Fast transient response, rush current protection 300mA LDO

MM3871 Series

Overview

This IC is a 300mA Low dropout regulator IC with Rush current protection circuit.
No load input current is 25μA typ. and it reduce drop voltage for high speed response.
Rush current protection circuit can control rush current.
The package is a small PLP-4C (1mm x 1mm), ideal for mobile devices.

Features

- Rush current protection
- High speed response
- Small package

Main specifications

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

- Maximum rating supply voltage : -0.3V to 7V
- Operating voltage range : 2V to 6.5V
- Operating ambient temperature : -40℃ to 85℃
- Output current : 300mA
- Input current (OFF) : Typ. 0.01uA
- No-load input current : Typ. 25uA
- Output voltage range : 1V to 5V (0.05V step)
- Output voltage accuracy : ±1% (2.0V≦VOUT(Typ.))
  ±20mV (VOUT(Typ.)<2.0V)
- Line regulation : Typ. 0.01%/V (1.1V≦VOUT(Typ.), VDD=VOUT(Typ.)+0.5V to 6.5V)
  Typ. 0.01%/V (VOUT(Typ.)<1.1V, VDD=VOUT(Typ.)+1V to 6.5V)
- Load regulation : Typ. 10mV (IOUT=1mA to 150mA)
  Typ. 30mV (IOUT=1mA to 300mA)
- Dropout voltage : Typ. 0.62V (IOUT=300mA, VOUT(Typ.)=3V)
- PSRR : Typ. 70dB (f=1kHz)
- Output capacitor : 1.0uF (Ceramic capacitor)
- Protection function : Over current protection, Rush current protection
- Additional function : ON/OFF control, Auto discharge

Packages

- PLP-4C

Application

- Audio visual equipment
- Portable communication device
- Photographing / Imaging device
- Wearable device

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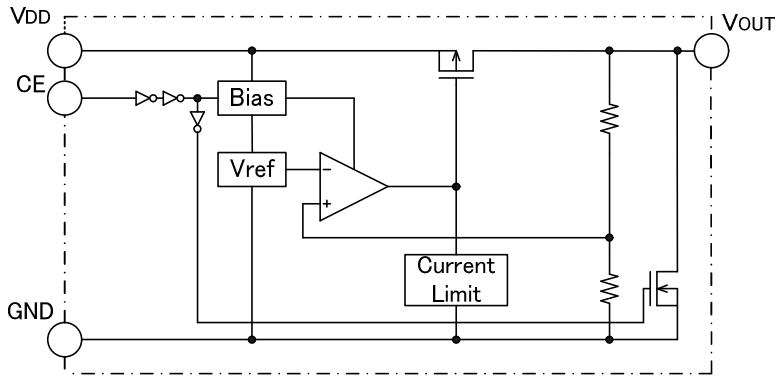
Model Name

M M 3 8 7 1 X X X X X E

Series name (A) (B) (C) (D)

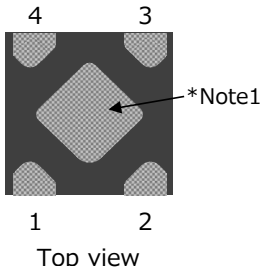
(A)	Function Type	A Z	CE=H active, with discharge function
(B)	Output voltage rank	10 ~ 50	(A)="A" the output voltage can be designated in the range from 1.00V(10) to 5.00V(50) in 0.1V steps. (A)="Z" the output voltage can be designated in the range from 1.05V(10) to 4.95V(49) in 0.05V steps.
(C)	Package	R	PLP-4C
(D)	Packing specifications	R	R housing (Standard)

Block Diagram



Pin Configuration

- PLP-4C



Top view

Pin No.	Pin name	Function
1	V_{OUT}	Output pin
2	GND	GND pin
3	CE	ON/OFF-control pin Connect CE pin with VDD pin, when it is not used.
4	V_{DD}	Voltage supply pin

*Note1:Heat spreader bottom with GND.

Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit
Storage temperature	Tstg	-55	150	℃
Junction temperature	Tj_{MAX}	-	150	℃
Supply voltage	V_{DD}	-0.3	7.0	V
CE input voltage	V_{CE}	-0.3	7.0	V
Output voltage	V_{OUT}	-0.3	7.0	V
Output current	I_{OUT}	0	500	mA
Power dissipation *Note2	Pd1	-	1300	mW

*Note2:JEDEC51-7 standard

Recommended Operating Conditions

Item	Symbol	Min.	Max.	Unit
Operating ambient temperature	Topr	-40	85	℃
Operating junction temperature	Tjop	-40	125	℃
Operating voltage	Vop	2.0	6.5	V
Output current	Iop	0	300	mA

Electrical Characteristics

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input current(OFF)	I_{DDOff}	V_{CE}=0V	-	0.01	1.0	μA
No-Load Input Current	I_{DD}	I_{OUT}=0mA	-	25	40	μA
Output voltage	V_{OUT}	I_{OUT}=10mA 2.00V≦VOUT	×0.99	-	×1.01	V
		I_{OUT}=10mA V_{OUT}<2.00V	-0.02	-	0.02	V
Line regulation	V_{LINE}	V_{OUT}(Typ.)+0.5V≦V_{DD}≦6.5V V_{OUT}(Typ.)≦1.10V, I_{OUT}=10mA	-	0.01	0.10	%/V
		V_{OUT}(Typ.)+1.0V≦V_{DD}≦6.5V V_{OUT}(Typ.)<1.05V, I_{OUT}=10mA				
Load regulation 1 *Note3	$V_{LOAD}1$	1mA≦I_{OUT}≦150mA	-	10	40	mV
Load regulation 2 *Note3	$V_{LOAD}2$	1mA≦I_{OUT}≦300mA	-	30	120	mV
Dropout voltage	Vio	別紙参照	-	-	-	V
Ripple rejection *Note4	RR	f=1kHz, Vripple=0.5V I_{OUT}=10mA	-	70	-	dB
Vout temperature coefficient *Note4	ΔV_{OUT} $/\Delta T_{OP}$	I_{OUT}=10mA -40≦Top≦85℃	-	±100	-	ppm/℃

*Note3:V_{DD}=2.5V at V_{OUT}≦1.5V.

*Note4:The parameter is guaranteed by design.

Electrical Characteristics

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output current limit *Note3	Ilim		300	500	-	mA
Output short-circuit current *Note4	Ishort	V_{OUT}=0V	-	50	-	mA
CE High threshold voltage	V_{CEH}		1.5	-	6.5	V
CE Low threshold voltage	V_{CEL}		-	-	0.3	V
CE High threshold current	I_{CEH}		-0.1	-	0.1	μA
CE Low threshold current	I_{CEL}		-0.1	-	0.1	μA
CL discharge resistance *Note4	Rdsc	V_{CE}=0V, V_{DD}=6V	-	10	-	Ω

*Note3:V_{DD}=2.5V at V_{OUT}≦1.5V.

*Note4:The parameter is guaranteed by design.

