



YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

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Description

The NK-AP2112 is CMOS process low dropout linear regulator with enable function, the regulator delivers a guaranteed 600mA (min.) continuous load current.

The NK-AP2112 is available with a fixed output voltage of 1.2V, 1.8V, 2.5V, 2.6V, or 3.3V. The LDO has an output accuracy of $\pm 1.5\%$ and a very fast loop response providing excellent performance for dealing with line and load transients. The NK-AP2112 includes an auto discharge function which connects the output to ground via $60\ \Omega$ of resistance when the device is disabled.

The regulator features low power consumption, and provides SOT25, SOT89-5, and SO-8 packages. Previously SOT-23-5, SOT-89-5 and SOIC-8 packages were respectively identified as SOT23-5, SOT89-5 and SO-8 but have been renamed to match the latest Diodes Incorporated's nomenclature.

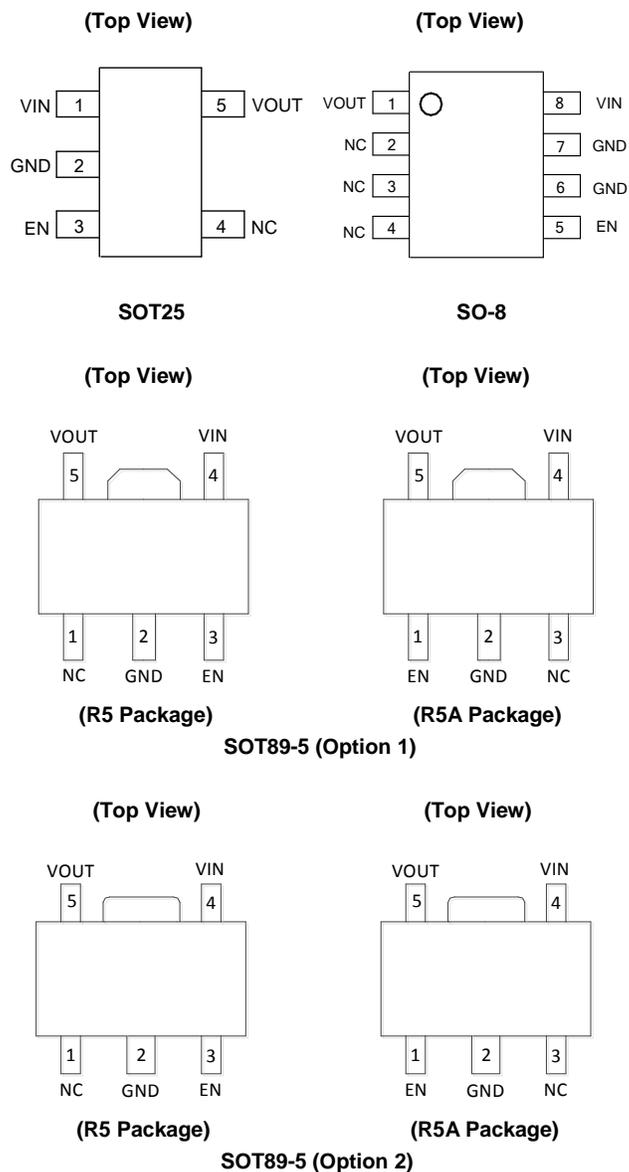
Features

- Output Voltage Accuracy: $\pm 1.5\%$
- Output Current: 600mA (Min.)
- Foldback Short Current Protection: 50mA
- Enable Function to Turn ON/OFF V_{OUT}
- Low Dropout Voltage (3.3V): 250mV (Typ.) @ $I_{OUT} = 600mA$
- Excellent Load Regulation: 0.2%/A (Typ.)
- Excellent Line Regulation: 0.02%/V (Typ.)
- Low Quiescent Current: 55 μA (Typ.)
- Low Standby Current: 0.01 μA (Typ.)
- Low Output Noise: 50 μV_{RMS}
- PSRR: 100Hz -65dB, 1kHz -65dB
- OTSD Protection
- Stable with 1.0 μF Flexible Cap: Ceramic, Tantalum and Aluminum Electrolytic
- Operation Temperature Range: -40°C to +85°C
- ESD: MM 400V, HBM 4000V

