DESCRIPTION

These devices consist of two independent, high gain, internally frequency-compensated operational amplifiers designed operate from a single supply over a wide range of voltages. Operation from split supplies also is possible if the difference between the two supplies is 3V to 32V, and Vcc is at least 1.5V more positive than the input common-mode voltage, the low supply-current drain is independent of the magnitude of the power supply voltage.

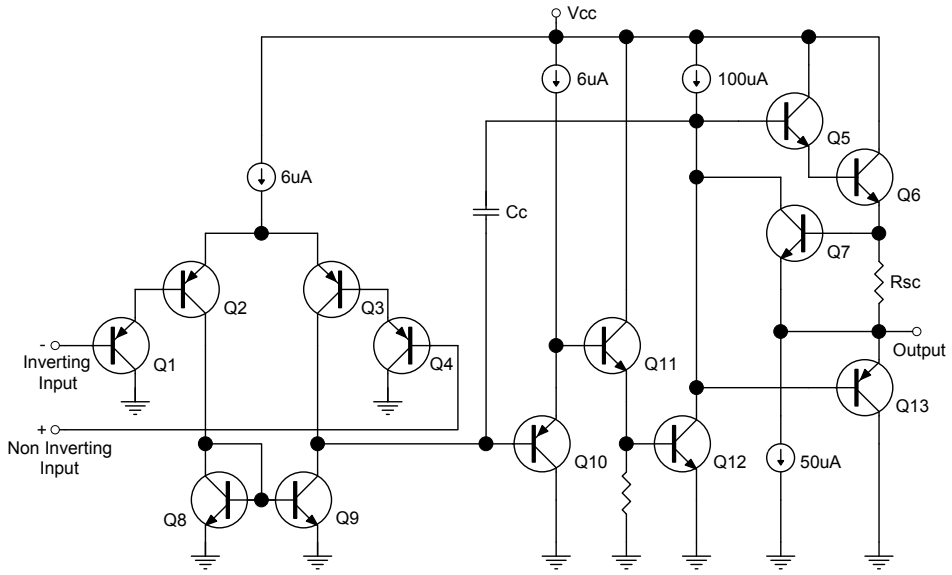
FEATURES

- Two internally compensated OP amps
- Internally frequency compensated for unity gain
- Short circuit protection
- Wide power supply range: $3V_{DC}$ to $32V_{DC}$ (Single supply)
- Input common-mode voltage range includes ground
- Large output voltage swing: $0V_{DC}$ to Vcc-$1.5V_{DC}$

APPLICATIONS

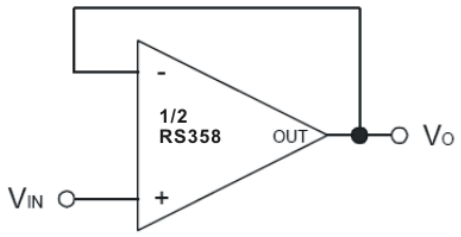
- Electronic products
- Power supply
- Remote controller
- Consuming products

