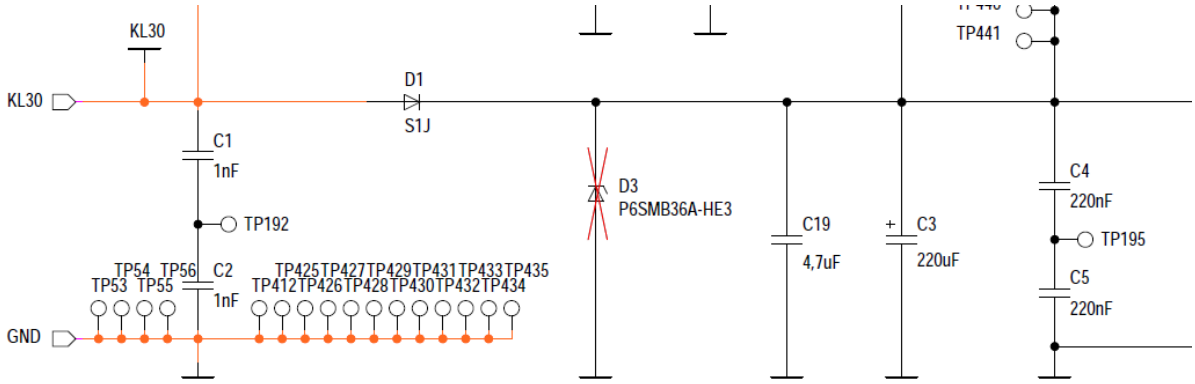



Oszillogramme:

gelb: KL30 am Steckerpin

grün: Eingang Spannungsregler

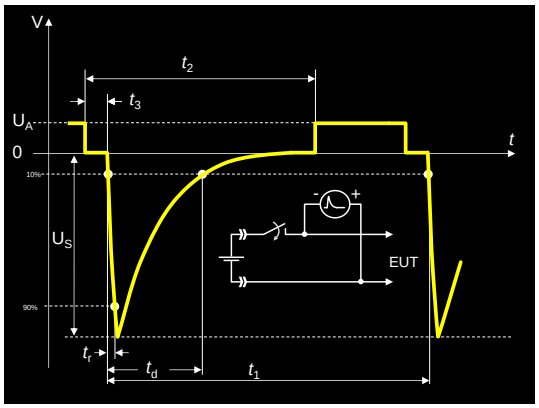
rot: Ausgang Spannungsregler

## 1.1 Transients on Supply Lines (TSUP-Test)

### 1.1.1 Detailed measurement results

#### 1.1.1.1 Test Pulse 1

| | |
|---|---|
| Test Name | C:\Programme\Schaffner Electrotest GmbH\AutoStar6\Standards\Mercedes\MBN 10284-2 2011\15.2 PULSE 1 (12V).PLS |
| Test Type | MT 5511 Pulse 1 ISO (Generic 2 and 6 ms transients) |
| Sequence Repetition | Count 500 |
| Test Status | PASS |




| Parameter | Operation | From | To | Step Size | Fail Value |
|---|---|---|---|---|---|
| Pulse Voltage (Us) | Static | -100 V | --- | --- | --- |
| Pulse Period (t1) | Static | 0,5 Secs | --- | --- | --- |

| General | Value |
|---|---|
| Rise Time (tr) | 1 us |
| Output Resistance (Ri) | 10 ohms |
| Pulse Width (td) | 2 ms |
| t2 | 200ms |
| Polarity/Coupling | Negative Parallel |

| Battery | |
|---|---|
| Battery State | UPC/Time |
| Voltage | 13.5 V |
| Current Limit | 100 I |
| End of Test Voltage | 13.5 V |

**Comments**

MBN 10284-2 :2008 :March\15.2 Pulse 1 (12V)

