

HYBRID IC VLA130-24205QR

4OUTPUT ISOLATED DC-DC CONVERTER

DISCRIPTIONS

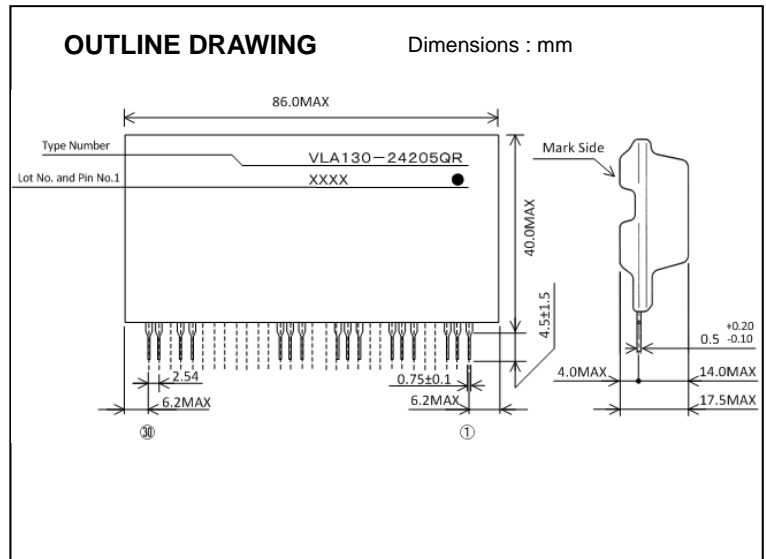
The VLA130-24205QR is an isolated type DC-DC converter which has 4 outputs for inverter drive. Isolation strength is 2500Vrms between the input and outputs, also each outputs.

FEATURES

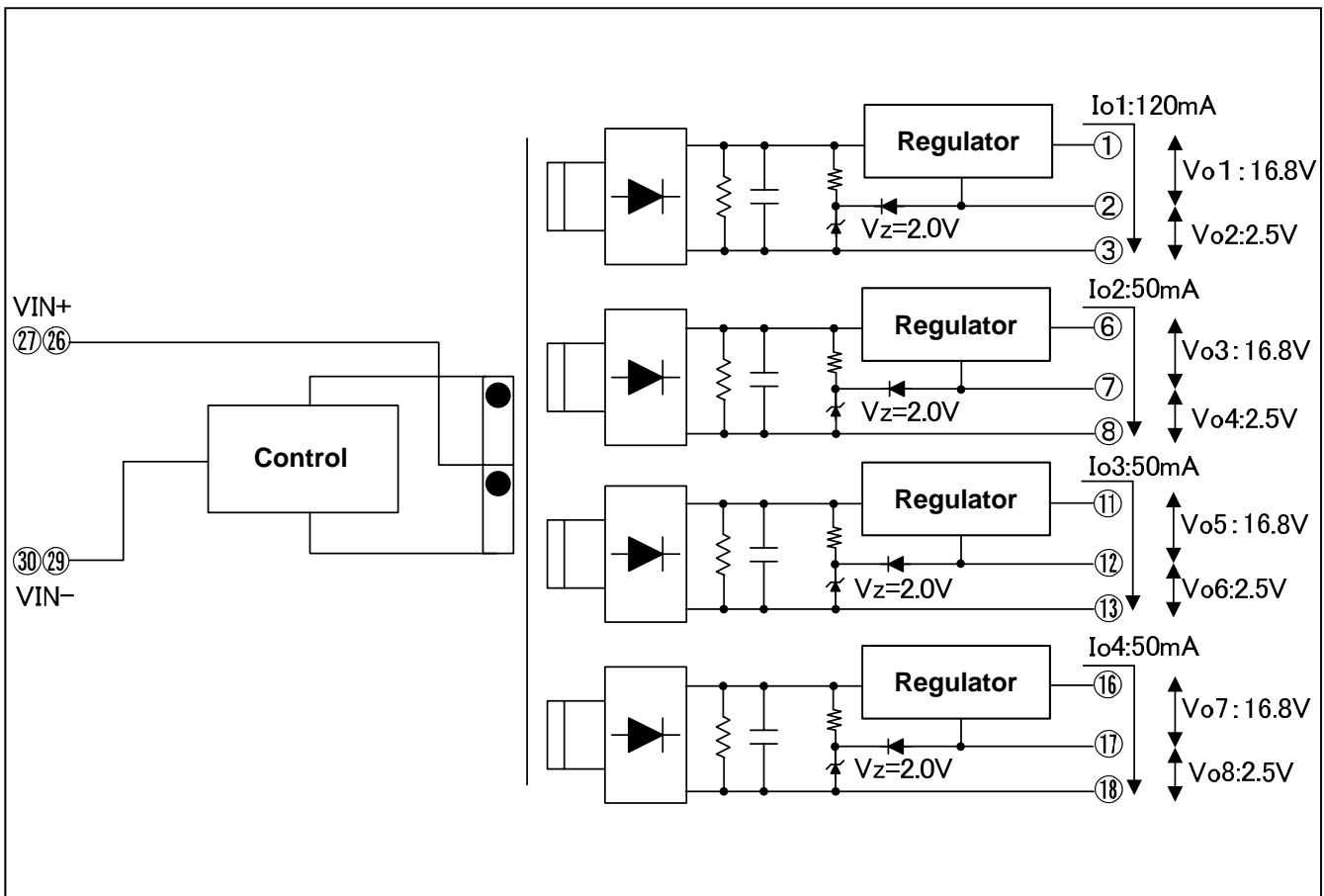
- Input voltage DC24V
- Output +16.8V,-2.5V/120mA x 1
 +16.8V,-2.5V/50mA x 3
- Isolation strength between Input to output
 2500Vrms, 1min.
- Isolation strength between Each outputs
 2500Vrms, 1min.
- RoHS compliance

APPLICATION

Power supply for IGBT etc.