BLOCK DIAGRAM

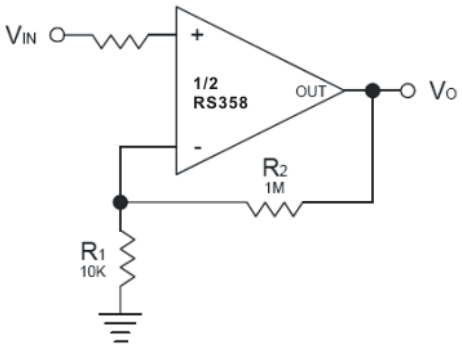


APPLICATION CIRCUIT

Voltage Follower

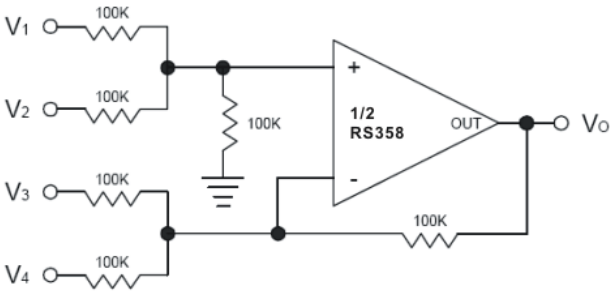


Non Inverting DC Amplifier



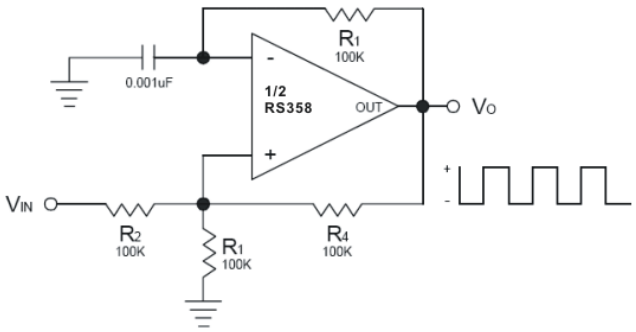
$A_V=1+R_1/R_2$

DC Summing Amplifier

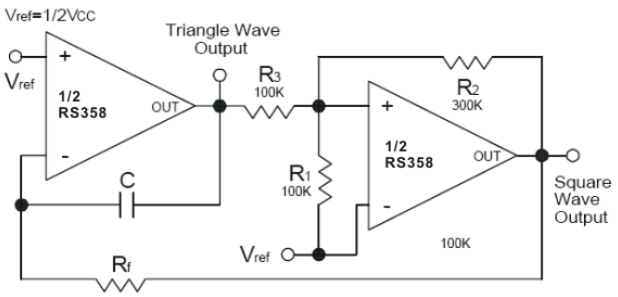


$V_O=V_1+V_2-V_3-V_4$
Where $(V_1+V_2)\geq(V_3+V_4)$
To keep $V_O\geq 0V$

Squarewave Oscillator

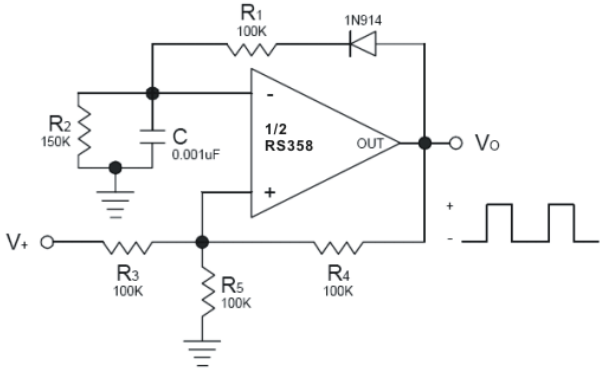


Function Generator



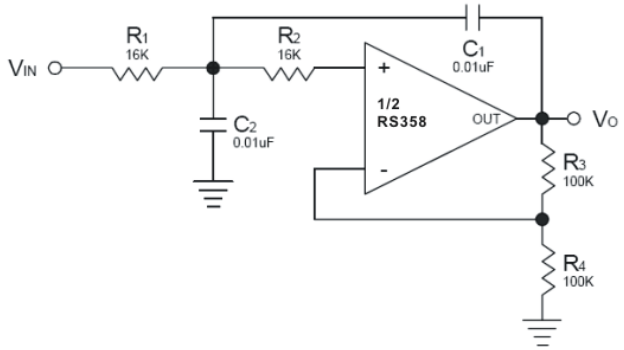
$F=(R_1+R_C)/4CR_fR_1$
if $R_3=R_2*R_1/(R_2+R_1)$

