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AM2LS-EZ

SMD Package

The AM2LS-EZ is a 2W SMD DC/DC converter that offers great cost savings thanks to an improved manufacturing process. It also features excellent reliability and performance while offering a standard input voltage range of 5-24VDC as well as an output voltage of 3.3-24V. This compact SMD design will surely benefit your new system design.

This new series offers great operating temperatures, from -40 to 105°C with full power up to 85°C. Also, an isolation of 1500VDC & 3000VDC for improved reliability and system safety as well as a great 3,500,000h MTBF come standard.

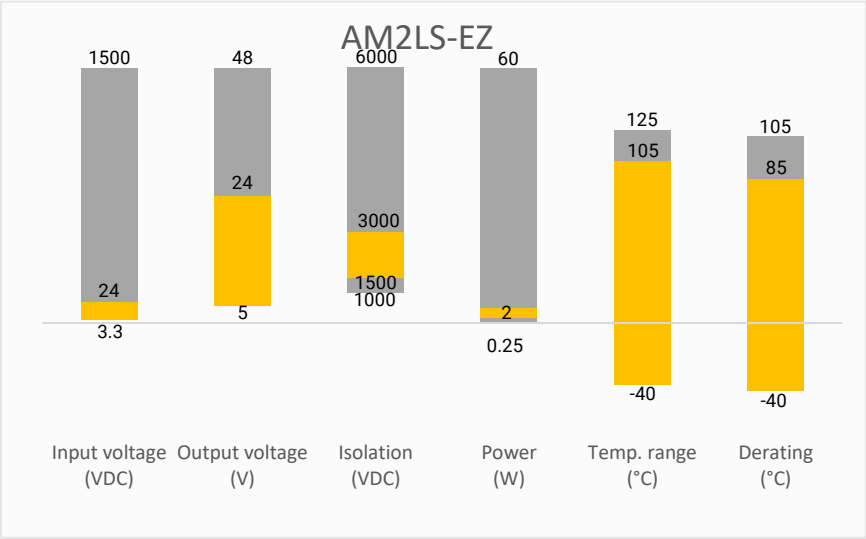
The AM2LS-EZ is suitable for instrumentation, industrial control, industrial applications, communication and IoT applications.

Features

- High I/O Isolation 1500VDC & 3000VDC
- Continuous Short circuit protection
- Operating Temp: -40 °C to +105 °C
- Low profile case height: 6.25mm
- Compact footprint and high-power Density
- Efficiency up to 89%
- Unregulated output
- Made in Taiwan

