PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM4890	MSOP-8	-40℃ to +85℃	SGM4890YMS/TR	SGM4890 YMS XXXXX	Tape and Reel, 4000

NOTE: XXXXX = Date Code and Vendor Code.

Green (RoHS & HSF): SG Micro Corp defines "Green" to mean Pb-Free (RoHS compatible) and free of halogen substances. If you have additional comments or questions, please contact your SGMICRO representative directly.

ABSOLUTE MAXIMUM RATINGS

Supply Voltage 6V
Input Voltage Range ..... -0.3V to (V_+) + 0.3V
Junction Temperature ..... +150℃
Storage Temperature Range ..... -65℃ to +150℃
Lead Temperature (Soldering, 10s) ..... +260℃
ESD Susceptibility
HBM 2000V
MM 200V

RECOMMENDED OPERATING CONDITIONS

Supply Voltage Range ..... 2.5V to 5.5V
Operating Temperature Range ..... -40℃ to +85℃

OVERSTRESS CAUTION

Stresses beyond those listed may cause permanent damage to the device. Functional operation of the device at these or any other conditions beyond those indicated in the operational section of the specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

ESD SENSITIVITY CAUTION

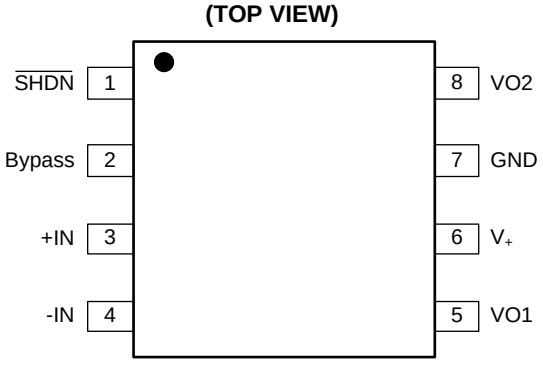
This integrated circuit can be damaged by ESD if you don't pay attention to ESD protection. SGMICRO recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

DISCLAIMER

SG Micro Corp reserves the right to make any change in circuit design, specification or other related things if necessary without notice at any time.

PIN CONFIGURATION

(TOP VIEW)



MSOP-8

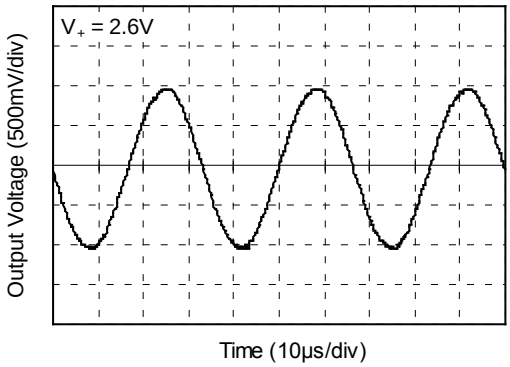
ELECTRICAL CHARACTERISTICS

(T_A = +25℃, unless otherwise specified.)