Electrical Characteristics

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

Model name	Item							
	Output voltage				Dropout voltage			
	V_{OUT} (V)				Vio (V)			
	Conditions	Min.	Typ.	Max.	Conditions	Min.	Typ.	Max.
MM3871A10	I_{OUT}=10mA	0.980	1.000	1.020	I_{OUT}=150mA 1.0V≦ V_{OUT}(Typ.)<1.9V *Note5	-	0.69	0.79
MM3871A11		1.080	1.100	1.120				
MM3871A12		1.180	1.200	1.220				
MM3871A13		1.280	1.300	1.320		-	0.60	0.70
MM3871A14		1.380	1.400	1.420				
MM3871A15		1.480	1.500	1.520				
MM3871A16		1.580	1.600	1.620		-	0.51	0.61
MM3871A17		1.680	1.700	1.720				
MM3871A18		1.780	1.800	1.820				
MM3871A19		1.880	1.900	1.920	I_{OUT}=150mA 1.9V≦V_{OUT}≦5.0V V_{DD}=V_{OUT}(TYP.)-0.2V	-	0.47	0.57
MM3871A20		1.980	2.000	2.020				
MM3871A21		2.079	2.100	2.121				
MM3871A22		2.178	2.200	2.222				
MM3871A23		2.277	2.300	2.323				
MM3871A24		2.376	2.400	2.424				
MM3871A25		2.475	2.500	2.525		-	0.31	0.41
MM3871A26		2.574	2.600	2.626				
MM3871A27		2.673	2.700	2.727				
MM3871A28		2.772	2.800	2.828				
MM3871A29		2.871	2.900	2.929				
MM3871A30		2.970	3.000	3.030				
MM3871A31		3.069	3.100	3.131				
MM3871A32		3.168	3.200	3.232				
MM3871A33		3.267	3.300	3.333				
MM3871A34		3.366	3.400	3.434				
MM3871A35		3.465	3.500	3.535		-	0.23	0.33
MM3871A36		3.564	3.600	3.636				
MM3871A37		3.663	3.700	3.737				
MM3871A38		3.762	3.800	3.838				
MM3871A39		3.861	3.900	3.939				
MM3871A40		3.960	4.000	4.040				
MM3871A41		4.059	4.100	4.141				
MM3871A42		4.158	4.200	4.242				
MM3871A43		4.257	4.300	4.343				
MM3871A44		4.356	4.400	4.444				
MM3871A45		4.455	4.500	4.545		-	0.19	0.28
MM3871A46		4.554	4.600	4.646				
MM3871A47		4.653	4.700	4.747				
MM3871A48		4.752	4.800	4.848				
MM3871A49		4.851	4.900	4.949				
MM3871A50		4.950	5.000	5.050				

*Note5:Dropout voltage MAX value in the input and it is confirmed that there is no output abnormal voltage impression the load 150mA in the model less than Vout<1.9V.

Electrical Characteristics

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

Model name	Item							
	Output voltage				Dropout voltage			
	V_{OUT} (V)				Vio (V)			
	Conditions	Min.	Typ.	Max.	Conditions	Min.	Typ.	Max.
MM3871Z10	I_{OUT}=10mA	1.030	1.050	1.070	I_{OUT}=150mA 1.0V≦ V_{OUT}(Typ.)<1.9V *Note5	-	0.69	0.79
MM3871Z11		1.130	1.150	1.170				
MM3871Z12		1.230	1.250	1.270				
MM3871Z13		1.330	1.350	1.370		-	0.60	0.70
MM3871Z14		1.430	1.450	1.470				
MM3871Z15		1.530	1.550	1.570				
MM3871Z16		1.630	1.650	1.670		-	0.51	0.61
MM3871Z17		1.730	1.750	1.770				
MM3871Z18		1.830	1.850	1.870				
MM3871Z19		1.930	1.950	1.970	I_{OUT}=150mA 1.9V≦V_{OUT}≦5.0V V_{DD}=V_{OUT}(TYP.)-0.2V	-	0.47	0.57
MM3871Z20		2.030	2.050	2.071				
MM3871Z21		2.129	2.150	2.172				
MM3871Z22		2.228	2.250	2.273				
MM3871Z23		2.327	2.350	2.374				
MM3871Z24		2.426	2.450	2.475				
MM3871Z25		2.525	2.550	2.576		-	0.31	0.41
MM3871Z26		2.624	2.650	2.677				
MM3871Z27		2.723	2.750	2.778				
MM3871Z28		2.822	2.850	2.879				
MM3871Z29		2.921	2.950	2.980				
MM3871Z30		3.020	3.050	3.081				
MM3871Z31		3.119	3.150	3.182				
MM3871Z32		3.218	3.250	3.283				
MM3871Z33		3.317	3.350	3.384				
MM3871Z34		3.416	3.450	3.485				
MM3871Z35		3.515	3.550	3.586		-	0.23	0.33
MM3871Z36		3.614	3.650	3.687				
MM3871Z37		3.713	3.750	3.788				
MM3871Z38		3.812	3.850	3.889				
MM3871Z39		3.911	3.950	3.990				
MM3871Z40		4.010	4.050	4.091				
MM3871Z41		4.109	4.150	4.192				
MM3871Z42		4.208	4.250	4.293				
MM3871Z43		4.307	4.350	4.394				
MM3871Z44		4.406	4.450	4.495				
MM3871Z45		4.505	4.550	4.596		-	0.19	0.28
MM3871Z46		4.604	4.650	4.697				
MM3871Z47		4.703	4.750	4.798				
MM3871Z48		4.802	4.850	4.899				
MM3871Z49		4.901	4.950	5.000				

*Note5:Dropout voltage MAX value in the input and it is confirmed that there is no output abnormal voltage impression the load 150mA in the model less than Vout<1.9V.

Electrical Characteristics

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

Model name	Item							
	Output voltage				Dropout voltage			
	V_{OUT} (V)				Vio (V)			
	Conditions	Min.	Typ.	Max.	Conditions	Min.	Typ.	Max.
MM3871A10	I_{OUT}=10mA	0.980	1.000	1.020	I_{OUT}=300mA 1.0V≦ V_{OUT}(Typ.)<2.7V *Note6	-	1.38	1.50
MM3871A11		1.080	1.100	1.120				
MM3871A12		1.180	1.200	1.220				
MM3871A13		1.280	1.300	1.320		-	1.20	1.40
MM3871A14		1.380	1.400	1.420				
MM3871A15		1.480	1.500	1.520				
MM3871A16		1.580	1.600	1.620		-	1.02	1.22
MM3871A17		1.680	1.700	1.720				
MM3871A18		1.780	1.800	1.820				
MM3871A19		1.880	1.900	1.920		-	0.94	1.14
MM3871A20		1.980	2.000	2.020				
MM3871A21		2.079	2.100	2.121				
MM3871A22		2.178	2.200	2.222				
MM3871A23		2.277	2.300	2.323				
MM3871A24		2.376	2.400	2.424				
MM3871A25		2.475	2.500	2.525		-	0.62	0.82
MM3871A26		2.574	2.600	2.626				
MM3871A27		2.673	2.700	2.727	I_{OUT}=300mA 2.7V≦V_{OUT}≦5.0V V_{DD}=V_{OUT}(TYP.)-0.2V			
MM3871A28		2.772	2.800	2.828				
MM3871A29		2.871	2.900	2.929				
MM3871A30		2.970	3.000	3.030				
MM3871A31		3.069	3.100	3.131				
MM3871A32		3.168	3.200	3.232				
MM3871A33		3.267	3.300	3.333				
MM3871A34		3.366	3.400	3.434				
MM3871A35		3.465	3.500	3.535		-	0.46	0.66
MM3871A36		3.564	3.600	3.636				
MM3871A37		3.663	3.700	3.737				
MM3871A38		3.762	3.800	3.838				
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MM3871A43		4.257	4.300	4.343				
MM3871A44		4.356	4.400	4.444				
MM3871A45		4.455	4.500	4.545		-	0.38	0.56
MM3871A46		4.554	4.600	4.646				
MM3871A47		4.653	4.700	4.747				
MM3871A48		4.752	4.800	4.848				
MM3871A49		4.851	4.900	4.949				
MM3871A50		4.950	5.000	5.050				

*Note6:Dropout voltage MAX value in the input and it is confirmed that there is no output abnormal voltage impression the load 300mA in the model less than Vout<2.7V.