RoHS · 3yr Warranty · CE · cULus

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

IoT · Industrial · Telecom · Portable Equipment

Models & Specifications

Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current max (mA)	Isolation (VDC)	Maximum capacitive Load (µF)	Efficiency Typ. (%)
AM2LS-0503SEZ	5 (4.5-5.5)	3.3	600	1500	2400	78
AM2LS-0505SEZ	5 (4.5-5.5)	5	400	1500	2400	85
AM2LS-0509SEZ	5 (4.5-5.5)	9	223	1500	820	87
AM2LS-0512SEZ	5 (4.5-5.5)	12	167	1500	470	87
AM2LS-0515SEZ	5 (4.5-5.5)	15	133	1500	220	88
AM2LS-0524SEZ	5 (4.5-5.5)	24	84	1500	100	89
AM2LS-1203SEZ	12 (10.8-13.2)	3.3	600	1500	2400	80
AM2LS-1205SEZ	12 (10.8-13.2)	5	400	1500	2400	85
AM2LS-1209SEZ	12 (10.8-13.2)	9	223	1500	820	87
AM2LS-1212SEZ	12 (10.8-13.2)	12	167	1500	470	87
AM2LS-1215SEZ	12 (10.8-13.2)	15	133	1500	220	88
AM2LS-1224SEZ	12 (10.8-13.2)	24	84	1500	100	89
AM2LS-1503SEZ	15 (13.5-16.5)	3.3	600	1500	2400	80
AM2LS-1505SEZ	15 (13.5-16.5)	5	400	1500	2400	85
AM2LS-1509SEZ	15 (13.5-16.5)	9	223	1500	820	87
AM2LS-1512SEZ	15 (13.5-16.5)	12	167	1500	470	87
AM2LS-1515SEZ	15 (13.5-16.5)	15	133	1500	220	88
AM2LS-1524SEZ	15 (13.5-16.5)	24	84	1500	100	89
AM2LS-2403SEZ	24 (21.6-26.4)	3.3	600	1500	2400	80
AM2LS-2405SEZ	24 (21.6-26.4)	5	400	1500	2400	85
AM2LS-2409SEZ	24 (21.6-26.4)	9	223	1500	820	87
AM2LS-2412SEZ	24 (21.6-26.4)	12	167	1500	470	87
AM2LS-2415SEZ	24 (21.6-26.4)	15	133	1500	220	88
AM2LS-2424SEZ	24 (21.6-26.4)	24	84	1500	100	89
AM2LS-0503SH30EZ	5 (4.5-5.5)	3.3	600	3000	2400	78
AM2LS-0505SH30EZ	5 (4.5-5.5)	5	400	3000	2400	85
AM2LS-0509SH30EZ	5 (4.5-5.5)	9	223	3000	820	87
AM2LS-0512SH30EZ	5 (4.5-5.5)	12	167	3000	470	87
AM2LS-0515SH30EZ	5 (4.5-5.5)	15	133	3000	220	88
AM2LS-0524SH30EZ	5 (4.5-5.5)	24	84	3000	100	89
AM2LS-1203SH30EZ	12 (10.8-13.2)	3.3	600	3000	2400	80
AM2LS-1205SH30EZ	12 (10.8-13.2)	5	400	3000	2400	85
AM2LS-1209SH30EZ	12 (10.8-13.2)	9	223	3000	820	87
AM2LS-1212SH30EZ	12 (10.8-13.2)	12	167	3000	470	87
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AM2LS-1503SH30EZ	15 (13.5-16.5)	3.3	600	3000	2400	80
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AM2LS-1524SH30EZ	15 (13.5-16.5)	24	84	3000	100	89
AM2LS-2403SH30EZ	24 (21.6-26.4)	3.3	600	3000	2400	80
AM2LS-2405SH30EZ	24 (21.6-26.4)	5	400	3000	2400	85
AM2LS-2409SH30EZ	24 (21.6-26.4)	9	223	3000	820	87

AM2LS-2412SH30EZ	24 (21.6-26.4)	12	167	3000	470	87
AM2LS-2415SH30EZ	24 (21.6-26.4)	15	133	3000	220	88
AM2LS-2424SH30EZ	24 (21.6-26.4)	24	84	3000	100	89

Note: Use suffix "TR" for tape & reel packing (ex. AM2LS-0505SEZTR).

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Filter	Capacitor			

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 0.5mA	>1500	--	VDC
	60 sec, leakage ≤ 0.5mA for H30 models	>3000	--	VDC
Resistance	500VDC	>1000	--	MΩ
Capacitance	I/O 100kHz/0.1V	20	--	pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	100% load	--	±5	%
Line regulation	Per 1% Vin change	1.2	--	%
Load regulation	10-100% load, 3.3Vout models		20	%
	10-100% load, 5Vout models	8	15	%
	10-100% load, 9Vout models	6	10	%
	10-100% load, 12Vout models	5	10	%
	10-100% load, 15Vout models	4	10	%
	10-100% load, 24Vout models	3	10	%
Ripple & Noise*		75	150	mV pk-pk
Minimum load**	--	10	--	%

* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details.
** If the required power is less than 10% of the rated converter output, connect a bleeder resistor in parallel with the load to satisfy the minimum load requirement.