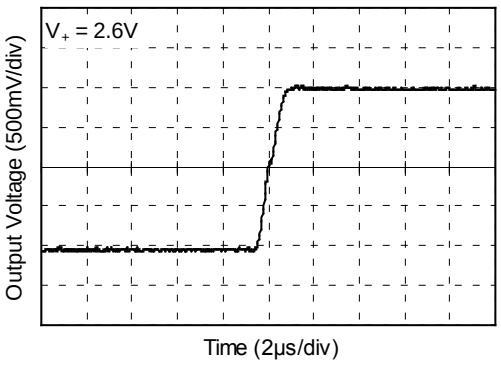
PARAMETER	SYMBOL	CONDITIONS		MIN	TYP	MAX	UNITS
Quiescent Power Supply Current	I_Q	V_{IN} = 0V, I_O = 0A	V_+ = +5.0V, No Load		4	8	mA
			V_+ = +5.0V, 8Ω Load		6	10	
			V_+ = +3.6V, No Load		3.7		
			V_+ = +3.6V, 8Ω Load		5.7		
			V_+ = +3.0V, No Load		3.5	7	
			V_+ = +3.0V, 8Ω Load		5.5	9	
			V_+ = +2.6V, No Load		3.3		
			V_+ = +2.6V, 8Ω Load		5.3		
Shutdown Current	I_{SD}	$V_{SHUTDOWN}$ = 0V			0.01	4.0	μA
Shutdown Voltage Input High	V_{SDIH}			1.2			V
Shutdown Voltage Input Low	V_{SDIL}					0.4	V
Output Offset Voltage	V_{OS}				1	50	mV
Output Power (8Ω)	P_O	f = 1kHz, THD+N = 1%	V_+ = +5.0V		1.10		W
			V_+ = +3.6V		0.58		
			V_+ = +3.0V		0.40		
			V_+ = +2.6V		0.30		
Total Harmonic Distortion + Noise	THD+N	P_O = 0.4Wrms, f = 1kHz			0.01		%
Power Supply Rejection Ratio	PSRR	f = 217Hz	V_+ = +5.0V		-66		dB
			V_+ = +3.6V		-63		
			V_+ = +3.0V		-63		
			V_+ = +2.6V		-62		
		f = 1kHz	V_+ = +5.0V		-72		
			V_+ = +3.6V		-68		
			V_+ = +3.0V		-66		
			V_+ = +2.6V		-64		
Wake-Up Time	T_{WU}	C_{BYPASS} = 1μF	V_+ = +5.0V		110		ms
			V_+ = +3.6V		110		
			V_+ = +3.0V		100		
			V_+ = +2.6V		100		
Shutdown Time	T_{SDT}	8Ω Load	V_+ = +5.0V		10		μs
			V_+ = +3.6V		16		
			V_+ = +3.0V		17.8		
			V_+ = +2.6V		17.8		

TYPICAL PERFORMANCE CHARACTERISTICS

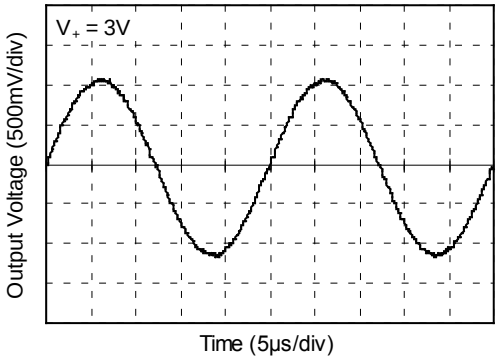
V_{OUT+} or V_{OUT-} Large Sine Signal Response



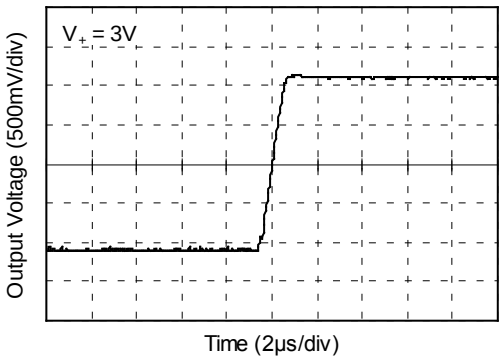
Large Signal Step Response



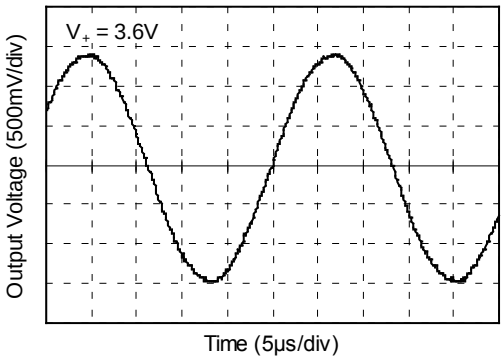
V_{OUT+} or V_{OUT-} Large Sine Signal Response



