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Page 1: Tabular data: efficiency and main waveform with resistive load simulating 1 cell battery during main charging.

Target charging is 1.0A +/-20%

Main choke is DR125-100 (10uHy) from Cooper; main switch is CSD25401Q3 from TI
Current charging and efficiency:

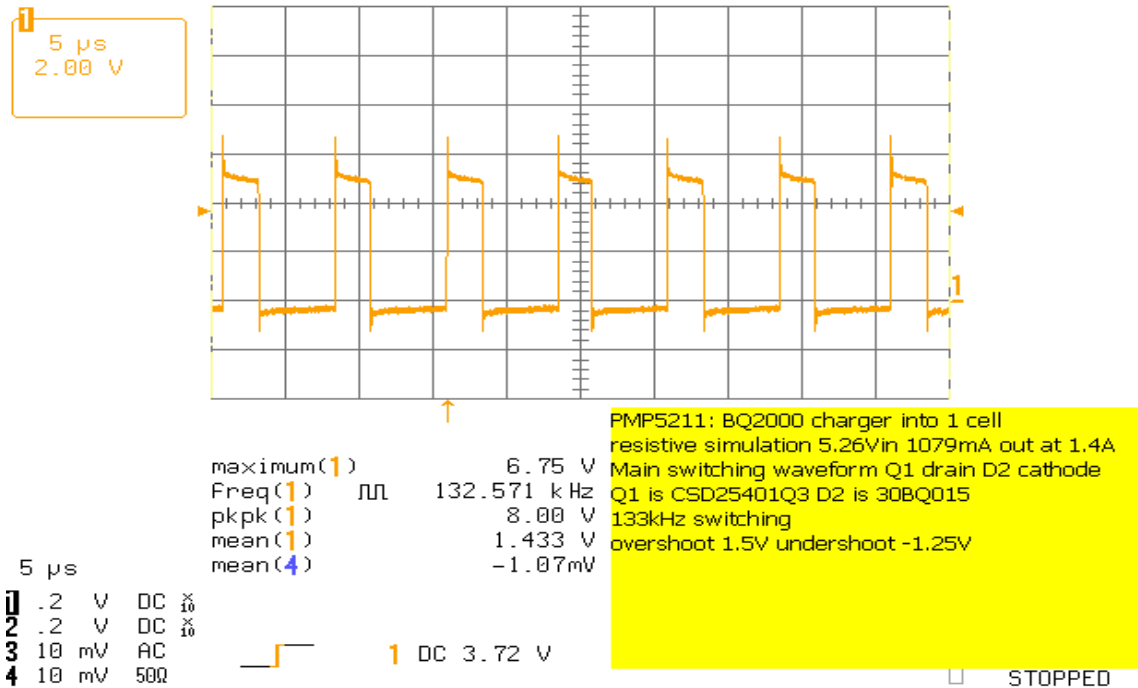
Vin Volts	Iin mA	Vout Volts	Iout mA	Loss mW	Efficiency %
4.76	416.5	1.3875	1074	492	75.2
5.00	401.5	1.394	1076	508	74.7
5.26	386.5	1.400	1079	522	74.3
4.76	384.5	1.205	1101.5	503	72.5
5.00	367.5	1.200	1103	514	72.0
5.26	352.5	1.200	1107	526	71.6
4.76	345.5	1.002	1132	510	69.0
5	332	0.998	1133	529	68.1
5.25	316	0.992	1136	532	67.9
With	Actual	batteries	2x450mAH	RadioShack	Size D
5.00	426	1.556	1049	498	76.6
4.995	431	1.588	1045	493	77.1

From room ambient clamp diode D2 30BQ015 from IR / Vishay is hottest part at 45 degrees Celsius.

During actual charging, cell voltage is above 1.4V and below 1.6V most of the time.

Major switching waveform of Q1:

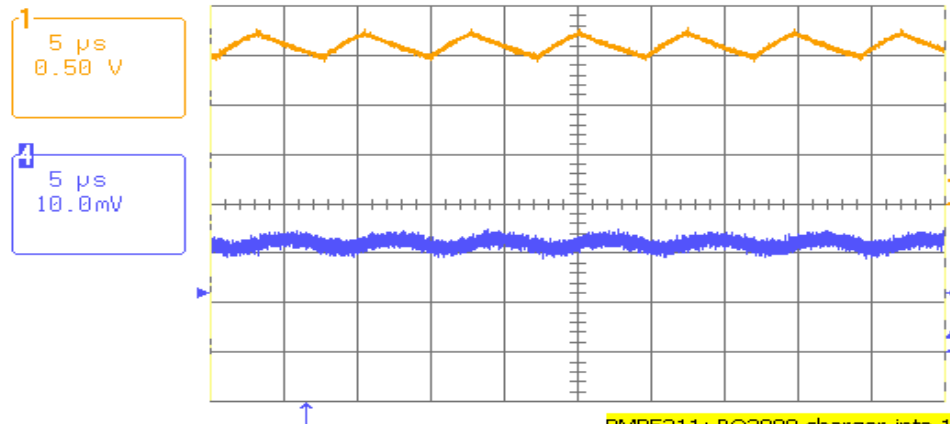
29-Oct-09
18:29:34



Actual testing with batteries:

Normal charging:

30-Oct-09
17:01:09



maximum(1)	1.776 V
Freq(1)	150.076 kHz
pkpk(1)	359 mV
mean(1)	1.5928 V
mean(4)	21.48 mV

5 μs

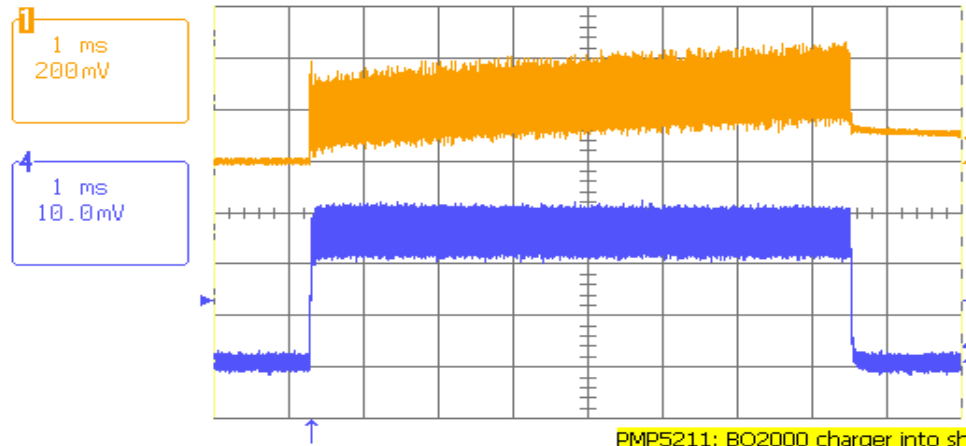
1	.5 V	DC
2	.2 V	DC
3	10 mV	AC
4	10 mV	50Ω

4 DC 11.8mV

PMP5211: BQ2000 charger into 1 cell
4.995Vin 431mAin 1.588Vout 1045mA out on DVM
77% efficiency
Normal full charging voltage and current waveforms
Channel 1 brown is voltage out of charger going to batteries (2x 450mAH Radio Shack D size NiMH)
Ripple voltage high because of wiring resistance
Channel 4 is current into batteries: 500mA/div

Start up into a shorted cell:

30-Oct-09
13:56:23



maximum(1)	468 mV
Freq(1)	56.8323 kHz
pkpk(1)	481 mV
mean(1)	157.2 mV
mean(4)	18.00 mV

1 ms

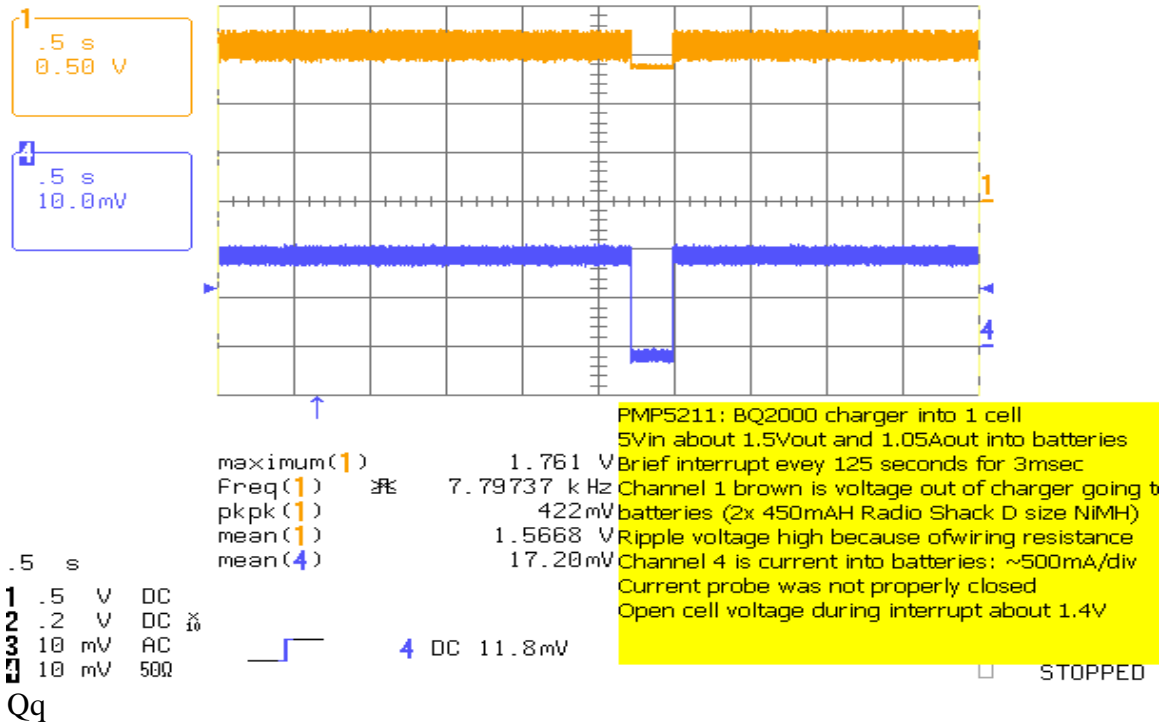
1	.2 V	DC
2	.2 V	DC
3	10 mV	AC
4	10 mV	50Ω