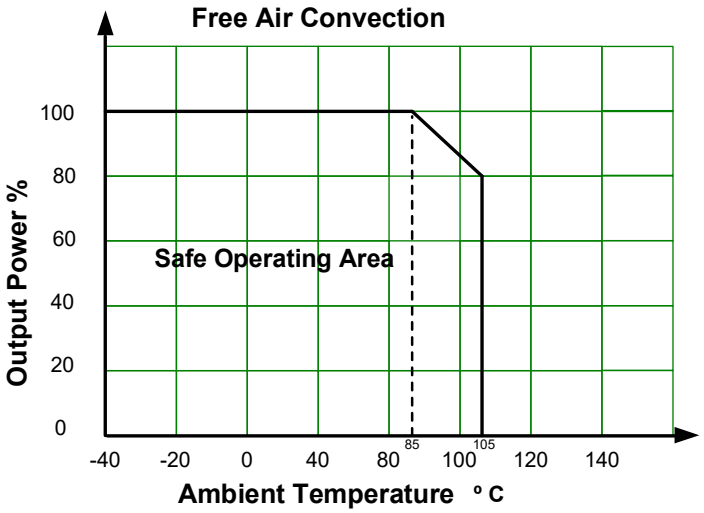
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load, nominal input, 5Vin models	215	--	KHz
	Full load, nominal input, others	250	--	KHz
Short circuit protection	Continuous			
Operating temperature	With derating at 85°C	-40 to +105	--	°C
Storage temperature	--	-55 to +125	--	°C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Case material	Black plastic (flammability to UL 94V-0)			
Weight	24V input/output models	1.28	--	g
	Others	1.2	--	g
Dimensions	24V input/output models	0.50 x 0.44 x 0.27 inches (12.80 x 11.10 x 6.90 mm)		
	Others	0.50 x 0.44 x 0.25 inches (12.70 x 11.05 x 6.25 mm)		
MTBF	3 500 000 hrs (MIL-HDBK -217F, t=+25ºC) / Full Load			

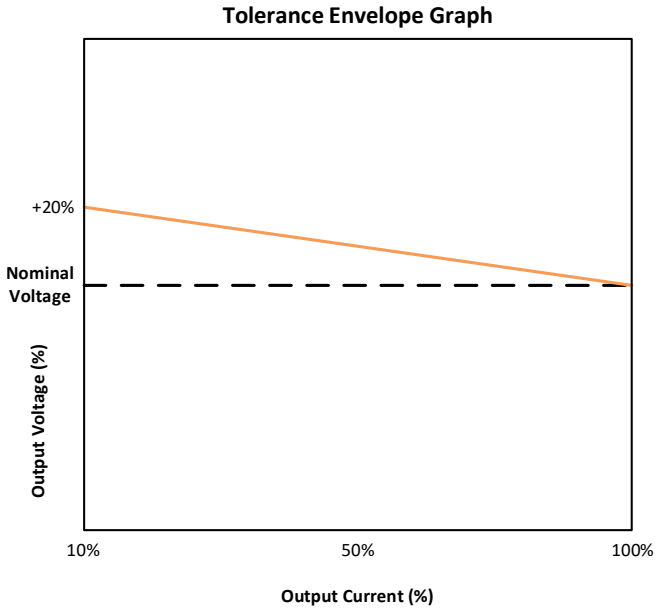
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications		
Parameters		
Agency approvals	IEC/EN/UL 62368-1	
Standards	EMC - Conducted and radiated emission	CISPR32 / EN55032, class B with the recommended EMI circuit
	Electrostatic Discharge Immunity	IEC 61000-4-2 Air ±8KV, Contact ±6KV, Criteria B