Electrical Characteristics

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

Model name	Item							
	Output voltage				Dropout voltage			
	V_{OUT} (V)				Vio (V)			
	Conditions	Min.	Typ.	Max.	Conditions	Min.	Typ.	Max.
MM3871Z10	I_{OUT}=10mA	1.030	1.050	1.070	I_{OUT}=300mA 1.0V≦ V_{OUT}(Typ.)<2.7V *Note6	-	1.38	1.50
MM3871Z11		1.130	1.150	1.170				
MM3871Z12		1.230	1.250	1.270				
MM3871Z13		1.330	1.350	1.370		-	1.20	1.40
MM3871Z14		1.430	1.450	1.470				
MM3871Z15		1.530	1.550	1.570				
MM3871Z16		1.630	1.650	1.670		-	1.02	1.22
MM3871Z17		1.730	1.750	1.770				
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MM3871Z19		1.930	1.950	1.970		-	0.94	1.14
MM3871Z20		2.030	2.050	2.071				
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MM3871Z23		2.327	2.350	2.374				
MM3871Z24		2.426	2.450	2.475				
MM3871Z25		2.525	2.550	2.576		-	0.62	0.82
MM3871Z26		2.624	2.650	2.677				
MM3871Z27		2.723	2.750	2.778	I_{OUT}=300mA 2.7V≦V_{OUT}≦5.0V V_{DD}=V_{OUT}(TYP.)-0.2V			
MM3871Z28		2.822	2.850	2.879				
MM3871Z29		2.921	2.950	2.980				
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MM3871Z34		3.416	3.450	3.485				
MM3871Z35		3.515	3.550	3.586		-	0.46	0.66
MM3871Z36		3.614	3.650	3.687				
MM3871Z37		3.713	3.750	3.788				
MM3871Z38		3.812	3.850	3.889				
MM3871Z39		3.911	3.950	3.990				
MM3871Z40		4.010	4.050	4.091				
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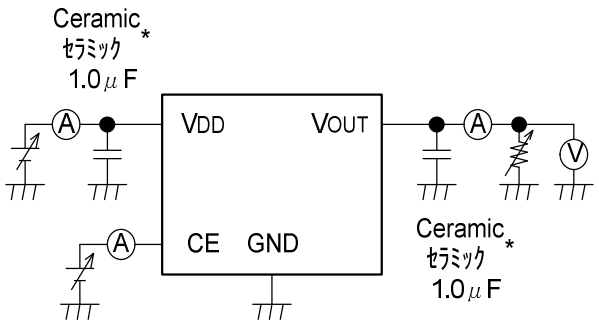
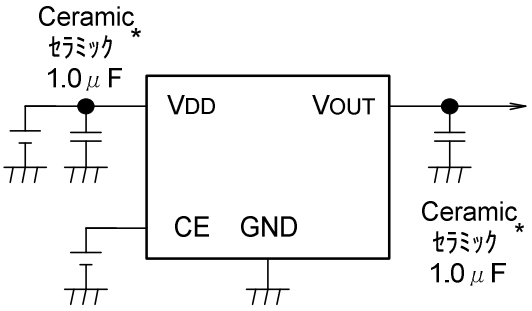
MM3871Z42		4.208	4.250	4.293				
MM3871Z43		4.307	4.350	4.394				
MM3871Z44		4.406	4.450	4.495				
MM3871Z45		4.505	4.550	4.596		-	0.38	0.56
MM3871Z46		4.604	4.650	4.697				
MM3871Z47		4.703	4.750	4.798				
MM3871Z48		4.802	4.850	4.899				
MM3871Z49		4.901	4.950	5.000				

*Note6:Dropout voltage MAX value in the input and it is confirmed that there is no output abnormal voltage impression the load 300mA in the model less than Vout<2.7V.

Test Circuit



Application Circuit



(Example of external parts)

- Output capacitor Ceramic capacitor 1.0μF
- Input capacitor Ceramic capacitor 1.0μF *Temperature characteristics : B

- In the event a problem which may affect industrial property or any other rights of us or a third party is encountered during the use of information described in these circuit, we shall not be liable for any such problem, nor grant a license therefore.

Note

1. Please use this IC within the stated absolute maximum ratings.
   The IC is liable to malfunction should the ratings be exceeded.

2. Due to restrictions on the package power dissipation, the output current value
   may not be satisfied.Attention should be paid to the power dissipation of the package
   when the output current is large or the voltage between Iinput and Output is high.

3. The output capacitor is required between output and GND to prevent oscillation.

4. The ESR of capacitor must be defined in ESR stability area.
   It is possible to use a ceramic capacitor without ESR resistance for output.
   The ceramic capacitor must be used more than 1.0μF and B temperature characteristics.

5. The wire of VDD and GND is required to print full ground plane for noise and stability.

6. The input capacitor must be connected a distance of less than 1cm from input pin.

7. It is able to oscillation when you use the capacitor with intense capacitance change
   such as micro. Please evaluate IC in the set.

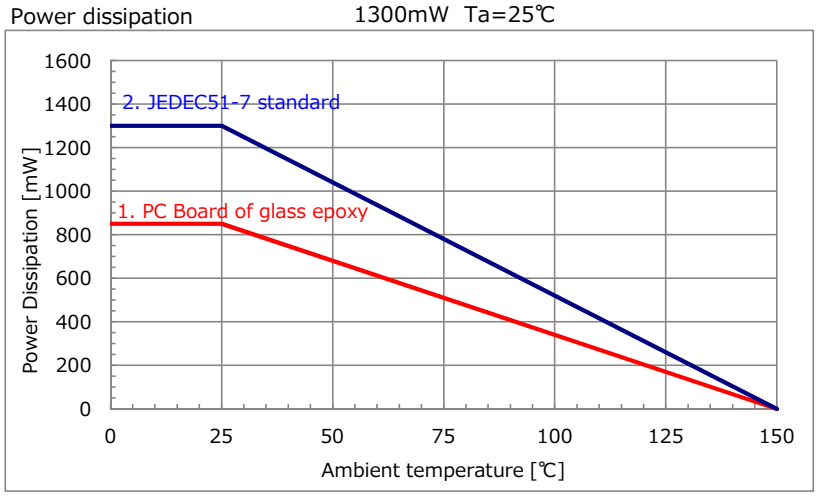
8. In case the output voltage is above the input voltage, the overcurrent flow by internal parastic
   diode from output to input.In such application, the external bypass diode must be connected
   between output and input pin.

9. This IC will limit the output current with the overcurrent protection circuit
   when the overcurrent and the output do short-circuit.
   However, IC generates heat because of the substrate and use conditions
   and there is a possibility of destroying it exceeding a permissible loss.
   The characteristic changes depending on the substrate condition.
   Please evaluate IC in the set.

About Power Dissiopation

The Power dissipation change if board to mount IC change because radiative heat fix at board.
It is reference data below, Evaluate IC in the set.

- PLP-4C
  1. PC Board of glass epoxy
     Board size 100mm×100mm t=1.6mm Copper foil area 80%
     Power dissipation 850mW Ta=25℃
  2. JEDEC51-7 standard (4 layer FR-4 board)
     Board size 114.3mm×76.2mm t=1.6mm Copper foil area 80%
     Power dissipation 1300mW Ta=25℃

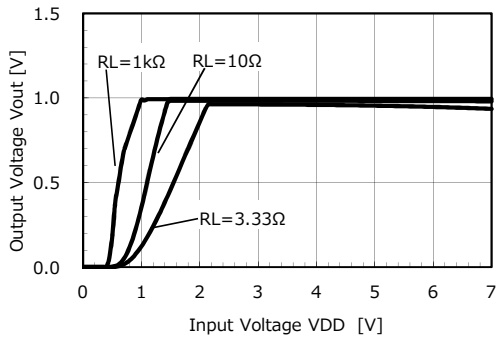


It is recommended to layout the VIA for heat radiation in the GND pattern of reverse (of IC) when there is the GND pattern in the inner layer (in using multiplayer substrate).
By increasing these copper foil pattern area of PCB, Power dissipation improves.