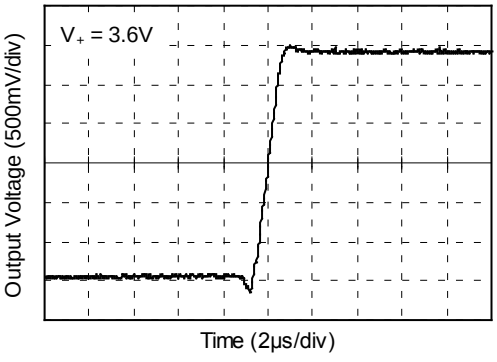
Large Signal Step Response



V_{OUT+} or V_{OUT-} Large Sine Signal Response

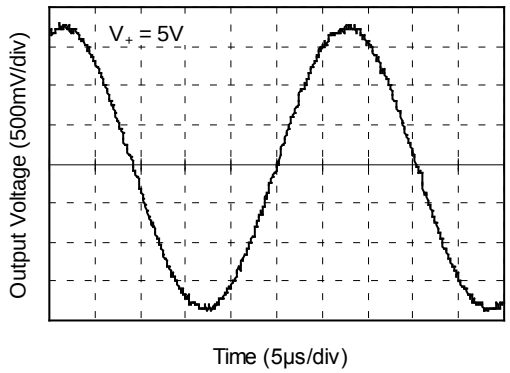


Large Signal Step Response

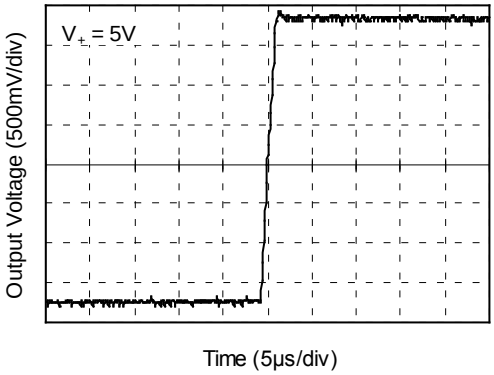


TYPICAL PERFORMANCE CHARACTERISTICS (continued)

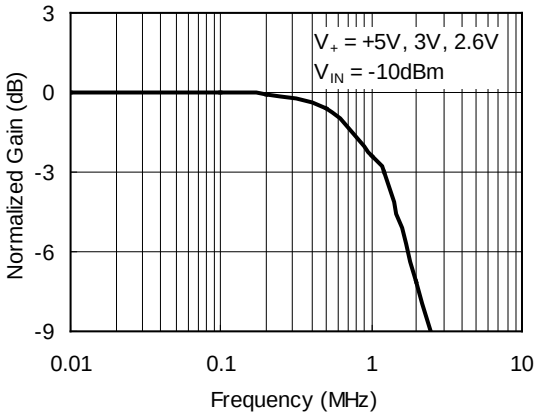
V_{OUT+} or V_{OUT-} Large Sine Signal Response