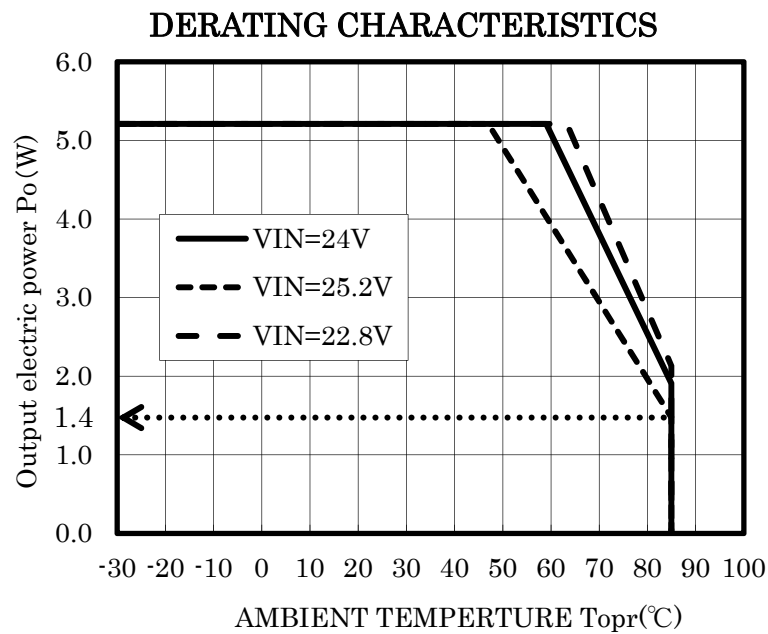
BLOCK DIAGRAM



MAXIMUM RATINGS (unless otherwise noted, $V_{IN}=24V, T_a=25^{\circ}C$)

Symbol	Parameter	Conditions	Ratings	Unit
V_{IN}	Input voltage	Between pins 26,27 and 29,30	26.0	V
I_o	Output current	Between pins 6-8,11-13,16-18	50	mA
		Between pins 1-3	120	
T_{opr}	Operating temperature	No condensation	-30 ~ +85(*1)	$^{\circ}C$
T_{stg}	Storage temperature	No condensation	-40 ~ +85	$^{\circ}C$
Viso1	Isolation voltage between input and output	Sine wave voltage, 60Hz, 1min	2500	Vrms
Viso2	Isolation voltage between each output	Sine wave voltage, 60Hz, 1min	2500	Vrms

(*1) Please refer to de-rating characteristics.