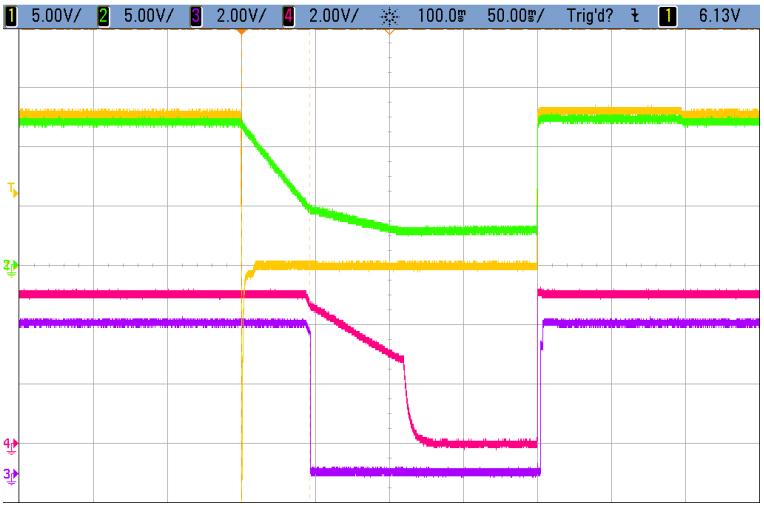



*Fig 2.1: Test pulse 1 applied to KL30 in run mode.*
*Yellow trace is KL30, green UB, red VDD, violet Reset.*

*VDD drops after 45ms, then Reset is asserted. Controller restarts after test.*

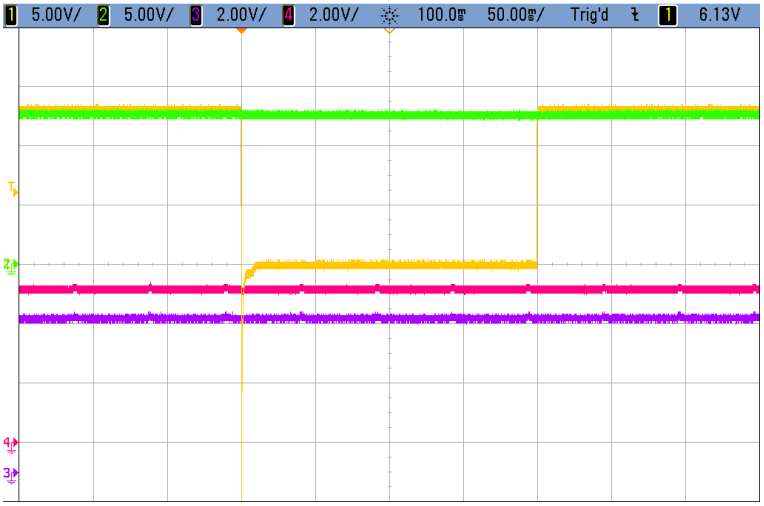
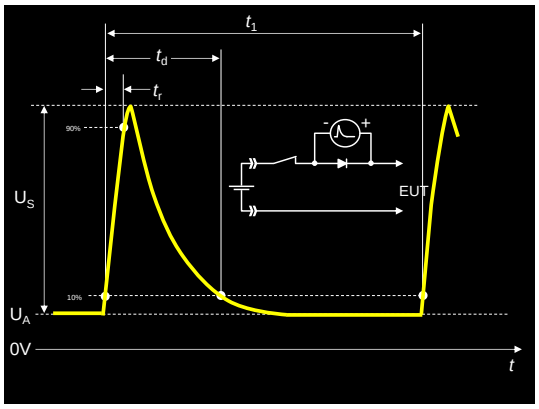



*Fig 2.2: Test pulse 1 applied to KL30 in sleep mode.*
*Yellow trace is KL30, green UB, red VDD, violet Reset.*