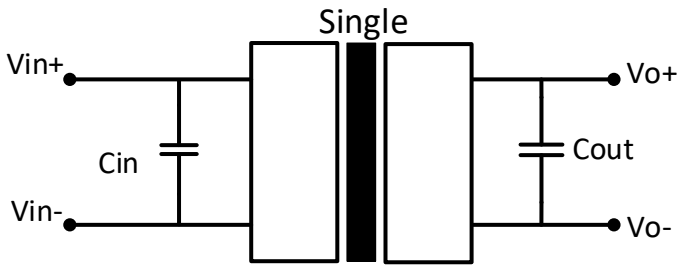
Derating



Output voltage tolerance

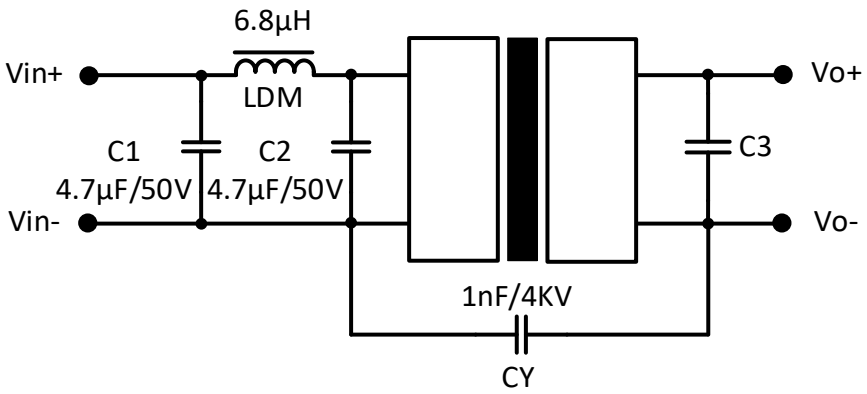


Typical application circuit



Vin	Cin	Vout	Cout
5V	4.7μF/25V	5V	10μF/16V
12V	2.2μF/25V	9V	2.2μF/16V
15V	2.2μF/25V	12V	2.2μF/25V
24V	1μF/50V	15V	1μF/25V
		24V	1μF/50V

EMI Recommended circuit



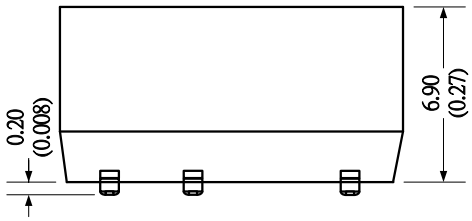
C3: Refer to Cout in typical circuit.

Dimensions

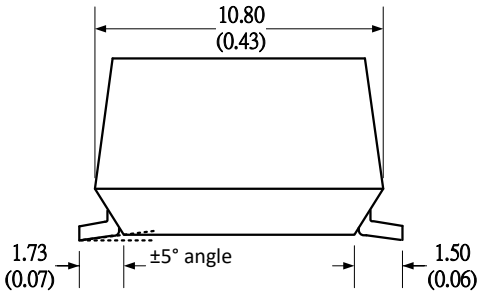
For 24Vin/Vout models

Pin Out Specifications	
Pin	Single
1	-V Input
2	+V Input
3	-
4	-V Output
5	+V Output
6	-
7	-
8	NC