HYBRID IC
VLA130-24205QR

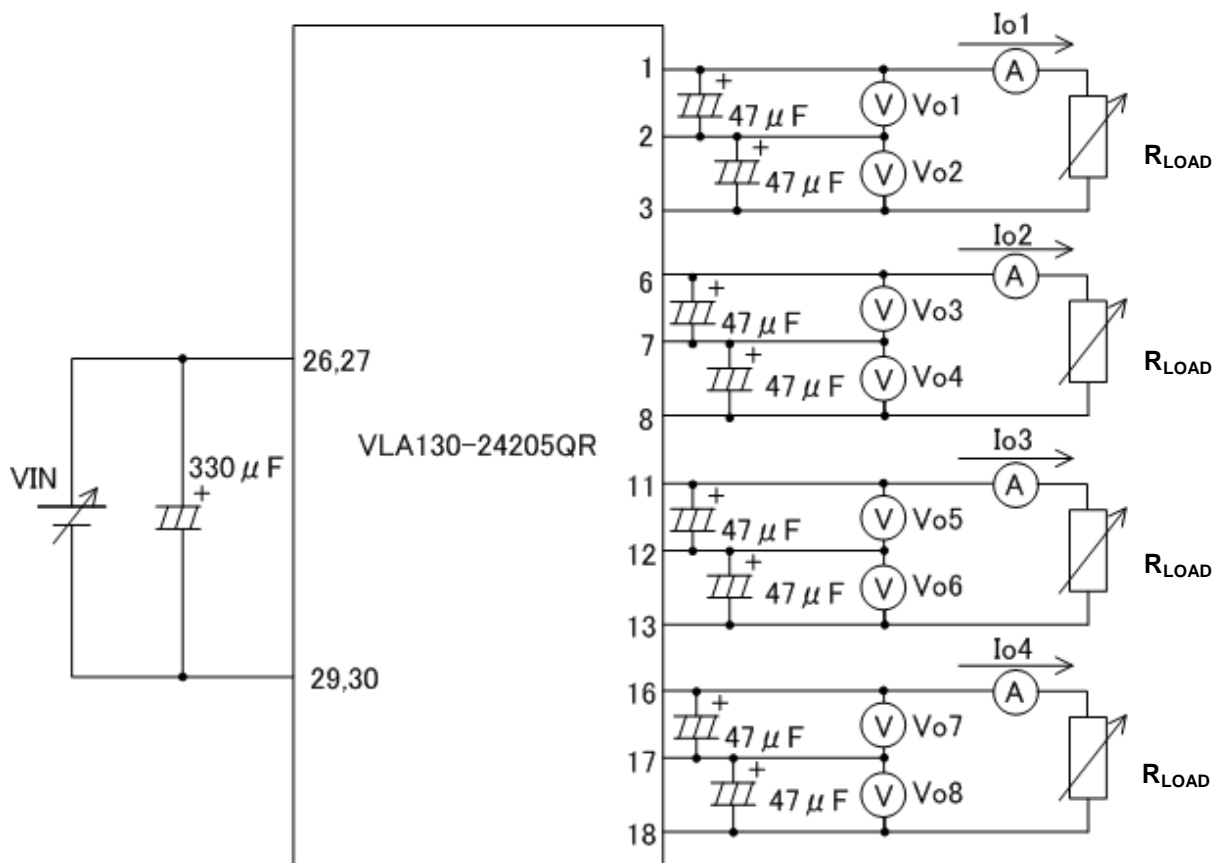
4OUTPUT ISOLATED DC-DC CONVERTER

• **ELECTRICAL CHARACTERISTICS** (unless otherwise noted, $V_{IN}=24V, T_a=25^{\circ}C$)

Symbol Symbol	Parameter	Test conditions	Limits			Unit
			Limits	Unit	Symbol	
V_{IN}	Input voltage	Recommended range	22.8	24	25.2	V
$V_o I$	Output current I	Between pins1-2,6-7,11-12,16-17 $Io1=0\sim 120mA, Io2\sim 4=0\sim 50mA$	15.8	16.8	17.8	V
$V_o II$	Output current II	Between pins2-3,7-8,12-13,17-18 $Io1\sim 4=0mA$	1.5	2.5	3.5	v
Reg_{-L}	Load regulation	Between pins1-2,6-7,11-12,16-17 $Io1=120mA, Io2\sim 4=0\sim 50mA$	-	-	450	mV
		Between pins1-2,6-7,11-12,16-17 $Io1=0\sim 120mA, Io2\sim 4=50mA$	-	-	600	mV
V_{p-p}	Output ripple	Between pins1-2,6-7,11-12,16-17 $Io1=120mA, Io2\sim 4=0\sim 50mA$	-	180 (*2)	-	mVp-p
η	Efficiency	$Io1=120mA, Io2\sim 4=50mA$	-	65	-	%