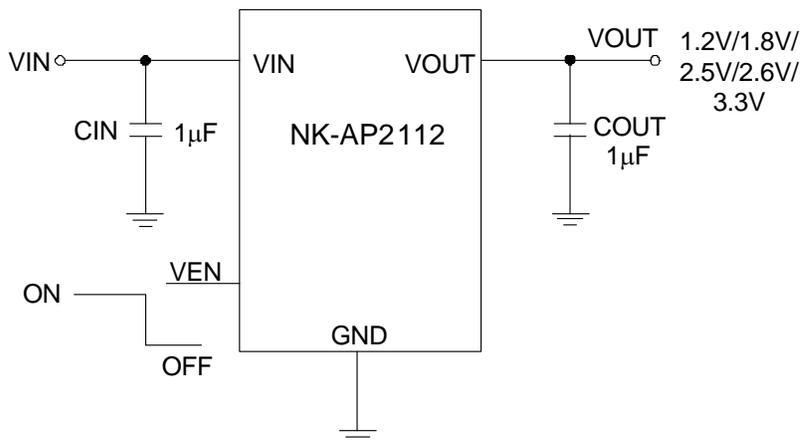
Applications

- Laptop Computer
- LCD Monitor
- Portable DVD

Pin Assignments



Typical Applications Circuit (Note 4)

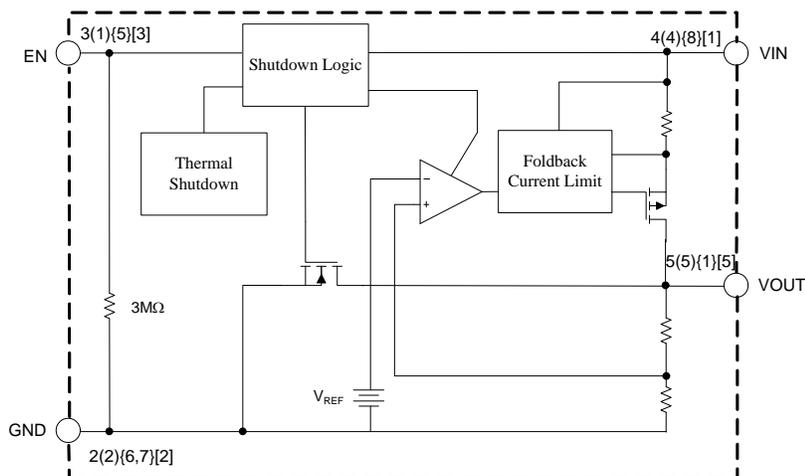


Note 4: It is recommended to use X7R or X5R dielectric capacitor if 1.0µF ceramic capacitor is selected as input/output capacitors.

Pin Descriptions

Pin Number			Pin Name	Function
SOT25	SOT89-5	SO-8		
1	4	8	VIN	Input Voltage
2	2	6, 7	GND	GND
3	3 (R5)	5	EN	Chip Enable, H – normal work, L – shutdown output
	1 (R5A)			
—	1 (R5)	2, 3, 4	NC	No Connection
	3 (R5A)			
5	5	1	VOUT	Output Voltage

Functional Block Diagram



A (B){C}[D]
 A: SOT89-5 (R5)
 B: SOT89-5 (R5A)
 C: SO-8
 D: SOT25

Absolute Maximum Ratings (Note 5)

Symbol	Parameter	Rating		Unit
V_{CC}	Power Supply Voltage	6.5		V
T_J	Operating Junction Temperature Range	+150		°C
T_{STG}	Storage Temperature Range	-65 to +150		°C
T_{LEAD}	Lead Temperature (Soldering, 10 Seconds)	+260		°C
θ_{JA}	Thermal Resistance (Junction to Ambient)(No Heatsink)	SOT25	184	°C/W
		SO-8	114	
		SOT89-5	120	
—	ESD (Machine Model)	400		V
—	ESD (Human Body Model)	4000		V

Note 5: Stresses greater than those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “Recommended Operating Conditions” is not implied. Exposure to “Absolute Maximum Ratings” for extended periods may affect device reliability.