Pulse Generator



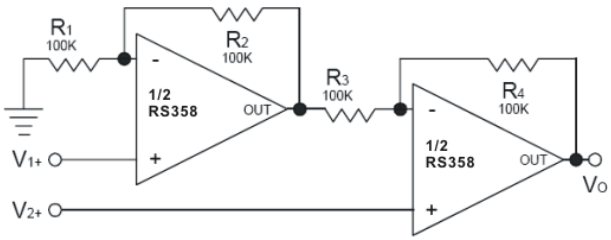
APPLICATION CIRCUIT

DC Coupled Low-Pass RC Active Filter



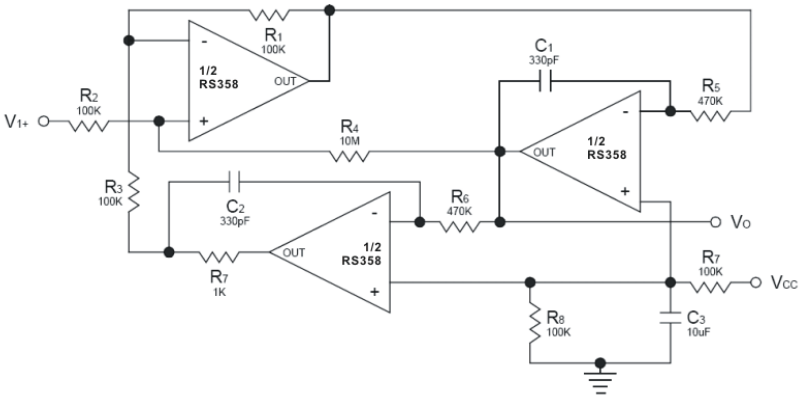
f_0=1KHz, Q=1, A_V=2

High Input Z, DC Differential Amplifier



$R_1/R_2=R_4/R_3$
$V_O=1+R_4/R_3(V_2-V_1)$
As shown $V_O=2(V_2-V_1)$

Active Band-Pass Filter

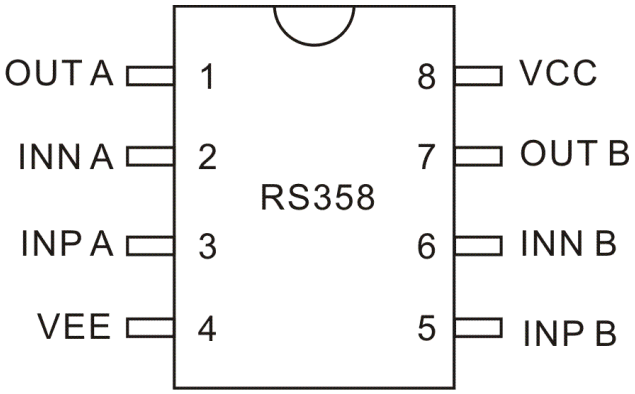


f_0=1KHz, Q=50, A_V=100 (40dB)

ORDER INFORMATION

Part Number	Package Type
RS358S	8-Pin, SOP, 150mil

PIN CONFIGURATION

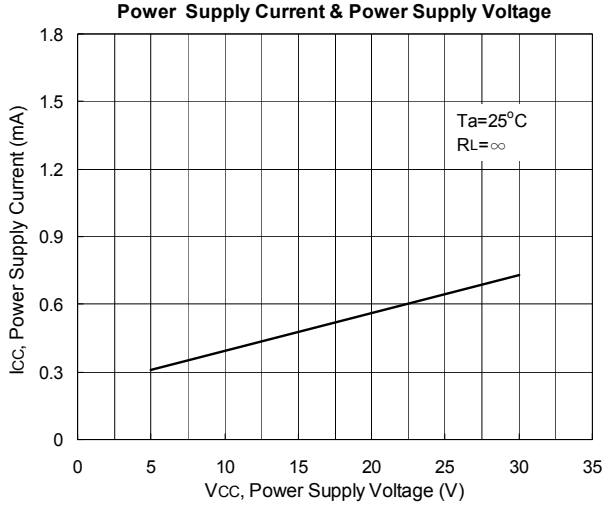


PIN DESCRIPTION

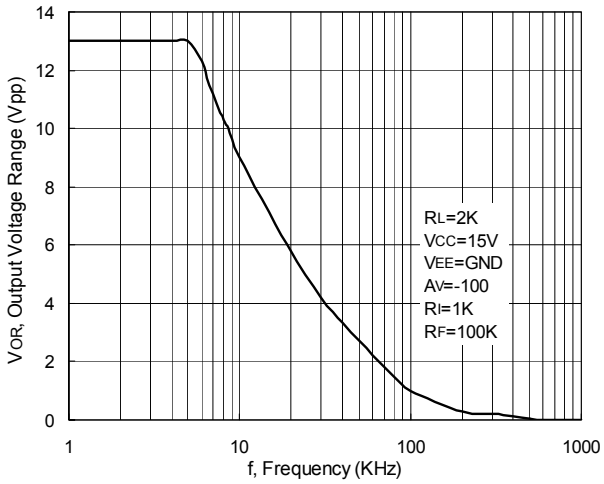
Pin Name	Description	Pin No.
OUT A	Output A	1
INN A	Inverting input A (-)	2
INP A	Non inverting input A (+)	3
VEE	Connect to GND or negative voltage.	4
INP B	Non inverting input B (+)	5
INN B	Inverting input B (-)	6
OUT B	Output B	7
VCC	Supply voltage	8