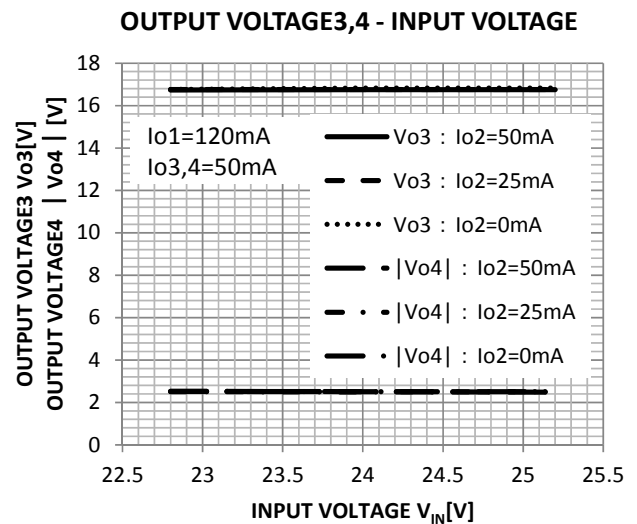
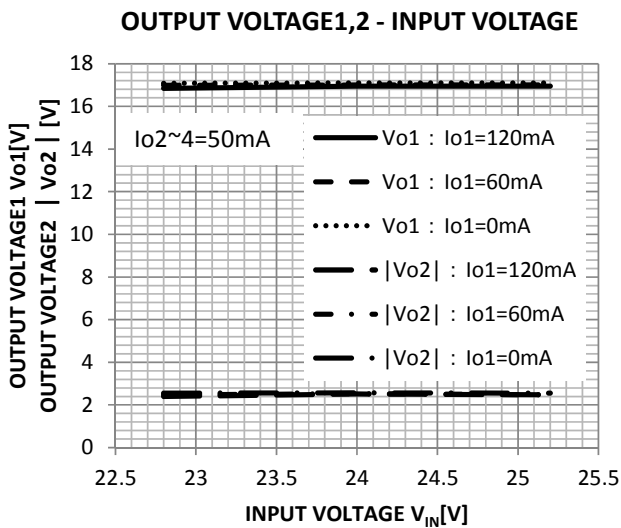
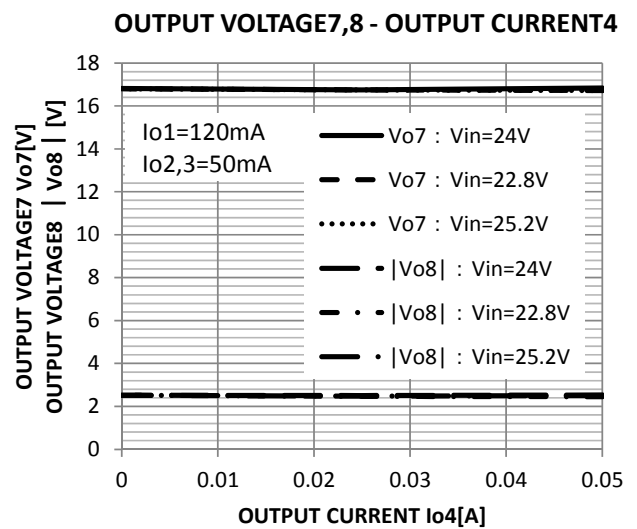
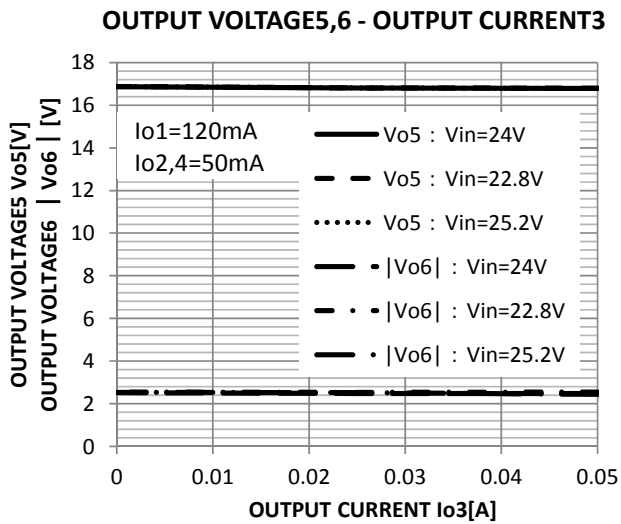
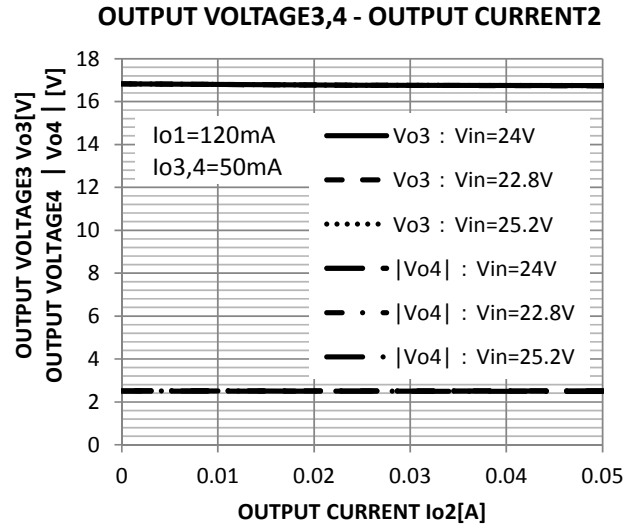
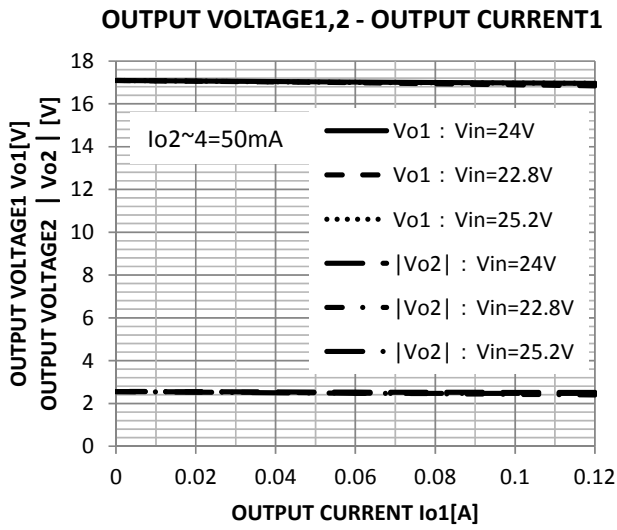
(*2) Not contain the spike noise.

TEST CIRCUIT

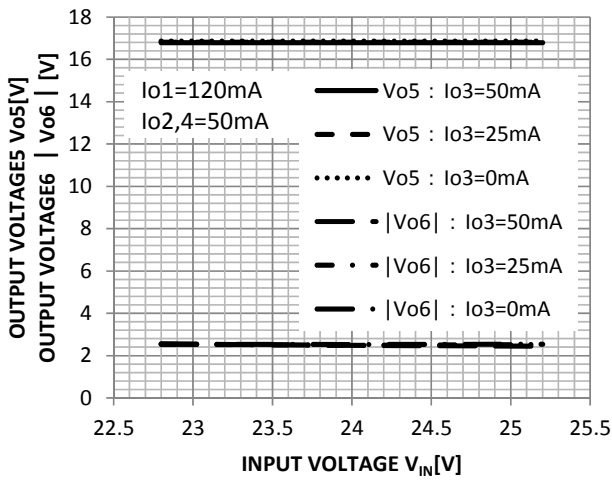


The capacitors are low impedance article.