Recommended Operating Conditions

Symbol	Parameter	Min	Max	Unit
V_{IN}	Supply Voltage	2.5	6.0	V
T_A	Ambient Operation Temperature Range	-40	+85	°C

Electrical Characteristics

NK-AP2112-1.2 Electrical Characteristics

unless otherwise specified (Note 6))

(@ $V_{IN} = 2.5V$, $C_{IN} = 1.0\mu F$ (Ceramic), $C_{OUT} = 1.0\mu F$ (Ceramic), Typical $T_A = +25^\circ C$,

Symbol	Parameter	Conditions	Min	Typ	Max	Unit	
V_{OUT}	Output Voltage	$V_{IN} = 2.5V$, $1mA \leq I_{OUT} \leq 30mA$	$V_{OUT} * 98.5\%$	1.2	$V_{OUT} * 101.5\%$	V	
$I_{OUT(MAX)}$	Maximum Output Current	$V_{IN} = 2.5V$, $V_{OUT} = 1.182V$ to $1.218V$	600	—	—	mA	
$(\Delta V_{OUT}/V_{OUT})/\Delta I_{OUT}$	Load Regulation	$V_{IN} = 2.5V$, $1mA \leq I_{OUT} \leq 600mA$	-1	0.2	1	%/A	
$(\Delta V_{OUT}/V_{OUT})/\Delta V_{IN}$	Line Regulation	$2.5V \leq V_{IN} \leq 6V$, $I_{OUT} = 30mA$	-0.1	0.02	0.1	%/V	
V_{DROP}	Dropout Voltage	$I_{OUT} = 10mA$	—	1000	1300	mV	
		$I_{OUT} = 300mA$	—	1000	1300		
		$I_{OUT} = 600mA$	—	1000	1300		
I_Q	Quiescent Current	$V_{IN} = 2.5V$, $I_{OUT} = 0mA$	—	55	80	μA	
I_{STD}	Standby Current	$V_{IN} = 2.5V$, V_{EN} in OFF mode	—	0.01	1.0	μA	
PSRR	Power Supply Rejection Ratio	Ripple 0.5Vp-p $V_{IN} = 2.5V$, $I_{OUT} = 100mA$	f = 100Hz	—	65	—	dB
			f = 1kHz	—	65	—	
$(\Delta V_{OUT}/V_{OUT})/\Delta T$	Output Voltage Temperature Coefficient	$I_{OUT} = 30mA$ $T_A = -40^\circ C$ to $+85^\circ C$	—	± 100	—	ppm/ $^\circ C$	
I_{SHORT}	Short Current Limit	$V_{OUT} = 0V$	—	50	—	mA	
V_{NOISE}	RMS Output Noise	No Load, $10Hz \leq f \leq 100kHz$	—	50	—	μV_{RMS}	
V_{IH}	V_{EN} High Voltage	Enable logic high, regulator on	1.5	—	6.0	V	
V_{IL}	V_{EN} Low Voltage	Enable logic low, regulator off	0	—	0.4		
t_s	Start-up Time	No Load	—	20	—	μs	
R_{PD}	EN Pull Down Resistor	—	—	3.0	—	M Ω	
R_{DCHG}	V_{OUT} Discharge Resistor	Set EN pin at Low	—	60	—	Ω	
T_{OTSD}	Thermal Shutdown Temperature	—	—	+160	—	$^\circ C$	
T_{HYOTSD}	Thermal Shutdown Hysteresis	—	—	+25	—		
θ_{JC}	Thermal Resistance (Junction to Case)	SOT25	—	96	—	$^\circ C/W$	
		SO-8	—	75	—		
		SOT89-5	—	47	—		

Note 6: Production testing at $T_A = +25^\circ C$. Over temperature specifications guaranteed by design only.