CHARACTERISTIC CURVES

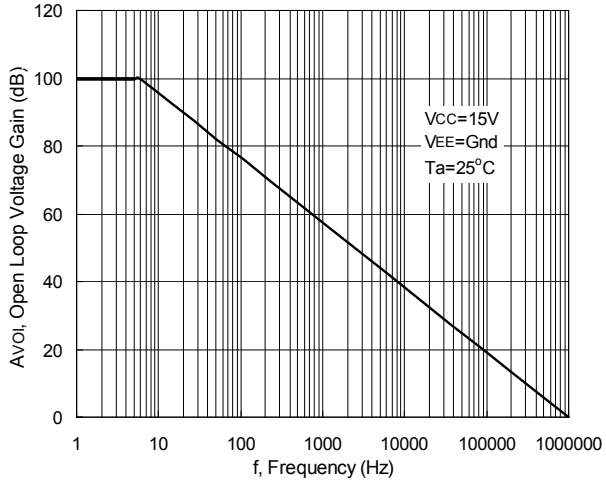
Power Supply Current & Power Supply Voltage



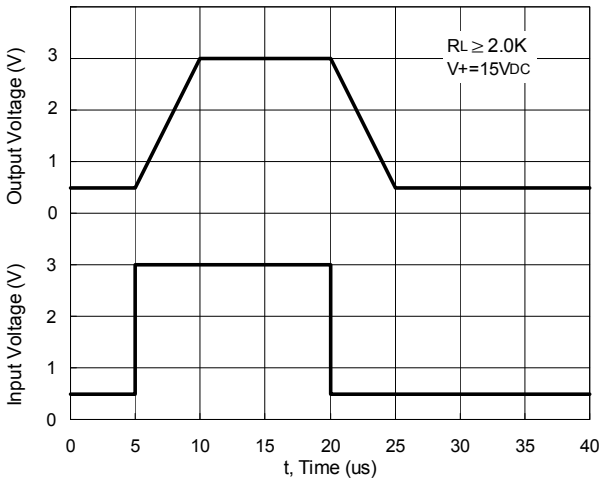
Large Signal Frequency Response



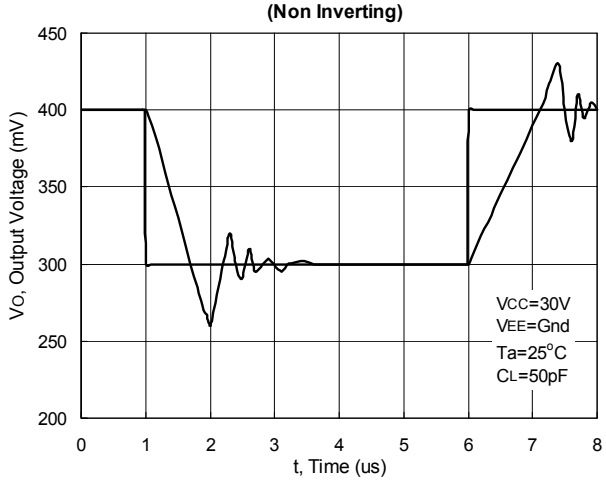
Large Signal Open Loop Voltage Gain



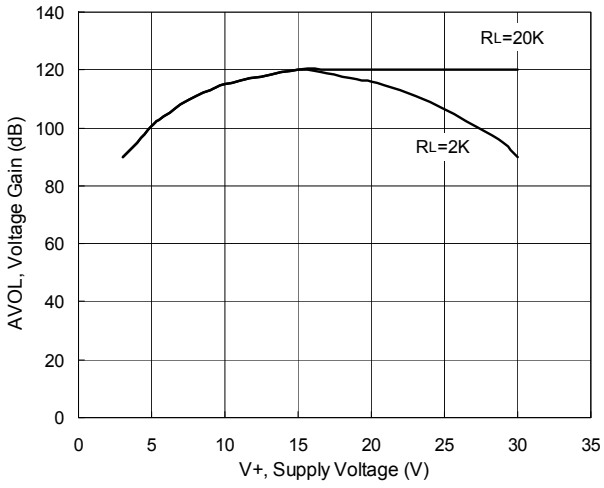
Voltage Follower Pulse Response



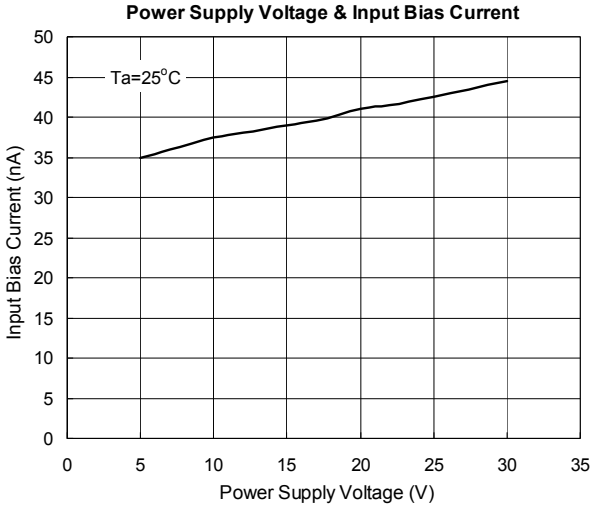
Small Signal Voltage Follower Pulse Response (Non Inverting)

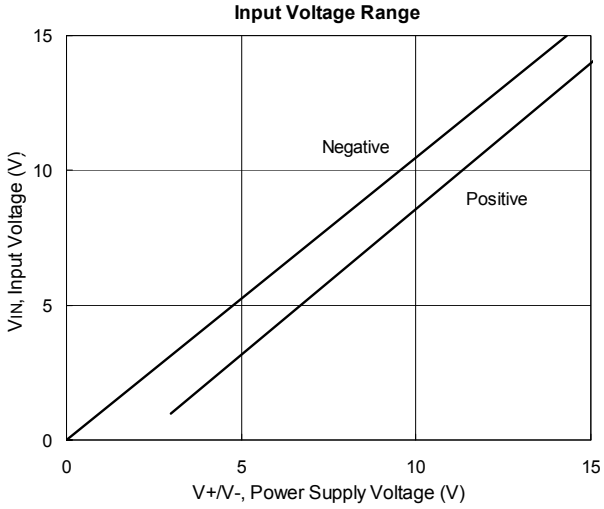


Voltage Gain



CHARACTERISTICS CURVE





ABSOLUTE MAXIMUM RATINGS

(Ta=25°C, unless otherwise specified)

Parameter	Symbol	Range	Units
Power Supply Voltage (Single Supply)	V_{CC}	32	V_{DC}
Power Supply Voltage (Split Supplies)	V_{CC}, V_{EE}	±16	V_{DC}
Input Differential Voltage Range	V_{IDR}	32	V_{DC}
Input Common Mode Voltage Range	V_{ICR}	-0.3 to +32	V_{DC}
Output Short Circuit Duration	t_{SC}	Continuous	
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-40 to +150	°C
Operating Ambient Temperature Range	T_A	-40 to +85	°C
Maximum Power Dissipation (DIP-8) Maximum Power Dissipation (SO-8)	P_D	800 500	mW