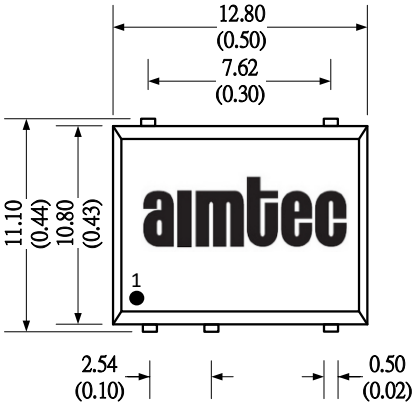
Side View

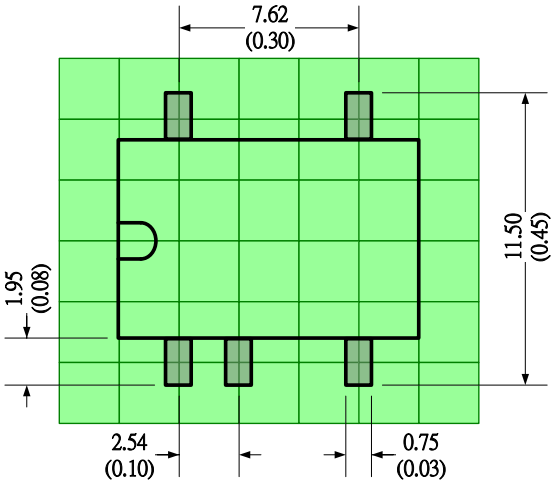


Front View



Top View

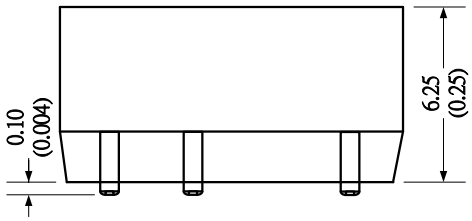




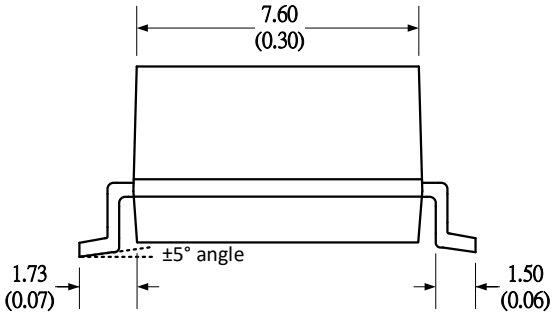
Note:
Unit: mm(inch)
General tolerance: ±0.25 (0.01)
Pin tolerance: ±0.1 (0.004)

Other models

Side View

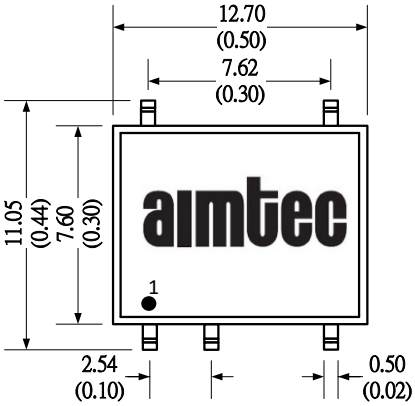


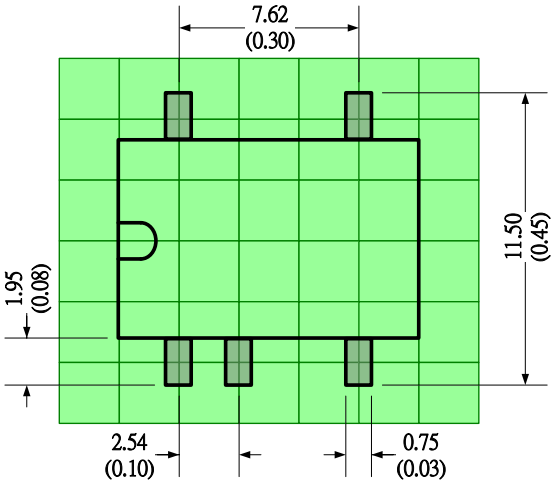
Front View



Pin Out Specifications	
Pin	Single
1	-V Input
2	+V Input
3	-
4	-V Output
5	+V Output
6	-
7	-
8	NC

