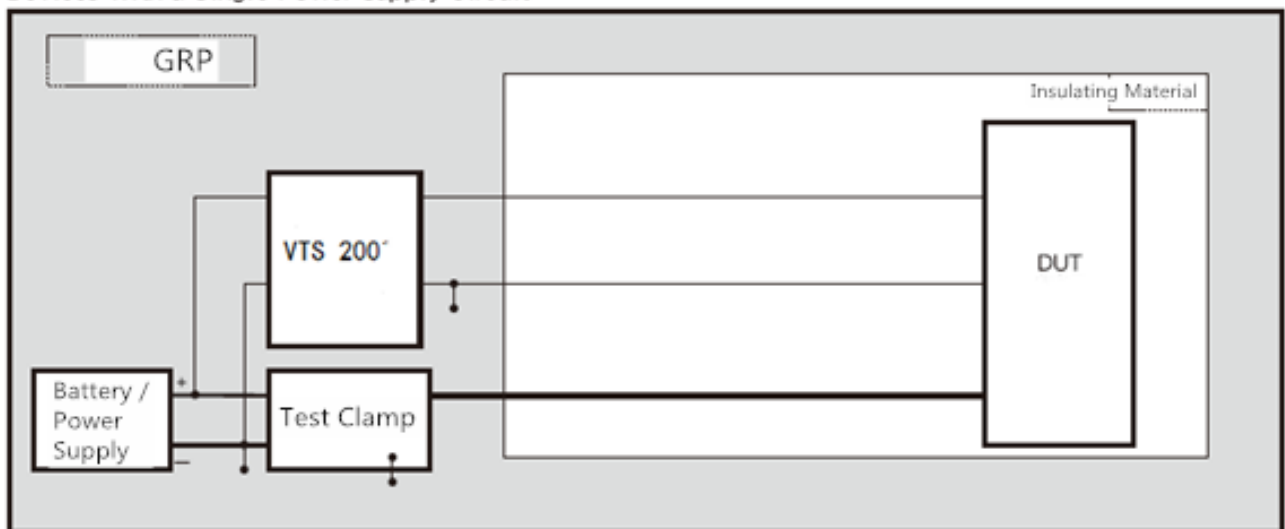
CI 260, Waveform F



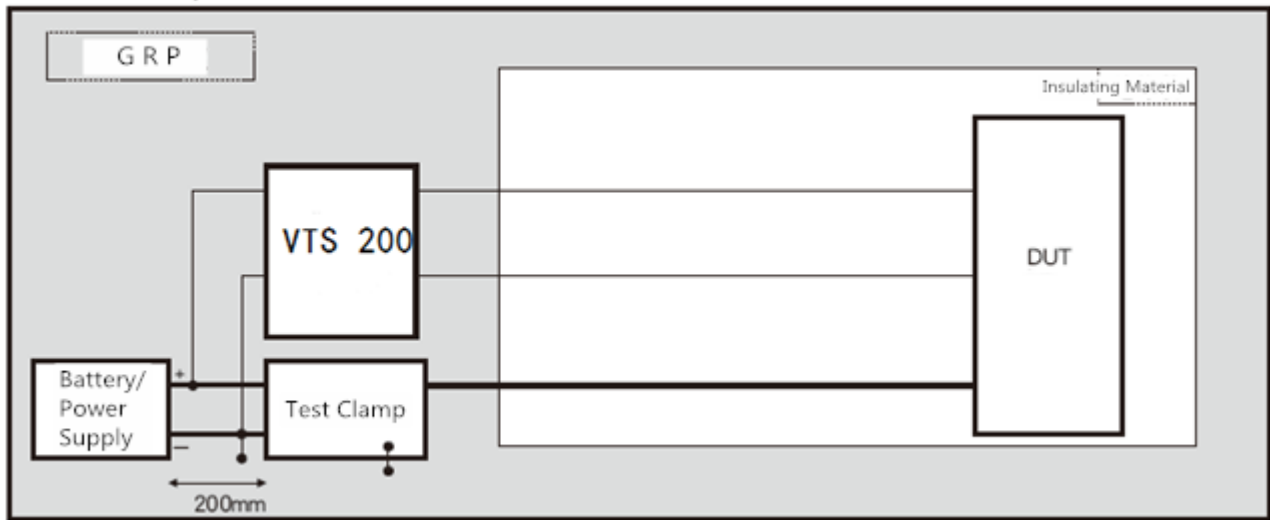
Equipment Connection Diagram



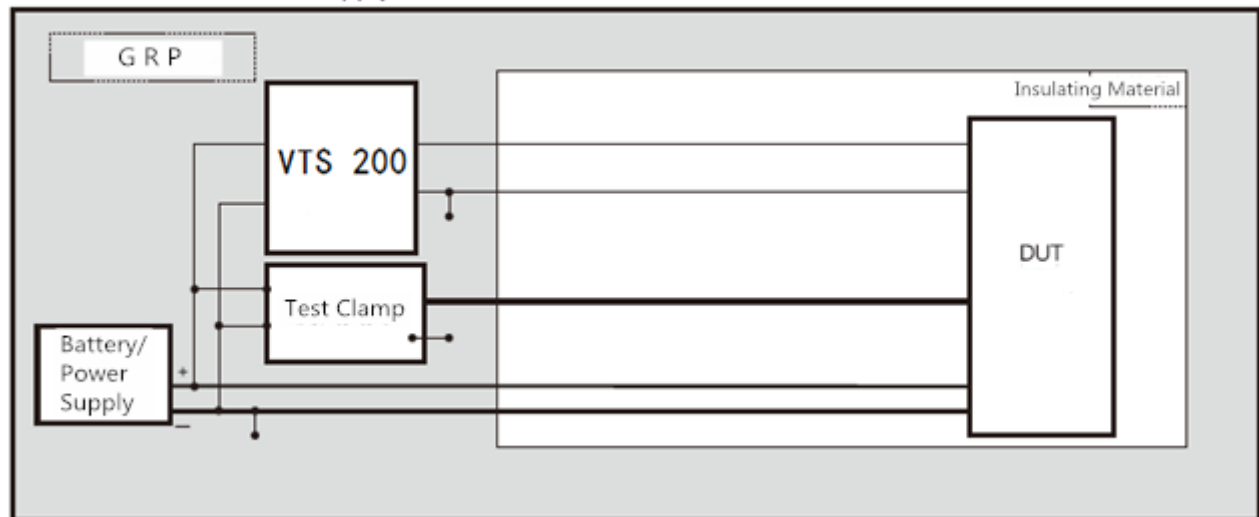
• Devices with a Single Power Supply Circuit



• Devices with Input Circuit



• Devices with Two Power Supply Connections





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