*VDD and Reset are not affected.*

### 1.1.1.2 Test Pulse 1b

| | |
|---|---|
| Test Name | C:\Programme\Schaffner Electrotest GmbH\AutoStar6\Standards\Mercedes\MBN 10284-2 2011\15.2 PULSE 1B (12V).PLS |
| Test Type | MT 5511 Pulse 1 ISO (Generic 2 and 6 ms transients) |
| Sequence Repetition | Count 500 |
| Test Status | PASS |




| Parameter | Operation | From | To | Step Size | Fail Value |
|---|---|---|---|---|---|
| Pulse Voltage (Us) | Static | 30 V | --- | --- | --- |
| Pulse Period (t1) | Static | 5 s | --- | --- | --- |

| General | Value |
|---|---|
| Rise Time (tr) | 1 us |
| Output Resistance (Ri) | 10 ohms |
| Pulse Width (td) | 2 ms |
| t2 | Not Applicable |
| Polarity/Coupling | Positive Serial |

| Battery | |
|---|---|
| Battery State | On |
| Voltage | 13.5 V |
| Current Limit | 100 I |
| End of Test Voltage | 13.5 V |

**Comments**

MBN 10284-2 :2008 :March\15.2 Pulse 1b (12V)

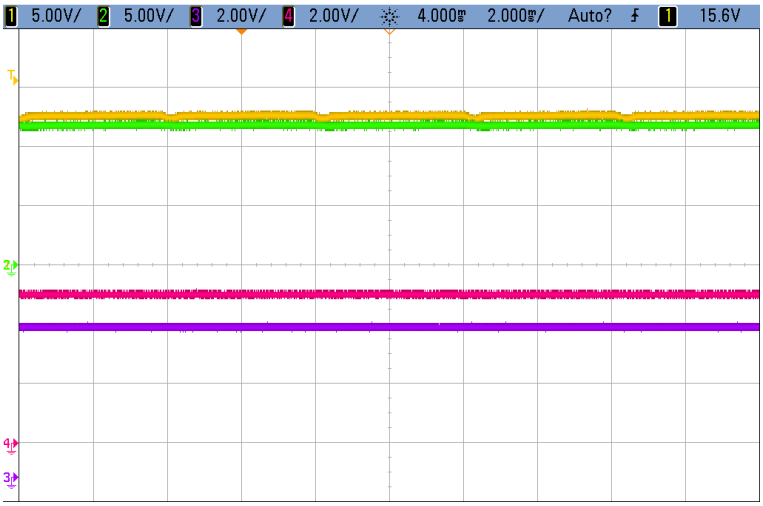



*Fig 2.3: Test pulse 1b applied to KL30 in run mode.*
*Yellow trace is KL30, green UB, red VDD, violet Reset.*

*(Pulse is not visible when loads are switched on)*

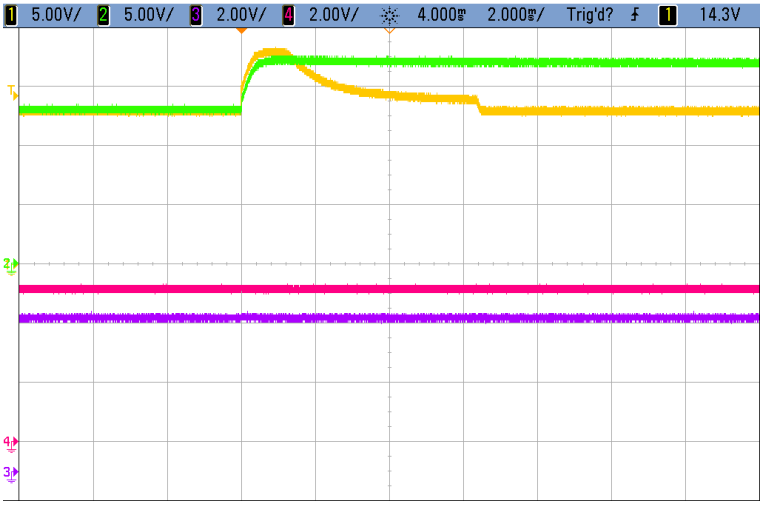
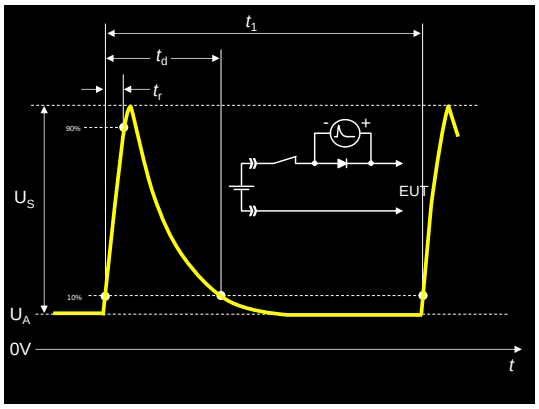