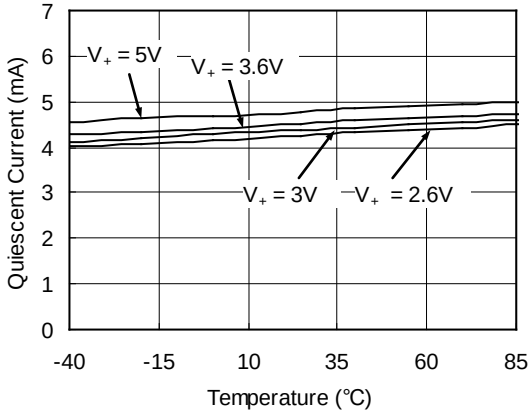
Large Signal Step Response



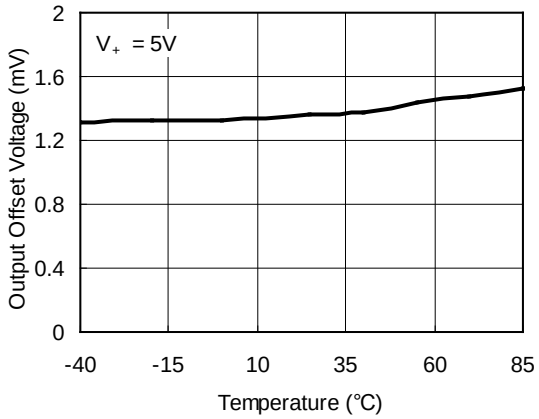
Small Signal Frequency Response



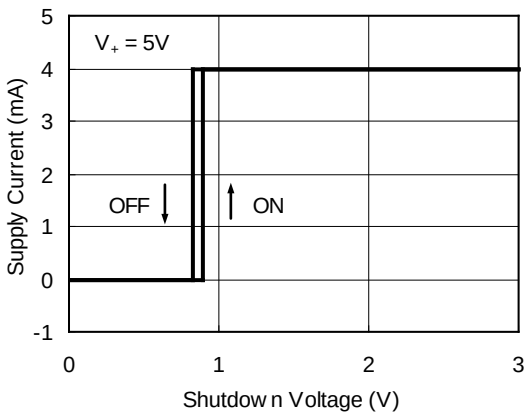
Quiescent Current vs. Temperature



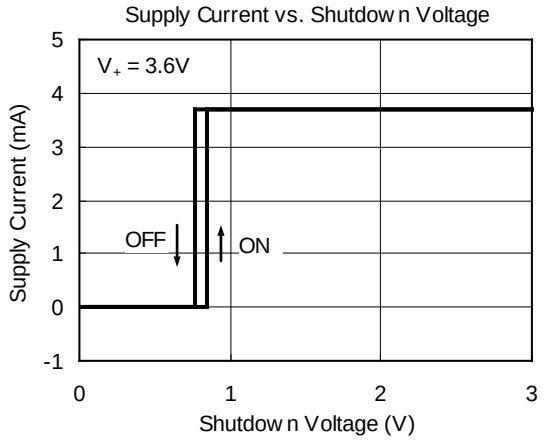
Output Offset Voltage vs. Temperature

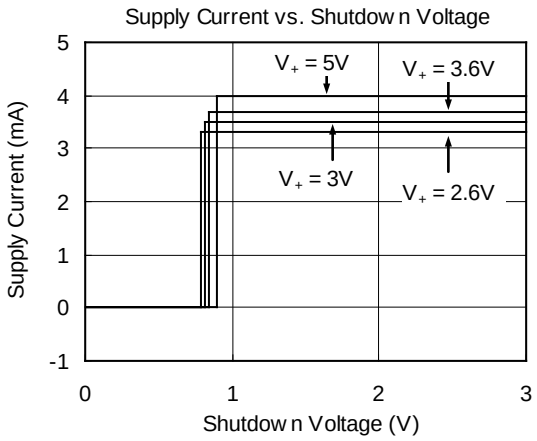


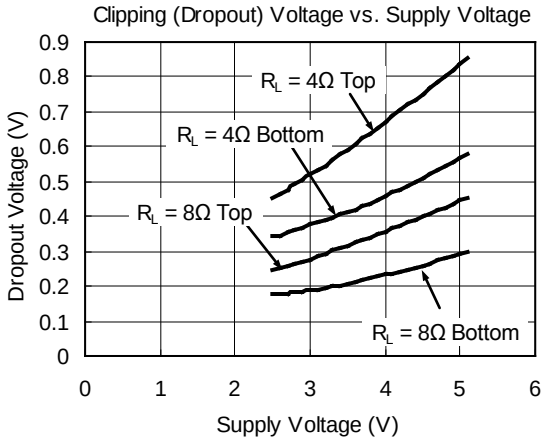
Supply Current vs. Shutdown Voltage

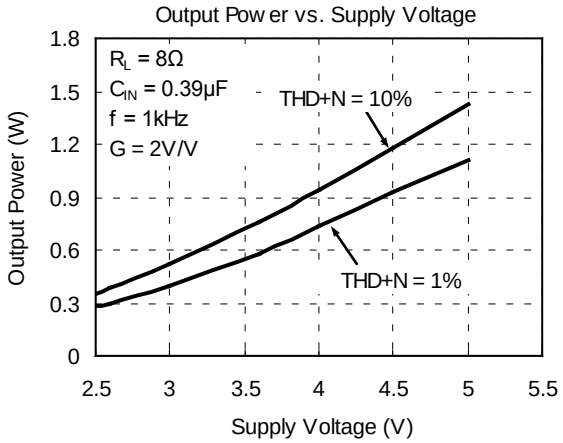


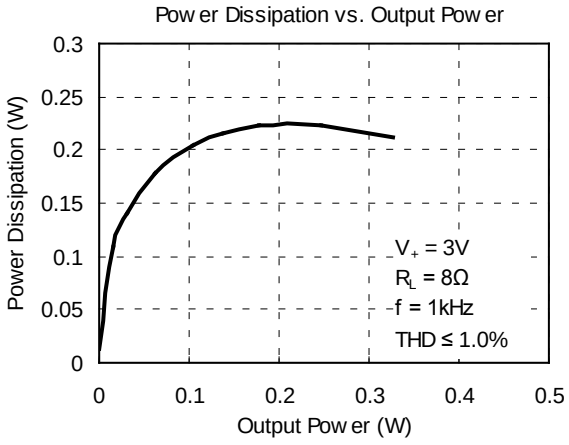
TYPICAL PERFORMANCE CHARACTERISTICS (continued)