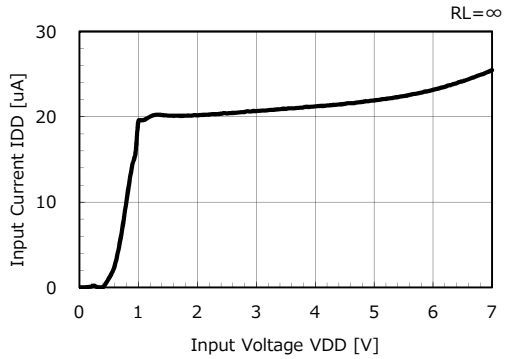
Typical Performance Characteristics (1.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

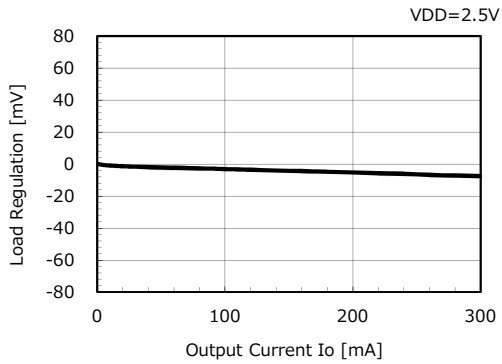
Input Voltage - Output Voltage



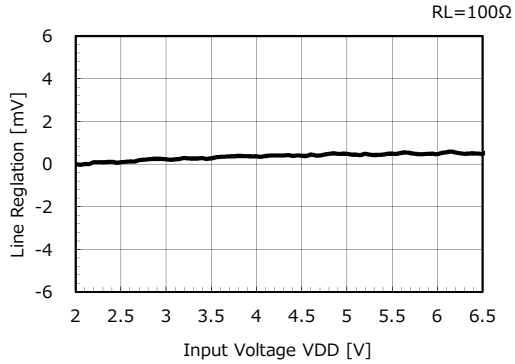
Input Voltage - Input Current



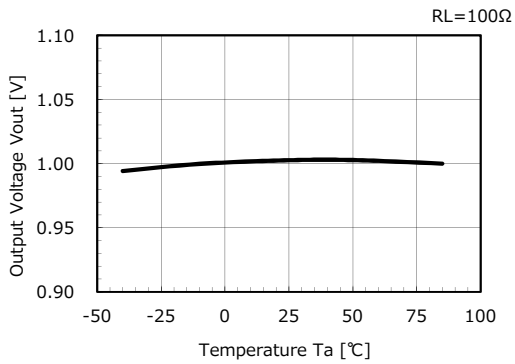
Load Regulation



Line Regulation



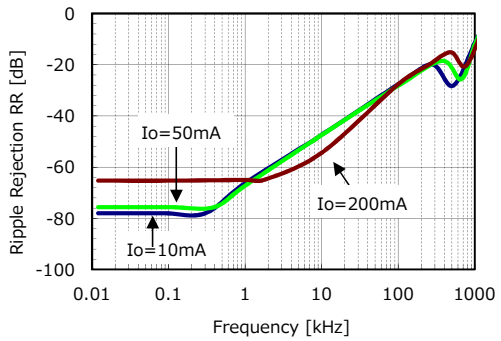
Vout Temperature Coefficient



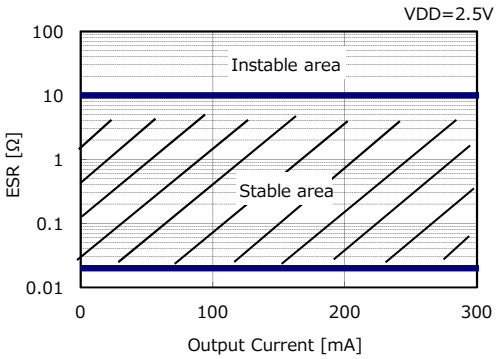
Typical Performance Characteristics (1.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

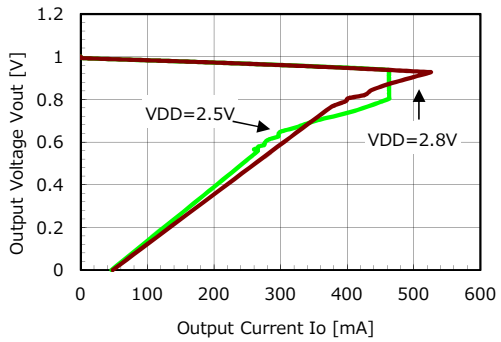
Ripple Rejection



ESR stability area



Current Limit



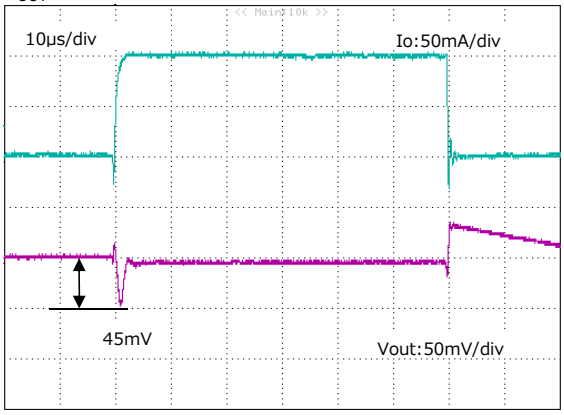
Typical Performance Characteristics (1.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

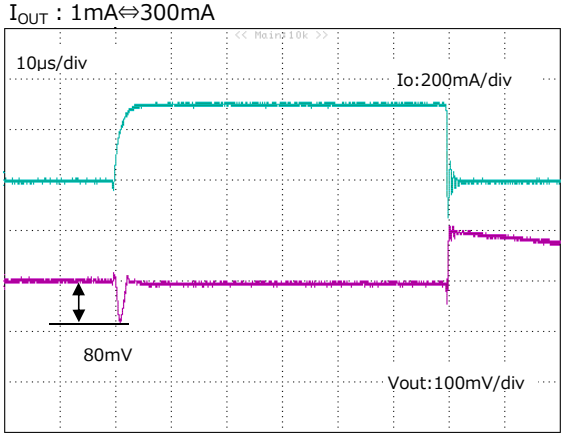
■ Load transient response

(V_{DD}=2.5V,V_{CE}=V_{DD}, Cin=Co=1.0μF)

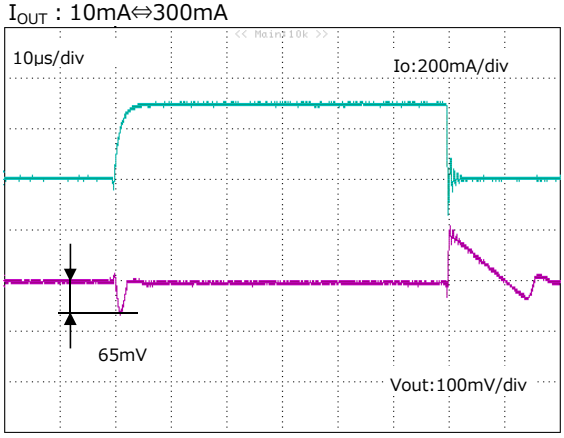
I_{OUT} : 1mA⇔100mA



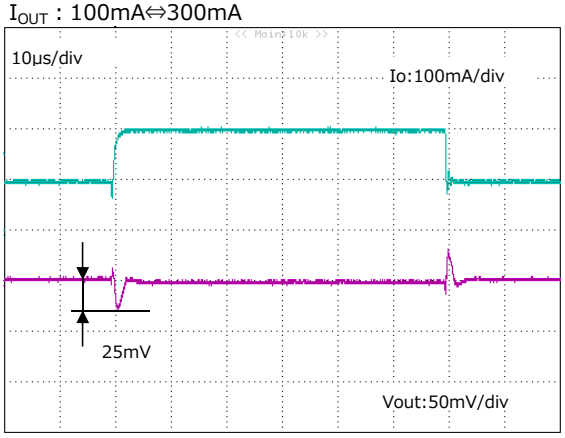
I_{OUT} : 1mA⇔300mA



I_{OUT} : 10mA⇔300mA

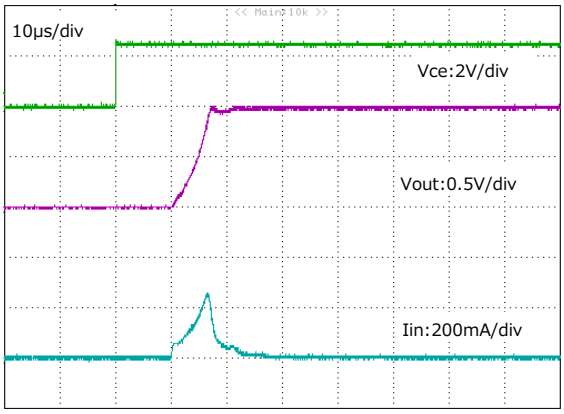


I_{OUT} : 100mA⇔300mA

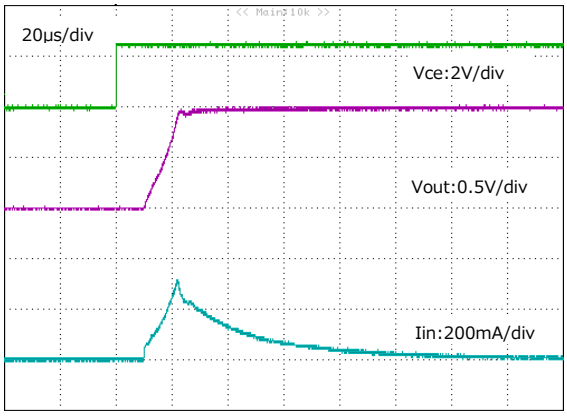


■ CE transient

(V_{DD}=2.5V, V_{CE}=0V→V_{DD}, Co=1.0μF)