*Fig 2.4: Test pulse 1b applied to KL30 in sleep mode.*
*Yellow trace is KL30, green UB, red VDD, violet Reset.*

*VDD and Reset are not affected.*

### 1.1.1.3 Test Pulse 2a

| | |
|---|---|
| Test Name | C:\Programme\Schaffner Electrotest GmbH\AutoStar6\Standards\Mercedes\MBN 10284-2 2011\15.2 PULSE 2A (12V).PLS |
| Test Type | MT 5511 Pulse 2 (Generic 50 us transients) |
| Sequence Repetition | Count 500 |
| Test Status | PASS |




| Parameter | Operation | From | To | Step Size | Fail Value |
|---|---|---|---|---|---|
| Pulse Voltage (Us) | Static | 75 V | --- | --- | --- |
| Pulse Period (t1) | Static | 0,2 Secs | --- | --- | --- |

| General | Value |
|---|---|
| Rise Time (tr) | 1 us |
| Output Resistance (Ri) | 4 ohms |
| Pulse Width (td) | 50 us |
| t2 | Not Applicable |
| Polarity/Coupling | Positive Serial |

| Battery | |
|---|---|
| Battery State | On |
| Voltage | 13.5 V |
| Current Limit | 100 I |
| End of Test Voltage | 13.5 V |

| Ext.Resistance (Ri) | |
|---|---|
| External Resistance | Inactive |

**Comments**

MBN 10284-2 :2008 :March\15.2 Pulse 2a (12V)