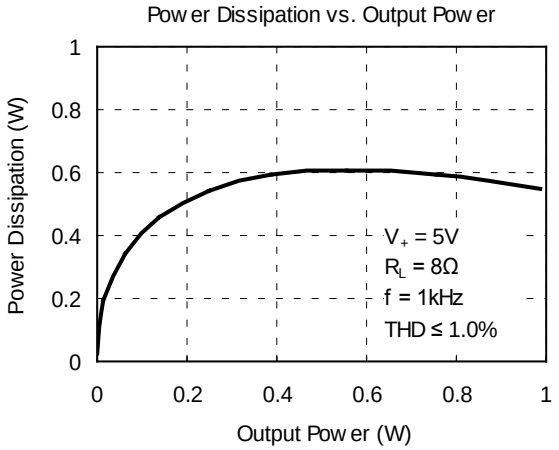






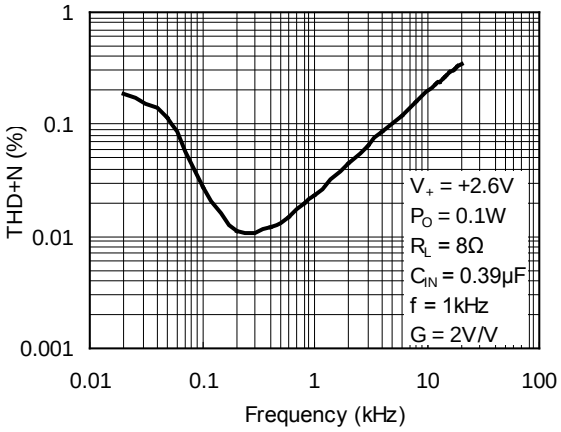




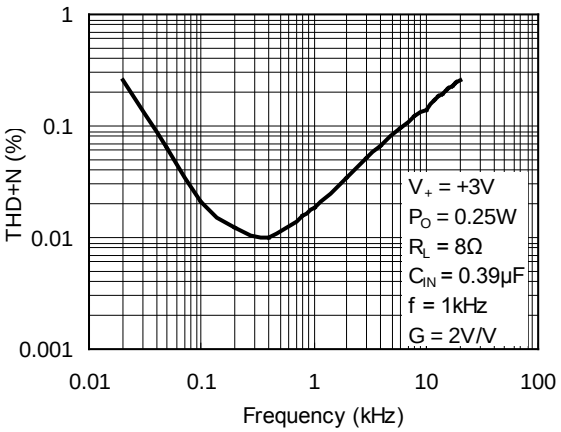


TYPICAL PERFORMANCE CHARACTERISTICS (continued)