Electrical Characteristics (Cont.)

NK-AP2112-1.8 Electrical Characteristics

unless otherwise specified (Note 6)

(@ $V_{IN} = 2.8V$, $C_{IN} = 1.0\mu F$ (Ceramic), $C_{OUT} = 1.0\mu F$ (Ceramic), Typical $T_A = +25^\circ C$,

Symbol	Parameter	Conditions	Min	Typ	Max	Unit	
V_{OUT}	Output Voltage	$V_{IN} = 2.8V$, $1mA \leq I_{OUT} \leq 30mA$	$V_{OUT} * 98.5\%$	1.8	$V_{OUT} * 101.5\%$	V	
$I_{OUT(MAX)}$	Maximum Output Current	$V_{IN} = 2.8V$, $V_{OUT} = 1.773V$ to $1.827V$	600	—	—	mA	
$(\Delta V_{OUT}/V_{OUT})/\Delta I_{OUT}$	Load Regulation	$V_{OUT} = 1.8V$, $V_{IN} = V_{OUT} + 1V$, $1mA \leq I_{OUT} \leq 600mA$	-1	0.2	1	%/A	
$(\Delta V_{OUT}/V_{OUT})/\Delta V_{IN}$	Line Regulation	$2.8V \leq V_{IN} \leq 6V$, $I_{OUT} = 30mA$	-0.1	0.02	0.1	%/V	
V_{DROP}	Dropout Voltage	$I_{OUT} = 10mA$	—	500	700	mV	
		$I_{OUT} = 300mA$	—	500	700		
		$I_{OUT} = 600mA$	—	500	700		
I_Q	Quiescent Current	$V_{IN} = 2.8V$, $I_{OUT} = 0mA$	—	55	80	μA	
I_{STD}	Standby Current	$V_{IN} = 2.8V$, V_{EN} in OFF mode	—	0.01	1.0	μA	
PSRR	Power Supply Rejection Ratio	Ripple 0.5Vp-p $V_{IN} = 2.8V$, $I_{OUT} = 100mA$	f = 100Hz	—	65	—	dB
			f = 1kHz	—	65	—	
$(\Delta V_{OUT}/V_{OUT})/\Delta T$	Output Voltage Temperature Coefficient	$I_{OUT} = 30mA$ $T_A = -40^\circ C$ to $+85^\circ C$	—	± 100	—	ppm/ $^\circ C$	
I_{SHORT}	Short Current Limit	$V_{OUT} = 0V$	—	50	—	mA	
V_{NOISE}	RMS Output Noise	No Load, $10Hz \leq f \leq 100kHz$	—	50	—	μV_{RMS}	
V_{IH}	V_{EN} High Voltage	Enable logic high, regulator on	1.5	—	6.0	V	
V_{IL}	V_{EN} Low Voltage	Enable logic low, regulator off	0	—	0.4		
t_s	Start-up Time	No Load	—	20	—	μs	
R_{PD}	EN Pull Down Resistor	—	—	3.0	—	M Ω	
R_{DCHG}	V_{OUT} Discharge Resistor	Set EN pin at Low	—	60	—	Ω	
T_{OTSD}	Thermal Shutdown Temperature	—	—	+160	—	$^\circ C$	
T_{HYOTSD}	Thermal Shutdown Hysteresis	—	—	+25	—		
θ_{JC}	Thermal Resistance (Junction to Case)	SOT25	—	96	—	$^\circ C/W$	
		SO-8	—	75	—		
		SOT89-5	—	47	—		

Note 6: Production testing at $T_A = +25^\circ C$. Over temperature specifications guaranteed by design only.

Electrical Characteristics (Cont.)