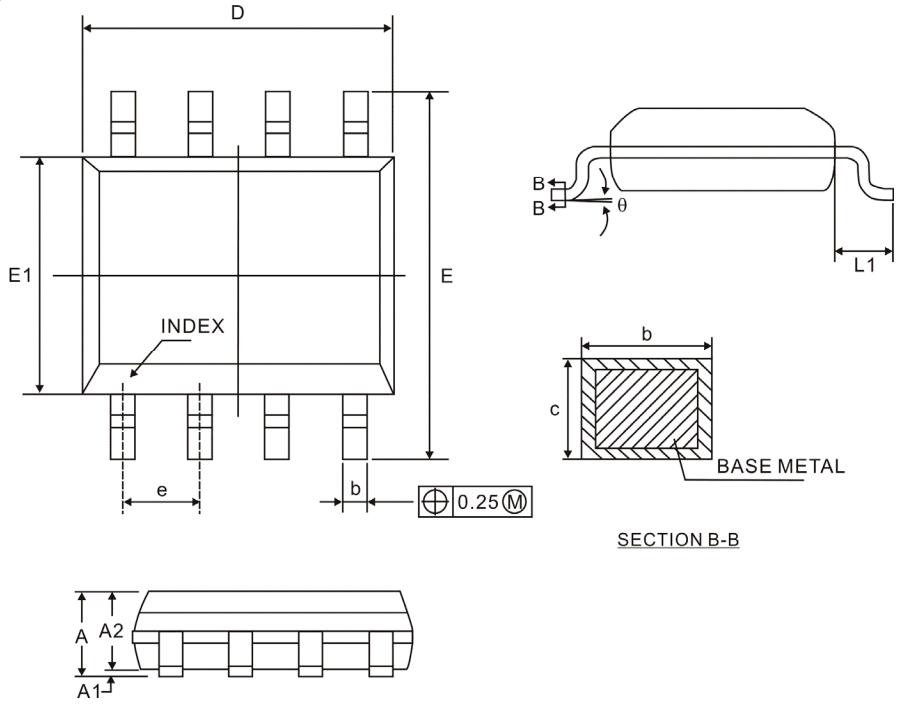
ELECTRICAL CHARACTERISTICS

(V_{CC}=5V, V_{EE}=Ground, Ta=25°C, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Offset Voltage	V_{IO}	V_{CC}=5V~30V, V_{ICR}=0V~V_{CC}-1.5V, V_O=1.4V, R_S=0Ω	-	3	7	mV
Input Offset Current	I_{IO}	$I_{IN(+)}$-$I_{IN(-)}$	-	2	50	nA
Input Bias Current	I_{IB}	$I_{IN(+)}$ or $I_{IN(-)}$	-	20	250	nA
Large Signal Voltage Gain	A_{VOL}	V_{CC}=15V, R_L=2KΩ	25	100	-	V/mV
Common-Mode Rejection Ratio	CMR	V_{CM}=0V~V_{CC}-1.5V	65	80	-	dB
Channel Separation	CS	1KHz≤f≤20KHz	-	120	-	dB
Power Supply Rejection	PSR	V_{CC}=5V~30V	65	100	-	dB
Average Temperature Coefficient of Input Offset Voltage	$\Delta V_{IO}/\Delta T$	R_S=0Ω	-	7	-	uV/°C
Average Temperature Coefficient of Input Offset Current	$\Delta I_{IO}/\Delta T$	R_S=0Ω	-	10	-	pA/°C
Input Common Mode Voltage Range	V_{ICR}	V_{CC}=30V			V_{CC}-2V	V
Output Voltage (High Limit)	V_{OH}	V_{CC}=30V, R_L=2KΩ	26	27	-	V
		V_{CC}=30V, R_L=10KΩ	27	28	-	
Output Voltage (Low Limit)	V_{OL}	R_L=10KΩ	-	5	20	mV
Supply current	I_{CC}	R_L=∞,V_{CC}=30V	-	0.7	1.2	mA
Output Source Current	I_{Source}	V_{CC}=15V, V_{IN+}=1V, V_{IN-}=0V, V_O=2V	20	40	-	mA
Output Sink Current	I_{Sink}	V_{CC}=15V, V_{IN+}=0V, V_{IN-}=1V, V_O=2V	10	20	-	mA
Power Supply Current	I_{CC}	V_{CC}=30V, Ta=T_{high} to T_{low}	-	1	2	mA
		V_{CC}=5V, Ta=T_{high} to T_{low}	-	0.7	1.2	mA
Output Short Circuit to Ground	I_{SC}	V_{CC}=5V, GND at -5V, V_O=0V	-	±40	±60	mA

PACKAGE INFORMATION

8 PINS, SOP, 150MIL



Symbol	Dimensions(mm)		
	Min.	Nom.	Max.
A	1.35	1.60	1.77
A1	0.08	0.15	0.28
A2	1.20	1.40	1.65
b	0.33	-	0.51
c	0.17	-	0.26
e	1.27 BSC		
D	4.70	4.90	5.10
E	5.80	6.00	6.20
E1	3.70	3.90	4.10
L1	1.04 REF		
θ	0°	-	8°

Notes:
1.Refer to JEDEC MS-012
2.All dimensions are in millimeter

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