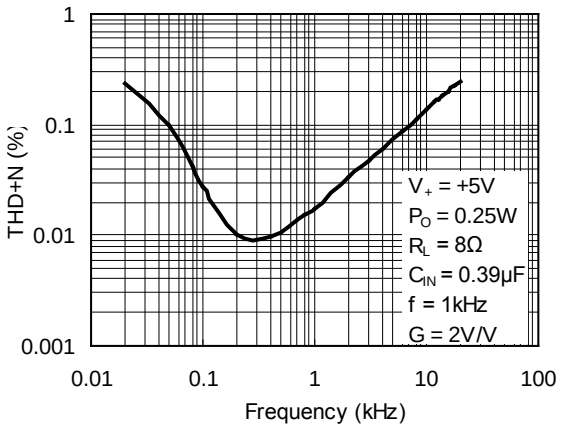
THD+N vs. Frequency



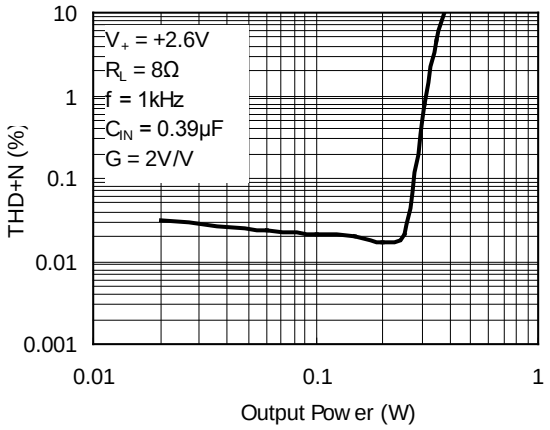
THD+N vs. Frequency



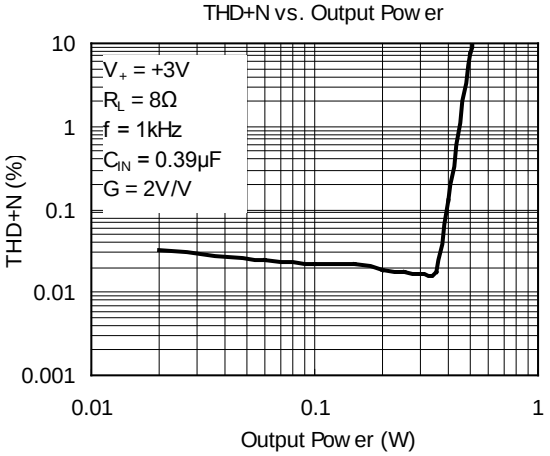
THD+N vs. Frequency



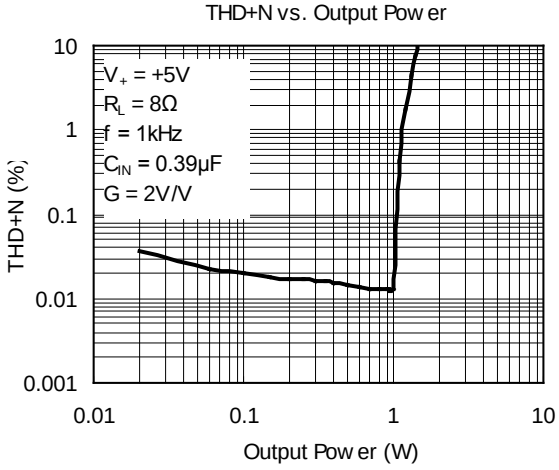
THD+N vs. Output Power



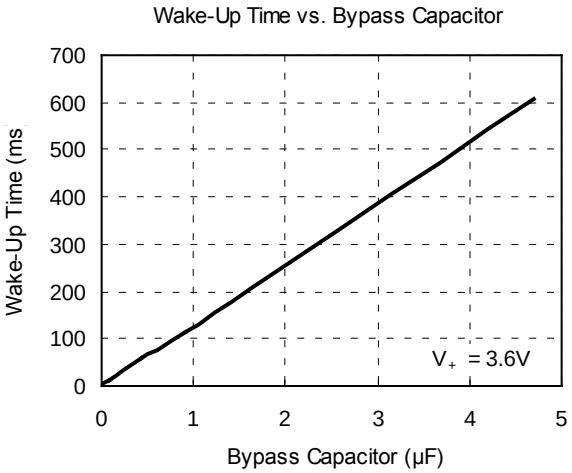
THD+N vs. Output Power



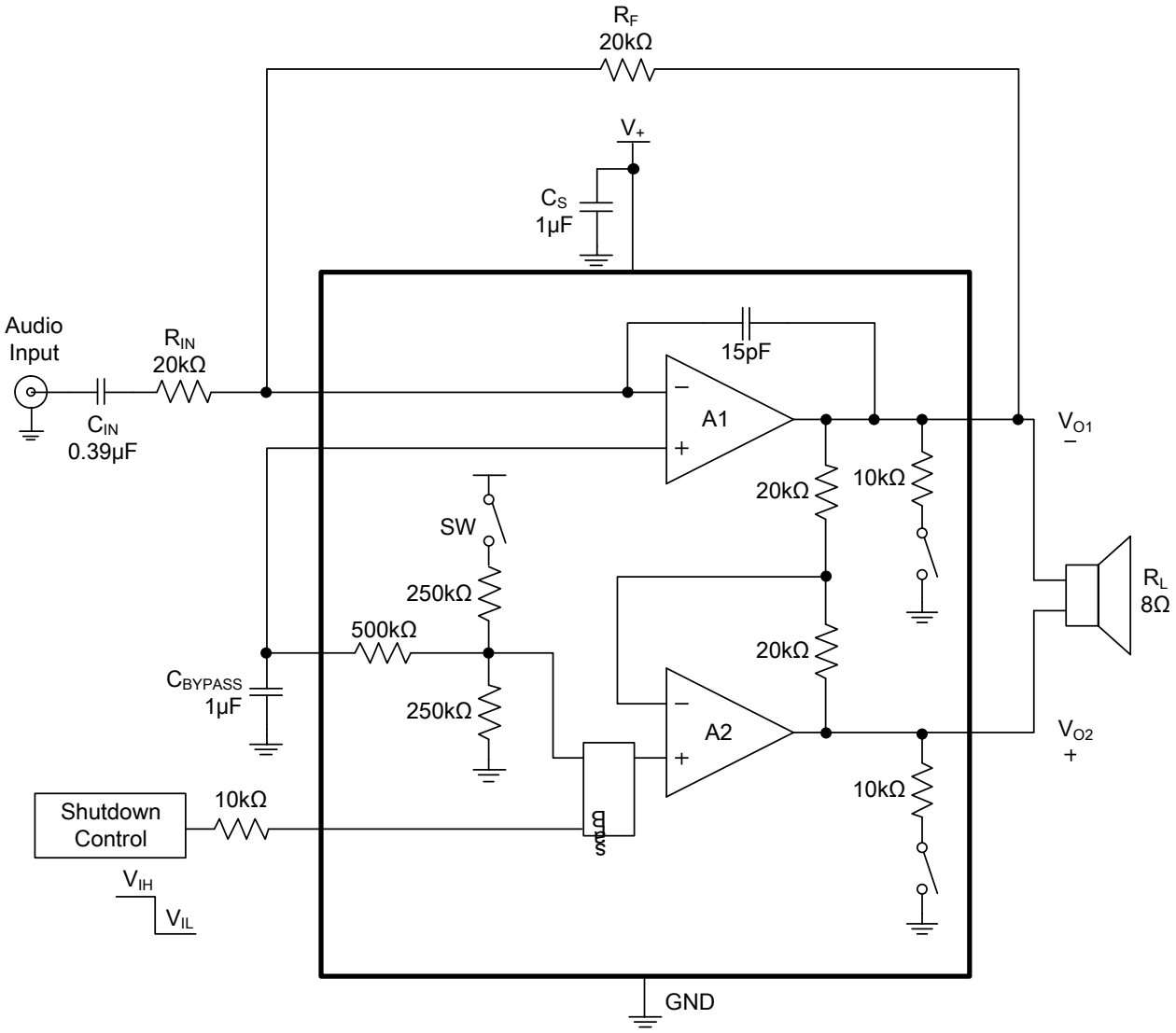
THD+N vs. Output Power