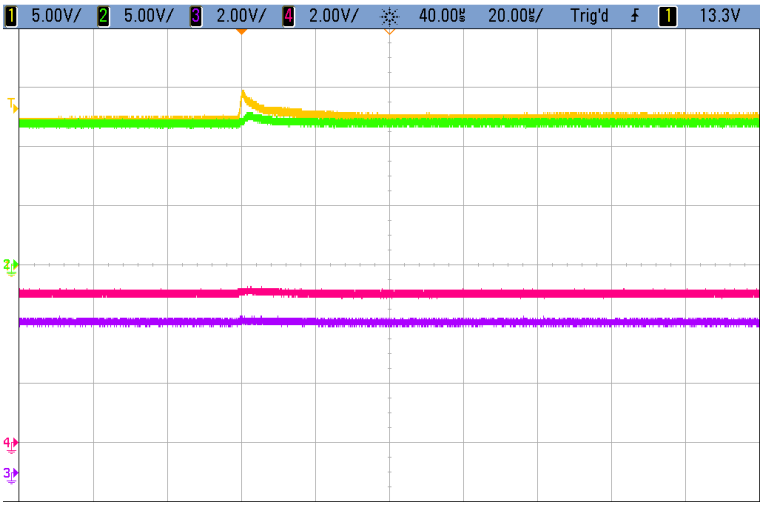


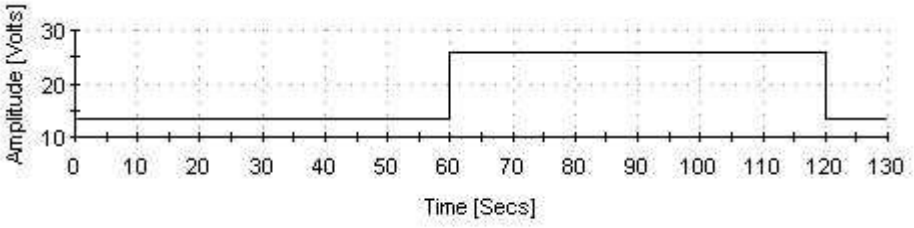

*Fig 2.5: Test pulse 2a applied to KL30 in run Mode.*
*Yellow trace is KL30, green UB, red VDD, violet Reset.*

*VDD and Reset are not affected.*

## 2 E-04 Jump start

### 2.1 Additional Information

| | |
|---|---|
| Test Name | C:\Programme\Schaffner Electrotest GmbH\AutoStar6\Standards\Mercedes\MBN LV 124-1 2011-03\4.4 E-04 JUMPSTART.PLS |
| Test Type | Double Arb : Master -> NSG 5600 Pulse 4C ( SVV ) |
| Sequence Repetition | Count 1 |
| Test Status | PASS |




| | | | |
|---|---|---|---|
| Segment Number # 1 | RAMP | | |
| Parameter | Mode | Initial Value | Final Value |
| Amplitude | Static | 13,5 Vpp | - - - |
| Parameter | Value | | |
| Segment Duration | 60 Seconds | | |
| | | | |
| Segment Number # 2 | RAMP | | |
| Parameter | Mode | Initial Value | Final Value |
| Amplitude | Static | 26 Vpp | - - - |
| Parameter | Value | | |
| Segment Duration | 60 Seconds | | |
| | | | |
| Segment Number # 3 | RAMP | | |
| Parameter | Mode | Initial Value | Final Value |
| Amplitude | Static | 13,5 Vpp | - - - |
| Parameter | Value | | |
| Segment Duration | 10 Seconds | | |
| | | | |
| Battery: | | End of Test: | |
| Current Limit: | 100 A | Voltage: | 13,5 V |

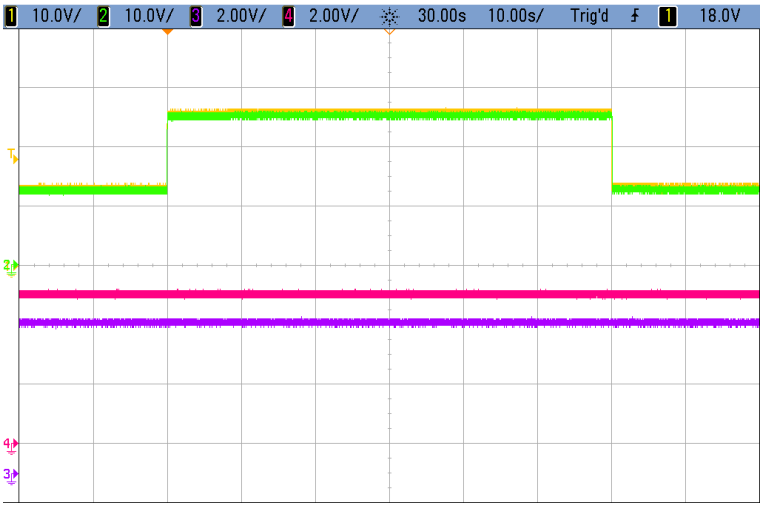


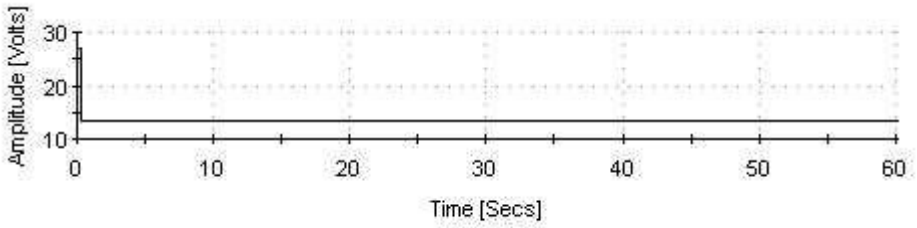

*Fig 2.1: E-04 pulse applied to KL30.*
*Yellow trace is KL30, green UB, red VDD, violet Reset.*