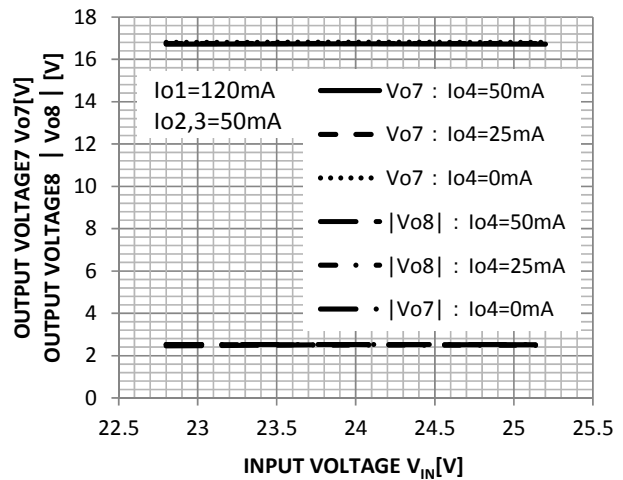
· TYPICAL CHARACTERISTIC CURVES(Ta=25°C)



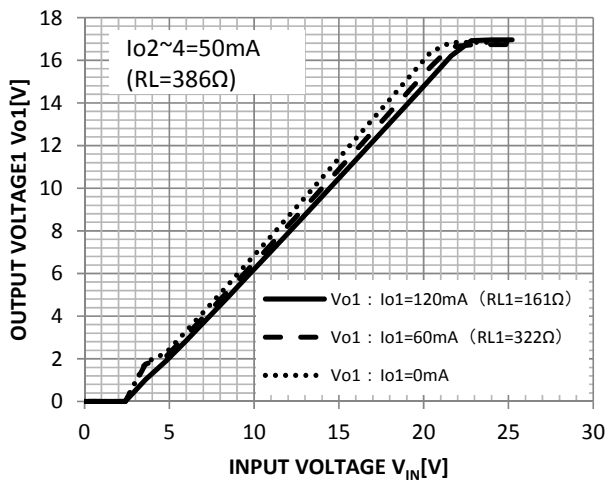
OUTPUT VOLTAGE5,6 - INPUT VOLTAGE



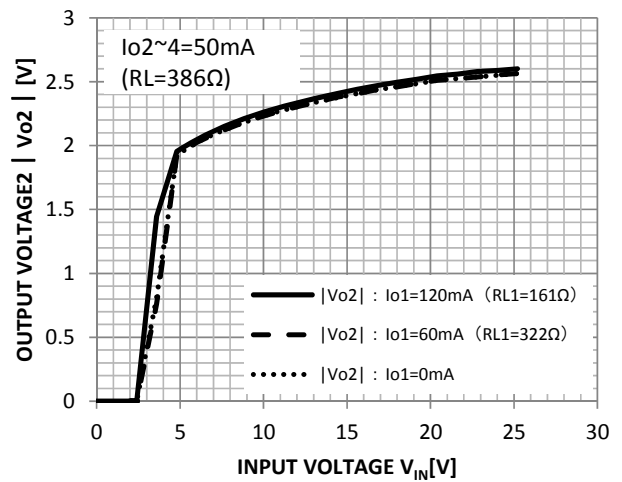
OUTPUT VOLTAGE7,8 - INPUT VOLTAGE



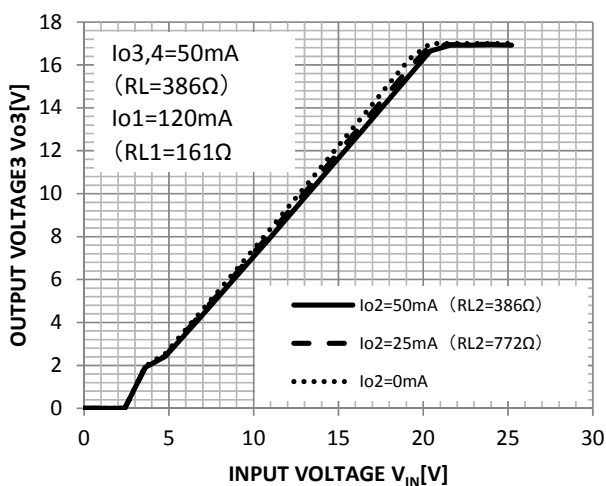
OUTPUT VOLTAGE1 - INPUT VOLTAGE



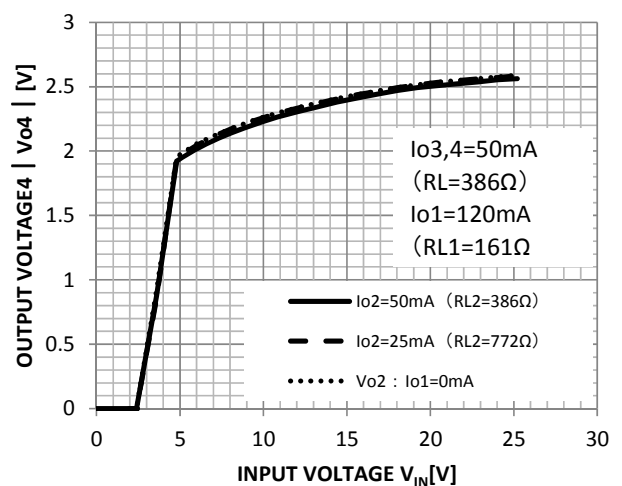
OUTPUT VOLTAGE2 - INPUT VOLTAGE



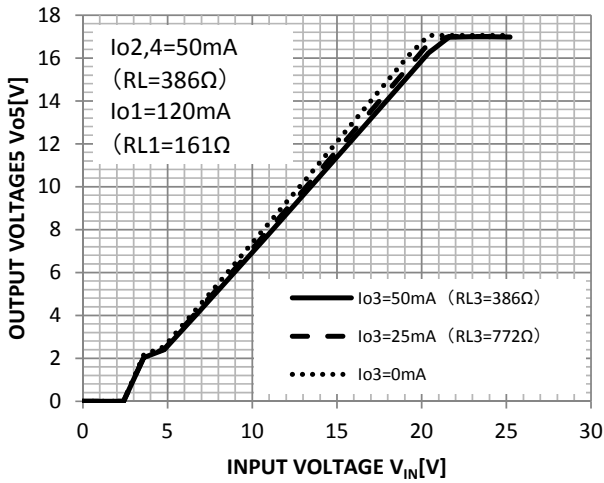
OUTPUT VOLTAGE3 - INPUT VOLTAGE



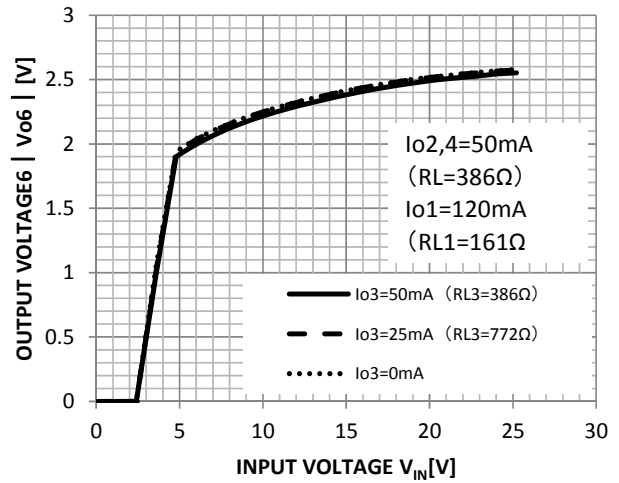
OUTPUT VOLTAGE4 - INPUT VOLTAGE



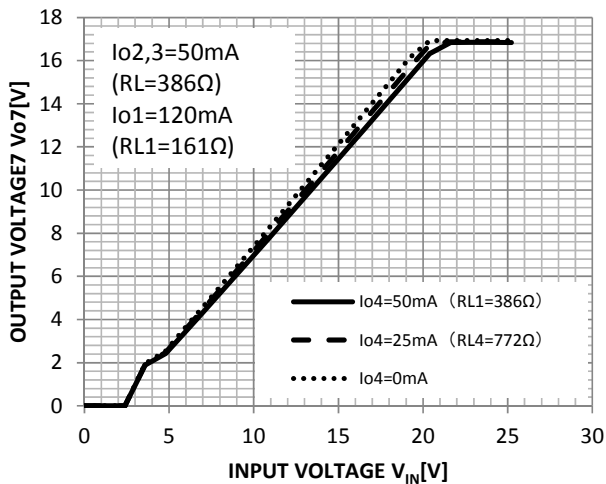
OUTPUT VOLTAGE5 - INPUT VOLTAGE



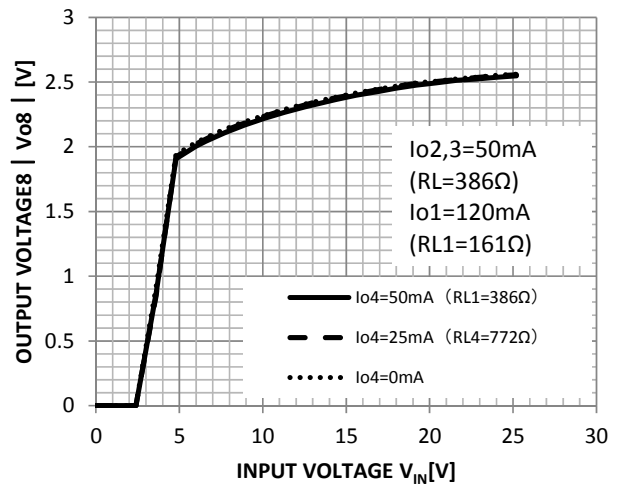
OUTPUT VOLTAGE6 - INPUT VOLTAGE



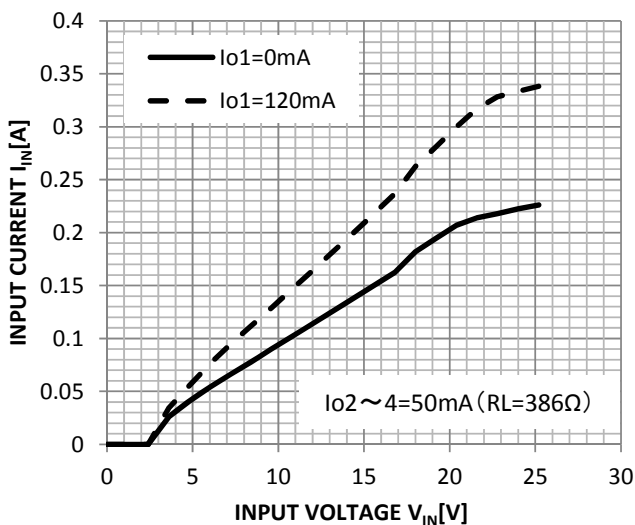
OUTPUT VOLTAGE7 - INPUT VOLTAGE



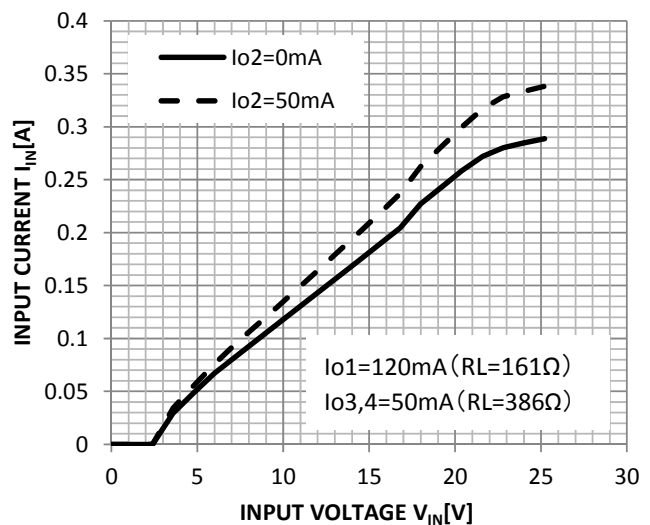
OUTPUT VOLTAGE8 - INPUT VOLTAGE



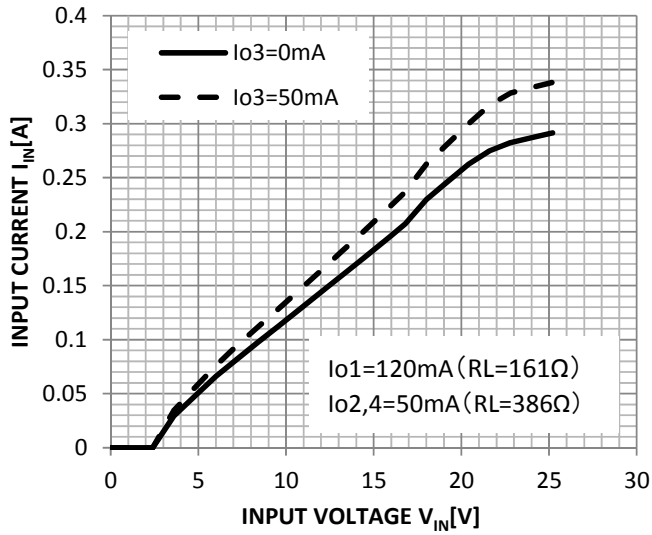