TYPICAL PERFORMANCE CHARACTERISTICS (continued)



TYPICAL APPLICATION

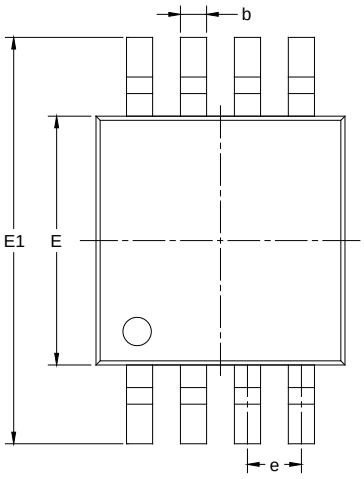


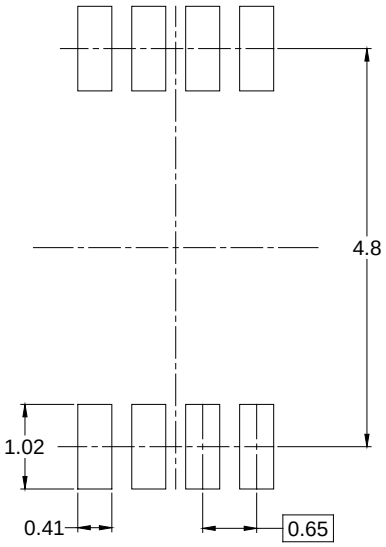
NOTE:

1. A 10kΩ resistor must be serially connected to $\overline{SHDN}$ pin.

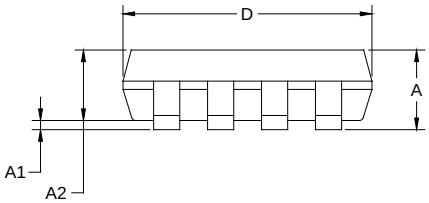
PACKAGE OUTLINE DIMENSIONS

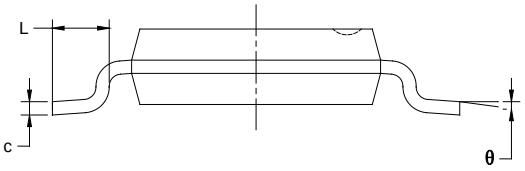
MSOP-8





RECOMMENDED LAND PATTERN (Unit: mm)