(V_{DD}=2.5V, V_{CE}=0V→V_{DD}, Co=10μF)

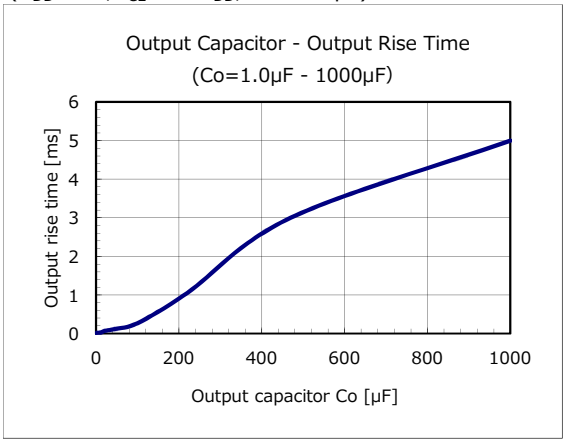


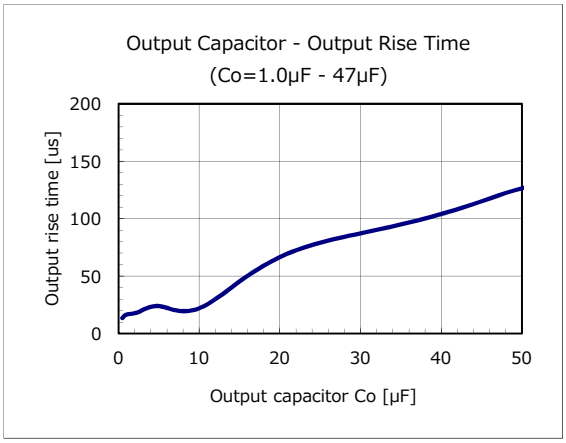
Typical Performance Characteristics (1.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

■ Output Rise Time

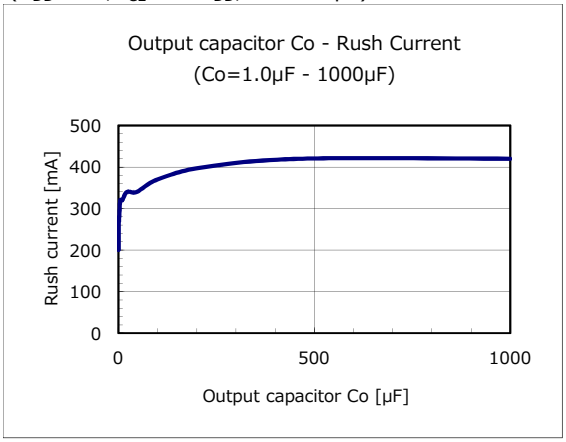
(V_{DD}=2.5,V_{CE}=0→V_{DD}, Cin=1.0μF)

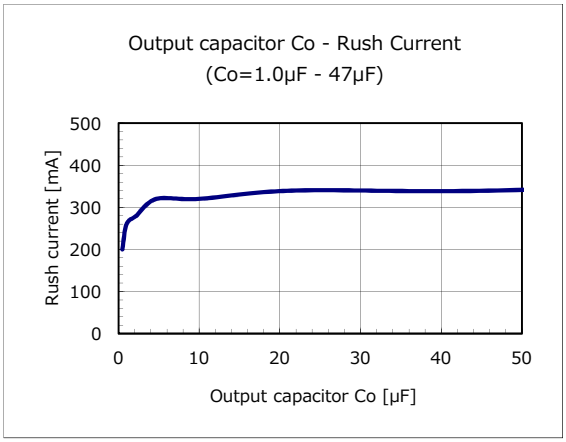




■ Rush Current

(V_{DD}=2.5,V_{CE}=0→V_{DD}, Cin=1.0μF)

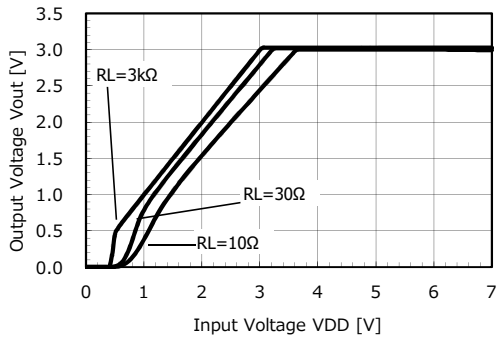




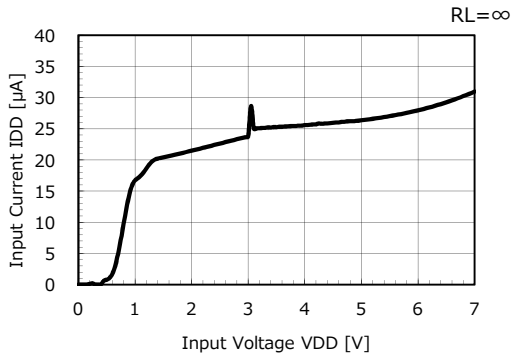
Typical Performance Characteristics (3.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