INPUT CURRENT - INPUT VOLTAGE



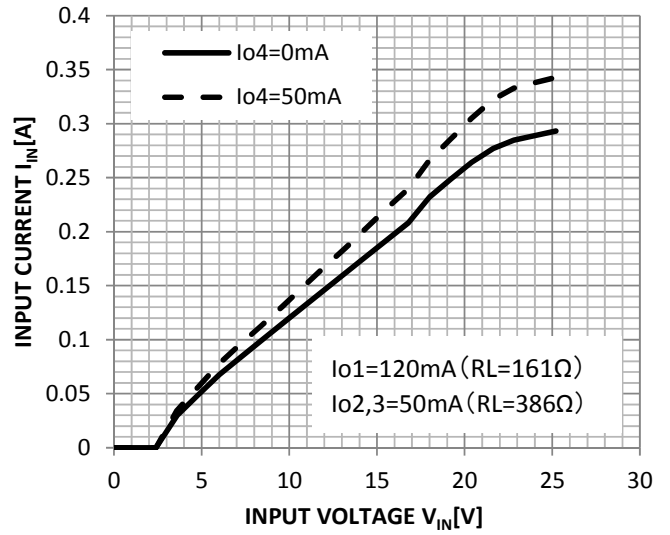
INPUT CURRENT - INPUT VOLTAGE



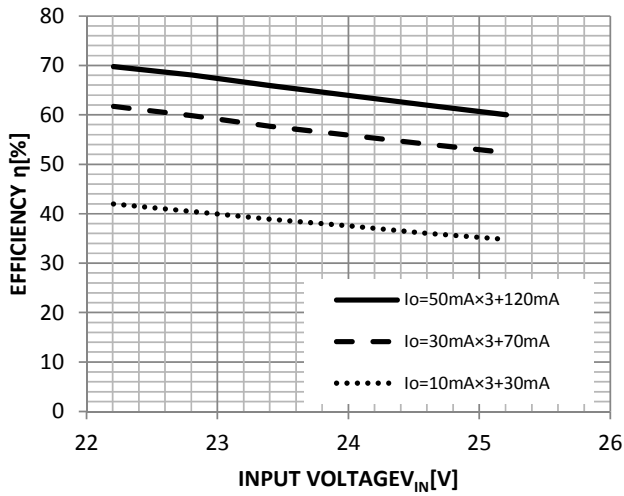
INPUT CURRENT - INPUT VOLTAGE



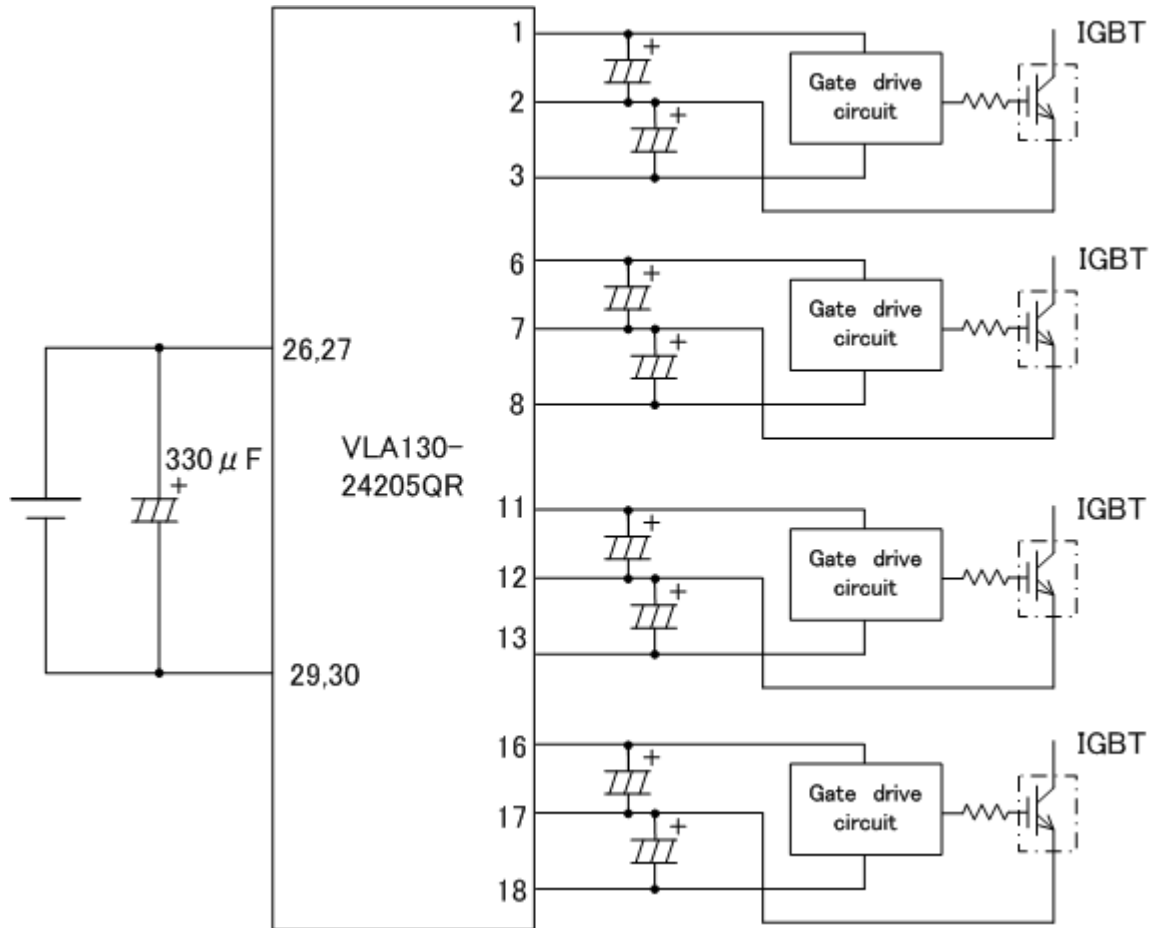
INPUT CURRENT - INPUT VOLTAGE



EFFICIENCY - INPUT VOLTAGE



• APPLICATION EXAMPLE



PRECAUTION

Voltage compensate capacitors are expected to be located as close as possible to the Hybrid IC.

FOR SAFETY USING

Great detail and careful attention are given to the production activity of products, such as the development, the quality of production, and in its reliability. However the reliability of products depends not only on their own factors but also in their condition of usage. When handling products, please note the following cautions.

CAUTIONS	