*VDD and Reset are not affected.*

## 3 E-05 Load dump

### 3.1 Additional Information

| | |
|---|---|
| Test Name | C:\Programme\Schaffner Electrotest GmbH\AutoStar6\Standards\Mercedes\MBN LV 124-1 2011-03\4.5 E-05 LOAD DUMP.PLS |
| Test Type | Double Arb : Master -> NSG 5600 Pulse 4C ( SVV ) |
| Sequence Repetition | Count 10 |
| Test Status | PASS |




| Segment Number # 1 | EXPO | | |
|---|---|---|---|
| Parameter | Mode | Initial Value | Final Value |
| Amplitude | Static | **18,5 Vpp** | - - - |
| Period | Static | 0,01 s | - - - |
| Offset | Static | 13,5 V | - - - |
| Angle | Static | 0 Degrees | 360 Degrees |
| Parameter | Value | | |
| Segment Duration | 1 Cycles | | |
| Kind | Rising | | |
| | | | |
| Segment Number # 2 | RAMP | | |
| Parameter | Mode | Initial Value | Final Value |
| Amplitude | Static | **32 Vpp** | - - - |
| Parameter | Value | | |
| Segment Duration | 300 ms | | |
| | | | |

| Segment Number # 3 | EXPO | | |
|---|---|---|---|
| Parameter | Mode | Initial Value | Final Value |
| Amplitude | Static | **18,5 Vpp** | - - - |
| Period | Static | 0,01 s | - - - |
| Offset | Static | 13,5 V | - - - |
| Angle | Static | 0 Degrees | 360 Degrees |
| Parameter | Value | | |
| Segment Duration | 1 Cycles | | |
| Kind | Falling | | |
| | | | |
| Segment Number # 4 | RAMP | | |
| Parameter | Mode | Initial Value | Final Value |
| Amplitude | Static | 13,5 Vpp | - - - |
| Parameter | Value | | |
| Segment Duration | 1 Minutes | | |
| | | | |
| Battery: | | End of Test: | |
| Current Limit: | 100 A | Voltage: | 13,5 V |

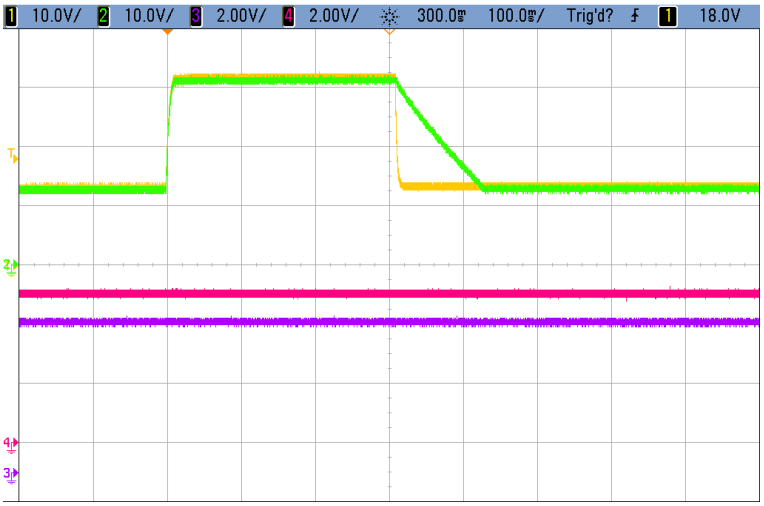



*Fig 3.1: E-05 pulse applied to KL30.*
*Yellow trace is KL30, green UB, red VDD, violet Reset.*

*VDD and Reset are not affected.*