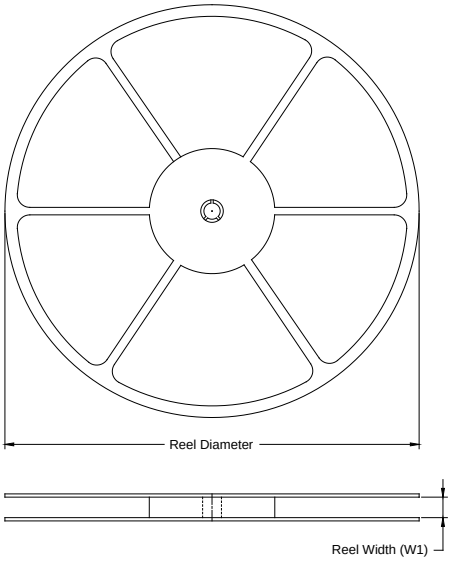




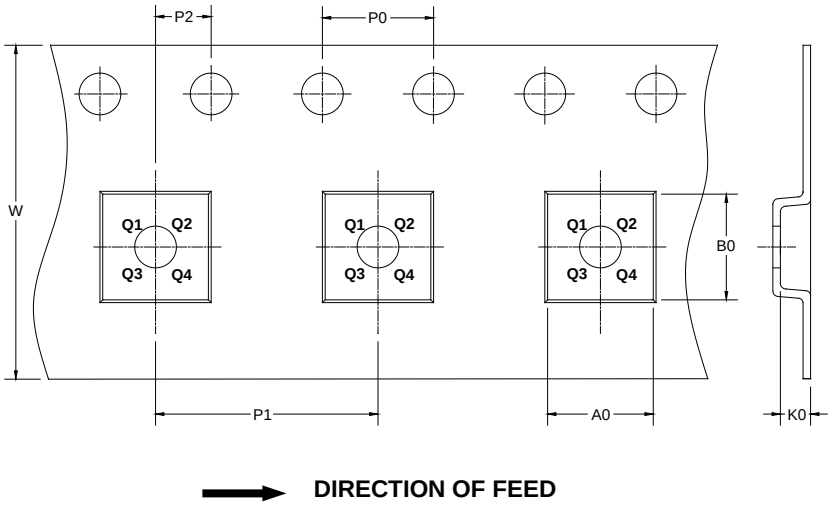
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	0.820	1.100	0.032	0.043
A1	0.020	0.150	0.001	0.006
A2	0.750	0.950	0.030	0.037
b	0.250	0.380	0.010	0.015
c	0.090	0.230	0.004	0.009
D	2.900	3.100	0.114	0.122
E	2.900	3.100	0.114	0.122
E1	4.750	5.050	0.187	0.199
e	0.650 BSC		0.026 BSC	
L	0.400	0.800	0.016	0.031
θ	0°	6°	0°	6°

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



DIRECTION OF FEED

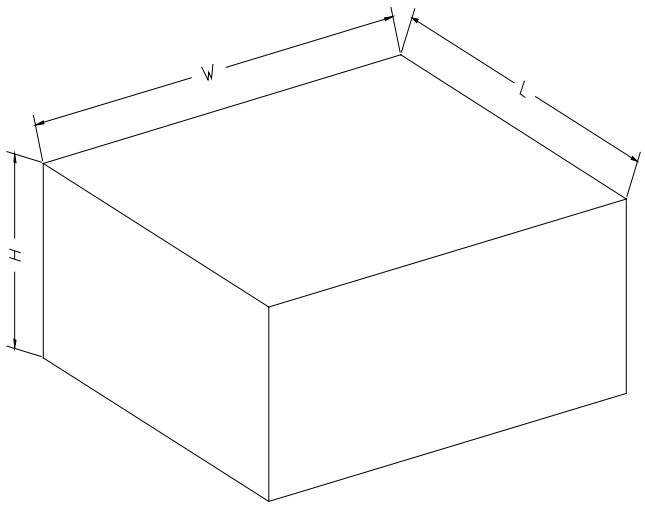
NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF TAPE AND REEL

Package Type	Reel Diameter	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	Pin1 Quadrant
MSOP-8	13″	12.4	5.20	3.30	1.50	4.0	8.0	2.0	12.0	Q1

DD0001

CARTON BOX DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF CARTON BOX

Reel Type	Length (mm)	Width (mm)	Height (mm)	Pizza/Carton
13″	386	280	370	5

DD0002