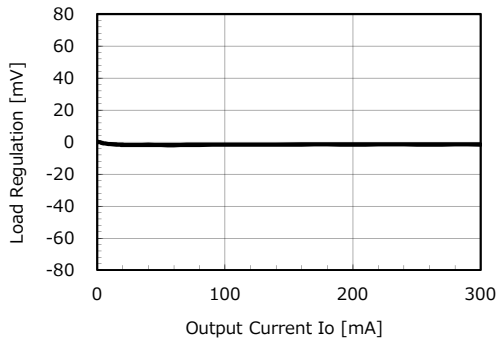
Input Voltage - Output Voltage



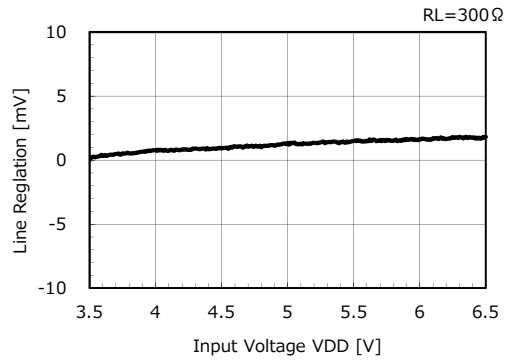
Input Voltage - Input Current



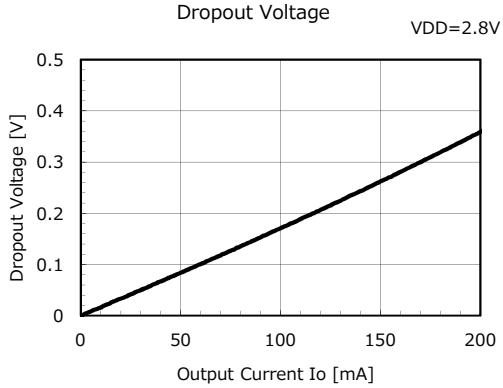
Load Regulation



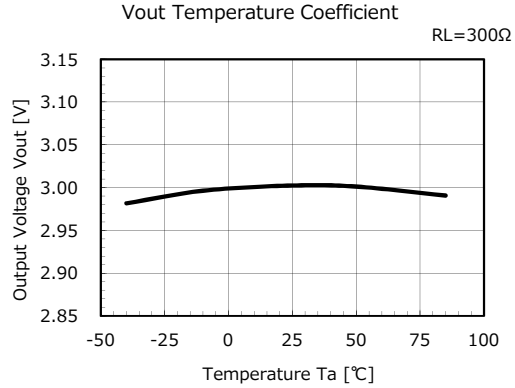
Line Regulation



Dropout Voltage



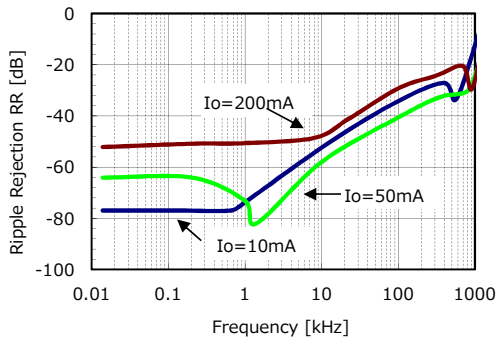
Vout Temperature Coefficient



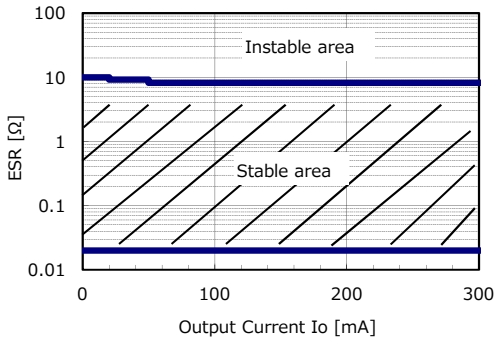
Typical Performance Characteristics (3.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

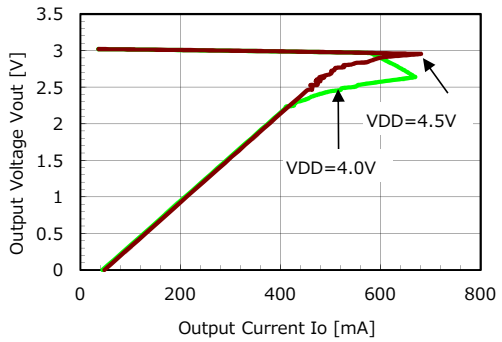
Ripple Rejection



ESR Stability area



Current Limit



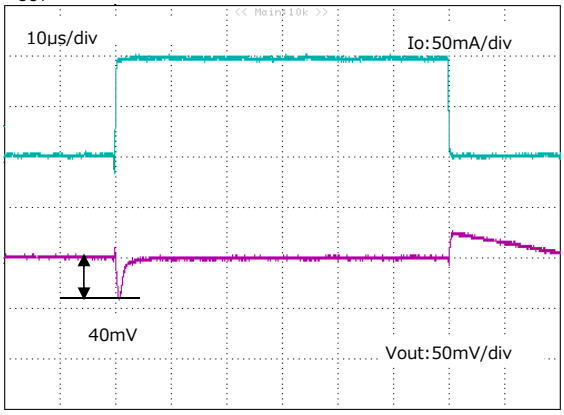
Typical Performance Characteristics (3.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

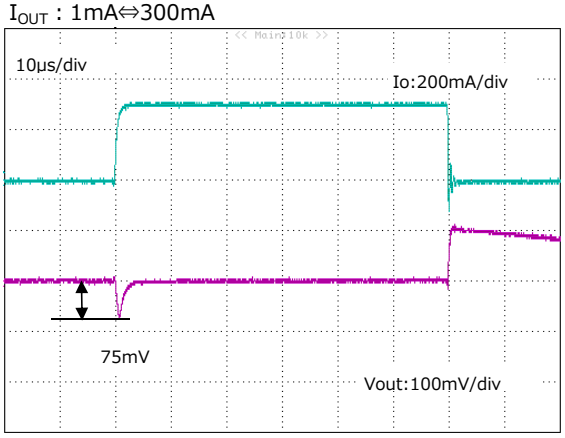
■ Load transient response

(V_{DD}=V_{OUT}+1V,V_{CE}=V_{DD}, Cin=Co=1.0μF)

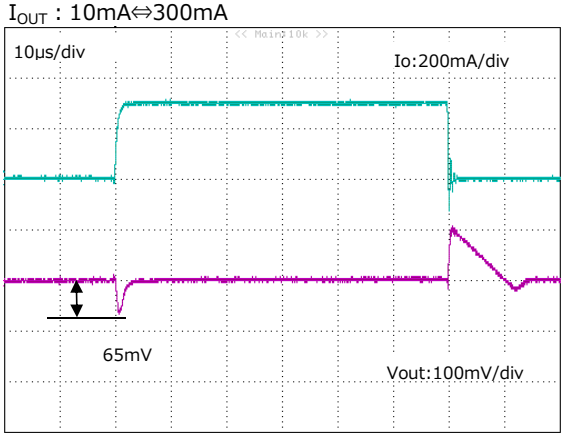
I_{OUT} : 1mA⇔100mA



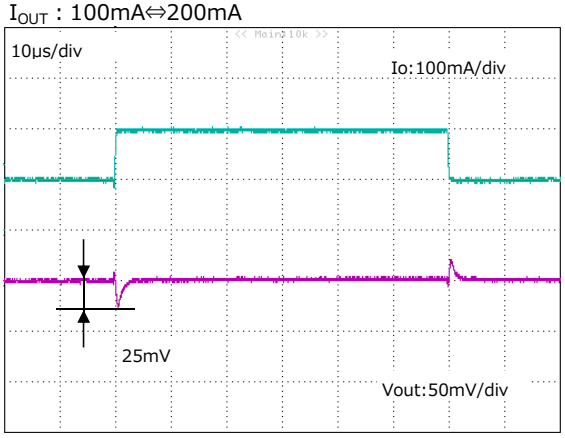
I_{OUT} : 1mA⇔300mA



I_{OUT} : 10mA⇔300mA

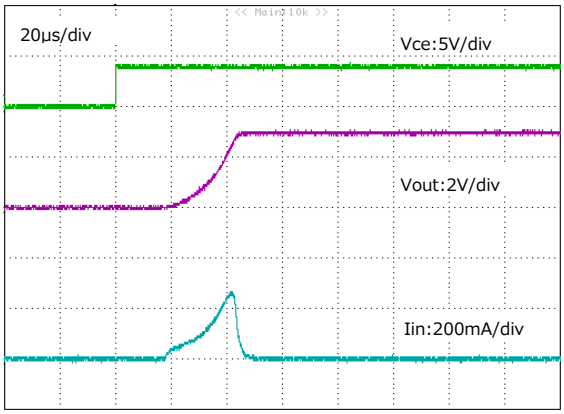


I_{OUT} : 100mA⇔200mA

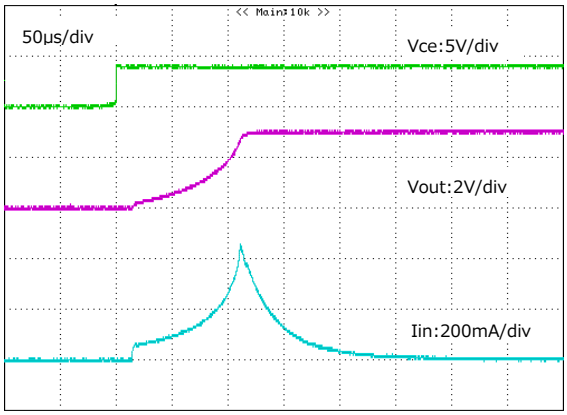


■ CE transient

(V_{DD}=V_{OUT}+1V, V_{CE}=0V→V_{DD}, Co=1.0μF)



(V_{DD}=V_{OUT}+1V, V_{CE}=0V→V_{DD}, Co=10μF)