4 DC 11.8mV

PMP5211: BQ2000 charger into shorted cell
5Vin
Channel 1 brown is voltage out of charger going to damaged battery
Channel 4 is current into batteries: 500mA/div
Pulse duration 7+msec

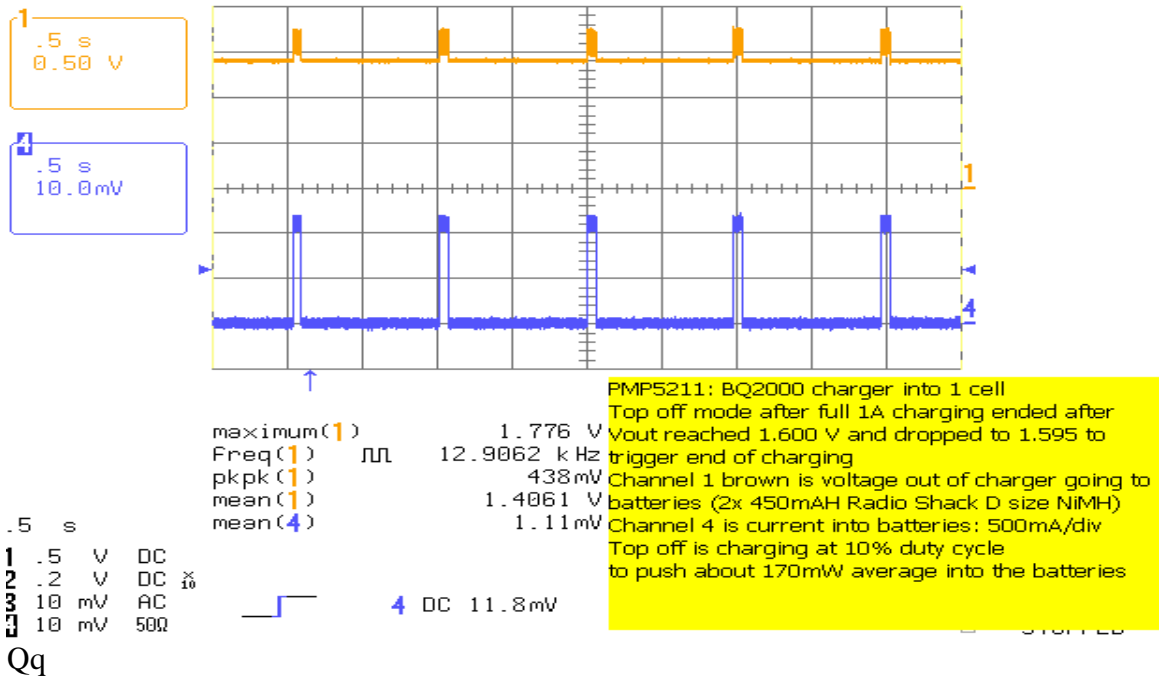
Short interruption every 125 seconds (MTO/128) by BQ2000 during full charging:
 This is when charging is turned off to make the accurate voltage measurement on the battery to determine when to activate the PVD charge termination.

30-Oct-09
 16:48:48



Top off mode: After PVD triggered termination:

30-Oct-09
 18:08:09



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