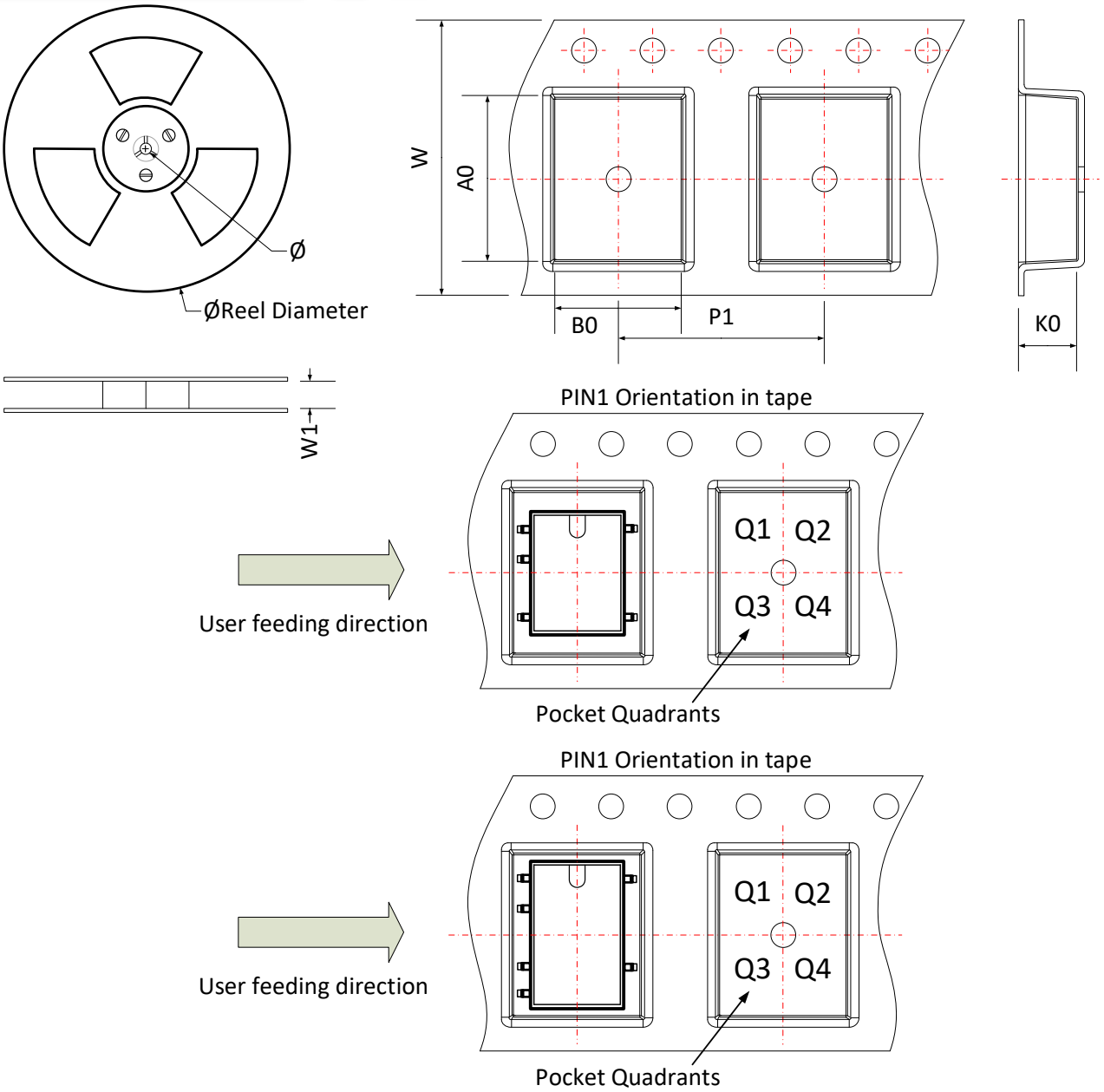
Top View





Note:
Unit: mm(inch)
General tolerance: ±0.25 (0.01)
Pin tolerance: ±0.1 (0.004)

Packing Information



Device	Package Type	Pin	MPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0	B0	K0	P1	W	P1 Quadrant
AM2LS-EZ Single output	SMD	5	350			13.3	12.36	7.6	20.0	24.0	Q1

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