Packing	The materials used in packing products can only withstand normal external conditions. When exposed to outside shocks, rain and certain environmental contaminators, the packing materials will deteriorates. Please take care in handling.
Carrying	<ol style="list-style-type: none"> 1) Don't stack boxes too high. Avoid placing heavy materials on boxes. 2) Boxes must be positioned correctly during transportation to avoid breakage. 3) Don't throw or drop boxes. 4) Keep boxes dry. Avoid rain or snow. 5) Minimal vibration and shock during transportation is desirable.
Storage	<p>When storing products, please observe the following notices or possible deterioration of their electrical characteristics, risk of solderability, and external damage may occur.</p> <ol style="list-style-type: none"> 1) Devices must be stored where fluctuation of temperature and humidity is minimal, and must not be exposed to direct sunlight. Store at the normal temperature of 5 to 30 degrees Celsius with humidity at 40 to 60%. 2) Avoid locations where corrosive gasses are generated or where much dust accumulates. 3) Storage cases must be static proof. 4) Avoid putting weight on boxes.
Extended storage	When extended storage is necessary, products must be kept non-processed. When using products which have been stored for more than one year or under severe conditions, be sure to check that the exterior is free from flaw and other damages.
Maximum ratings	To prevent any electrical damages, use products within the maximum ratings. The temperature, current, voltage, etc. must not exceed these conditions.
Polarity	To protect products from destruction and deterioration due to wrong insertion, make sure of polarity in inserting leads into the board holes, conforming to the external view for the terminal arrangement.

Keep safety first in your circuit designs!

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