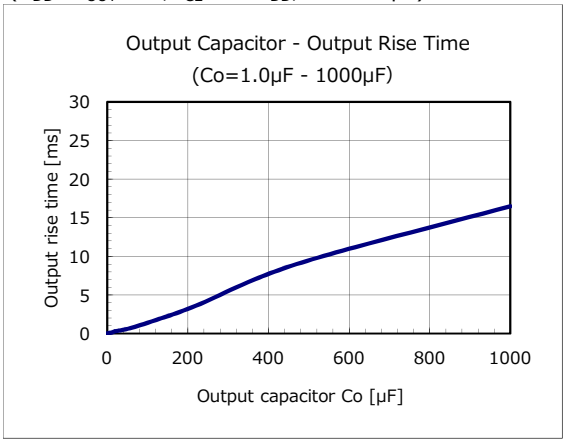


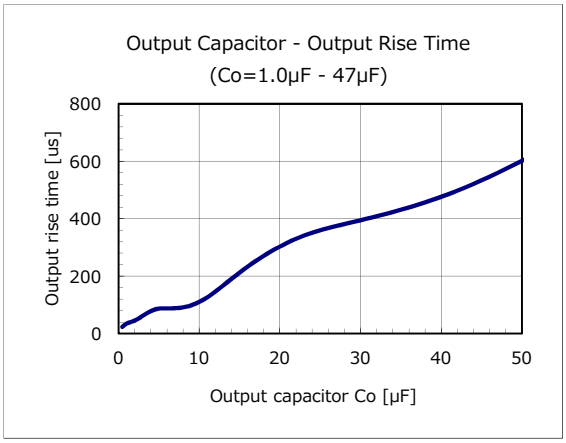
Typical Performance Characteristics (3.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

■ Output Rise Time

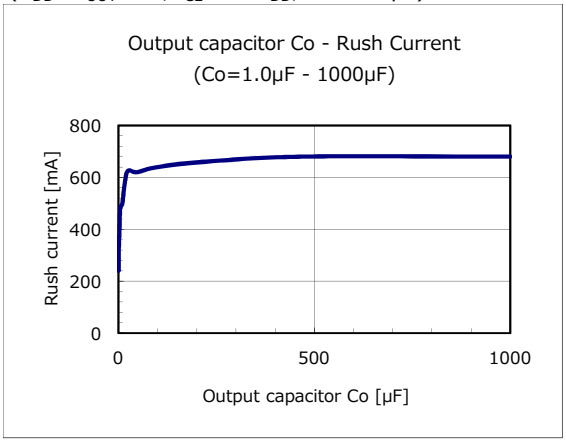
(V_{DD}=V_{OUT}+1V,V_{CE}=0→V_{DD}, Cin=1.0μF)

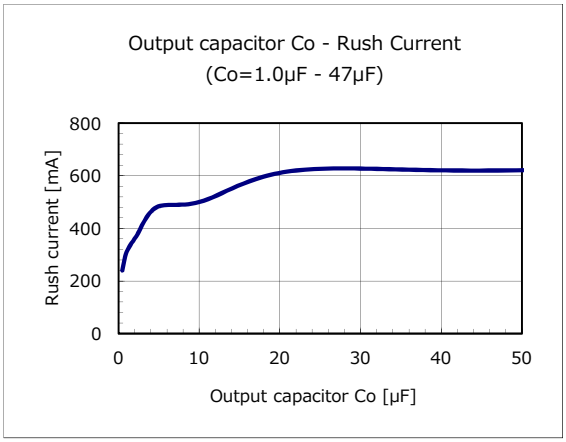




■ Rush Current

(V_{DD}=V_{OUT}+1V,V_{CE}=0→V_{DD}, Cin=1.0μF)

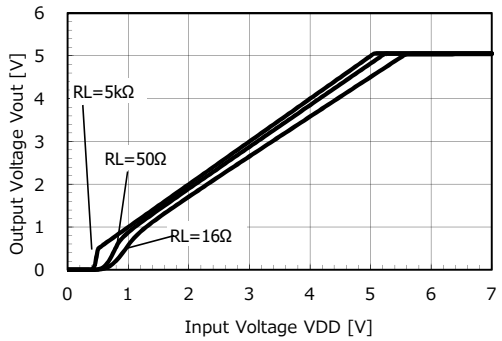




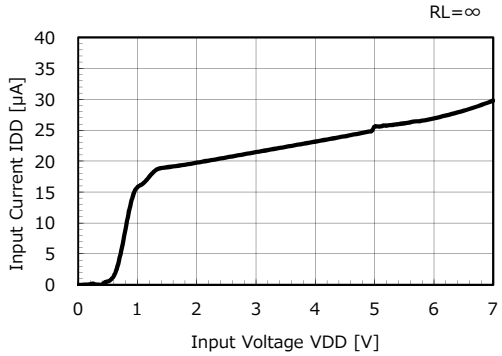
Typical Performance Characteristics (5.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

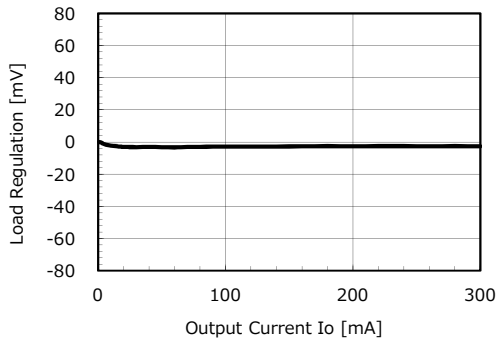
Input Voltage - Output Voltage



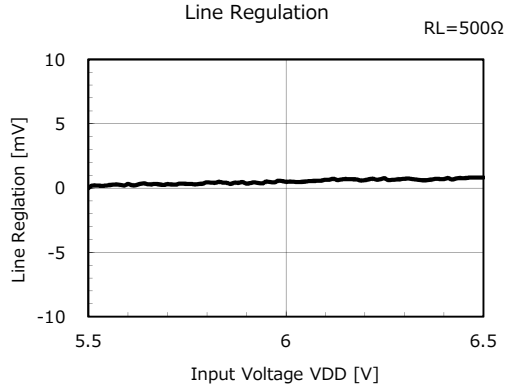
Input voltage - Input Current



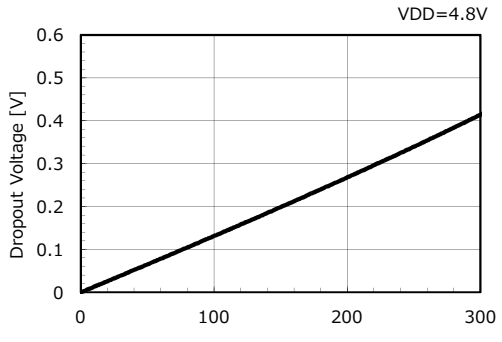
Load Regulation



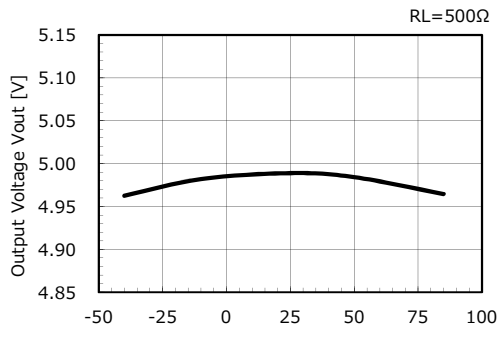
Line Regulation



Dropout Voltage



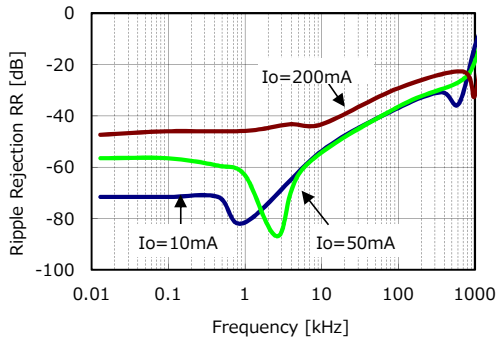
Vout Temperature Coefficient



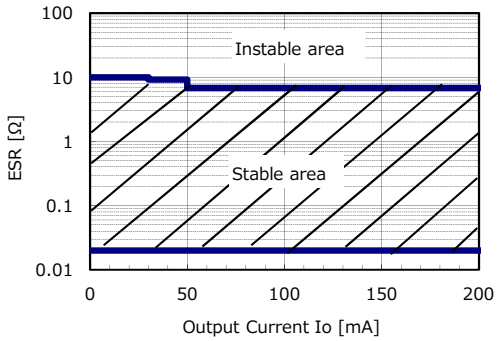
Typical Performance Characteristics (5.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

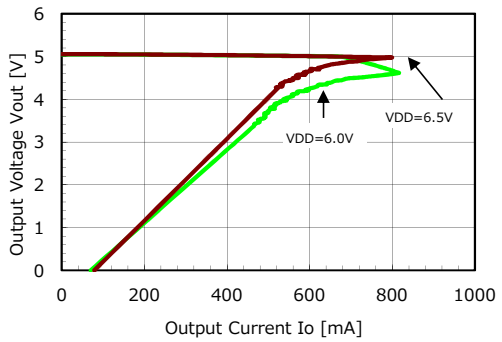
Ripple Rejection



ESR Stability area



Current Limit



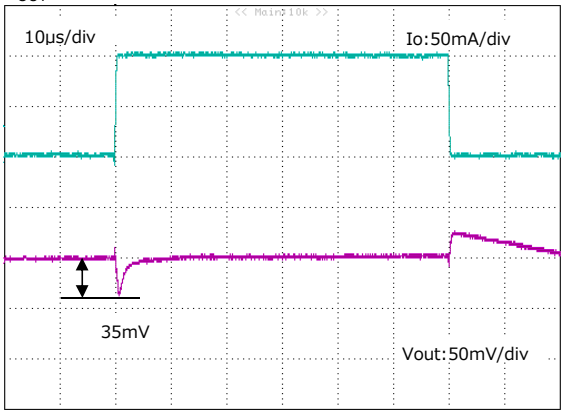
Typical Performance Characteristics (5.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

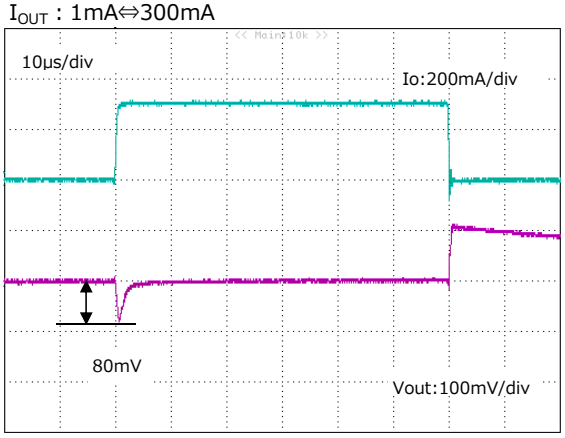
■ Load transient response

(V_{DD}=V_{OUT}+1V,V_{CE}=V_{DD}, Cin=Co=1.0μF)

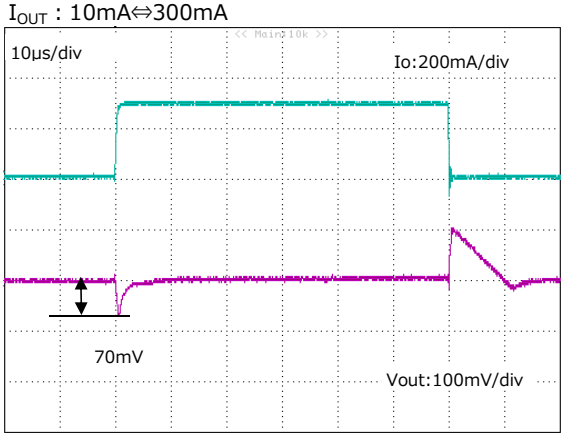
I_{OUT} : 1mA⇔100mA



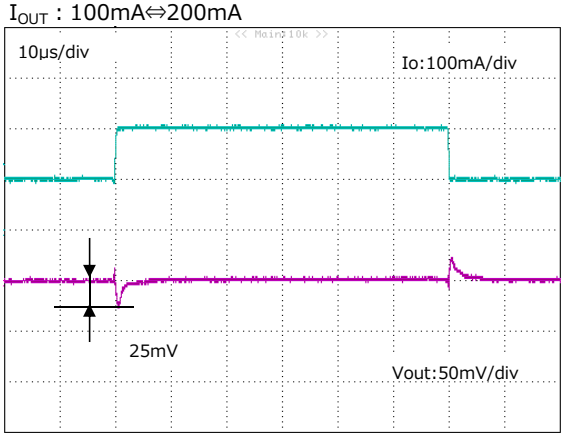
I_{OUT} : 1mA⇔300mA



I_{OUT} : 10mA⇔300mA

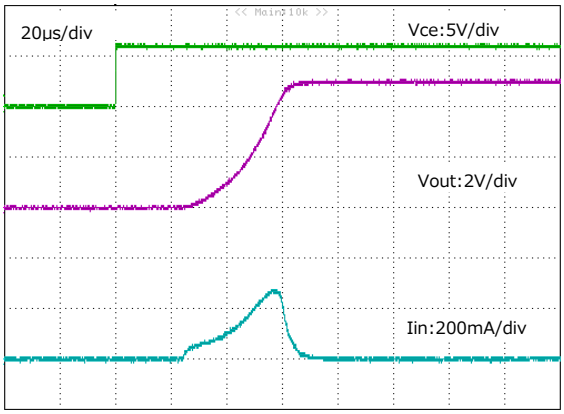


I_{OUT} : 100mA⇔200mA

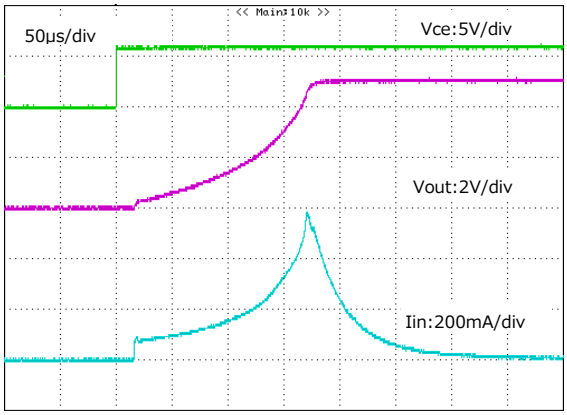


■ CE transient

(V_{DD}=V_{OUT}+1V, V_{CE}=0V→V_{DD}, Co=1.0μF)



(V_{DD}=V_{OUT}+1V, V_{CE}=0V→V_{DD}, Co=10μF)

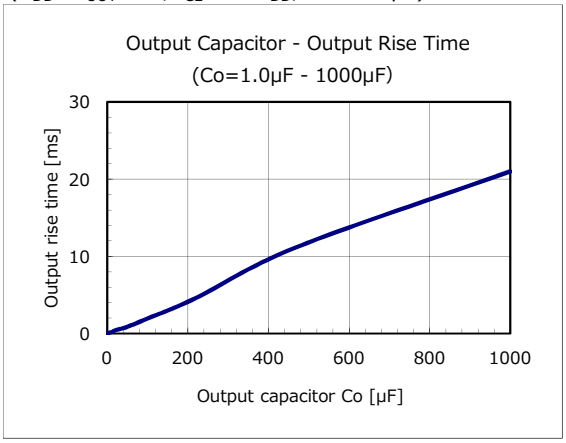


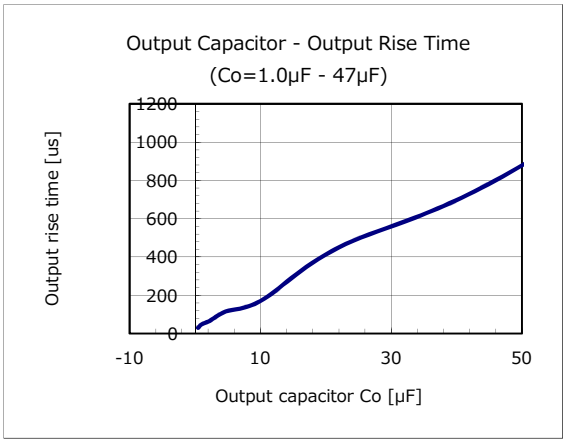
Typical Performance Characteristics (5.0V)

(V_{DD}=V_{OUT}(Typ.)+1V, V_{CE}=V_{DD}, Ta=25℃ unless otherwise specified)

■ Output Rise Time

(V_{DD}=V_{OUT}+1V,V_{CE}=0→V_{DD}, Cin=1.0μF)





■ Rush Current

(V_{DD}=V_{OUT}+1V,V_{CE}=0→V_{DD}, Cin=1.0μF)