NK-AP2112-2.5 Electrical Characteristics

unless otherwise specified (Note 6)

(@ $V_{IN} = 3.5V$, $C_{IN} = 1.0\mu F$ (Ceramic), $C_{OUT} = 1.0\mu F$ (Ceramic), Typical $T_A = +25^\circ C$,

Symbol	Parameter	Conditions	Min	Typ	Max	Unit	
V_{OUT}	Output Voltage	$V_{IN} = 3.5V$, $1mA \leq I_{OUT} \leq 30mA$	V_{OUT} *98.5%	2.5	V_{OUT} *101.5%	V	
$I_{OUT(MAX)}$	Maximum Output Current	$V_{IN} = 3.5V$, $V_{OUT} = 2.463V$ to $2.537V$	600	—	—	mA	
$(\Delta V_{OUT}/V_{OUT})/\Delta I_{OUT}$	Load Regulation	$V_{OUT} = 2.5V$, $V_{IN} = V_{OUT}+1V$, $1mA \leq I_{OUT} \leq 600mA$	-1	0.2	1	%/A	
$(\Delta V_{OUT}/V_{OUT})/\Delta V_{IN}$	Line Regulation	$3.5V \leq V_{IN} \leq 6V$, $I_{OUT} = 30mA$	-0.1	0.02	0.1	%/V	
V_{DROP}	Dropout Voltage	$I_{OUT} = 10mA$	—	5	8	mV	
		$I_{OUT} = 300mA$	—	125	200		
		$I_{OUT} = 600mA$	—	250	400		
I_Q	Quiescent Current	$V_{IN} = 3.5V$, $I_{OUT} = 0mA$	—	55	80	μA	
I_{STD}	Standby Current	$V_{IN} = 3.5V$, V_{EN} in OFF mode	—	0.01	1.0	μA	
PSRR	Power Supply Rejection Ratio	Ripple 0.5Vp-p $V_{IN} = 3.5V$, $I_{OUT} = 100mA$	f = 100Hz	—	65	—	dB
			f = 1KHz	—	65	—	
$(\Delta V_{OUT}/V_{OUT})/\Delta T$	Output Voltage Temperature Coefficient	$I_{OUT} = 30mA$ $T_A = -40^\circ C$ to $+85^\circ C$	—	± 100	—	ppm/ $^\circ C$	
I_{SHORT}	Short Current Limit	$V_{OUT} = 0V$	—	50	—	mA	
V_{NOISE}	RMS Output Noise	No Load, $10Hz \leq f \leq 100kHz$	—	50	—	μV_{RMS}	
V_{IH}	V_{EN} High Voltage	Enable logic high, regulator on	1.5	—	6.0	V	
V_{IL}	V_{EN} Low Voltage	Enable logic low, regulator off	0	—	0.4		
t_s	Start-up Time	No Load	—	20	—	μs	
R_{PD}	EN Pull Down Resistor	—	—	3.0	—	M Ω	
R_{DCHG}	V_{OUT} Discharge Resistor	Set EN pin at Low	—	60	—	Ω	
T_{OTS}	Thermal Shutdown Temperature	—	—	+160	—	$^\circ C$	
T_{HYOTS}	Thermal Shutdown Hysteresis	—	—	+25	—		
θ_{JC}	Thermal Resistance (Junction to Case)	SOT25	—	96	—	$^\circ C/W$	
		SO-8	—	75	—		
		SOT89-5	—	47	—		

Note 6: Production testing at $T_A = +25^\circ C$. Over temperature specifications guaranteed by design only.

Electrical Characteristics (Cont.)

NK-AP2112-2.6 Electrical Characteristics

unless otherwise specified (Note 6)

(@ $V_{IN} = 3.6V$, $C_{IN} = 1.0\mu F$ (Ceramic), $C_{OUT} = 1.0\mu F$ (Ceramic), Typical $T_A = +25^\circ C$,

Symbol	Parameter	Conditions	Min	Typ	Max	Unit	
V_{OUT}	Output Voltage	$V_{IN} = 3.6V$, $1mA \leq I_{OUT} \leq 30mA$	V_{OUT} *98.5%	2.6	V_{OUT} *101.5%	V	
$I_{OUT(MAX)}$	Maximum Output Current	$V_{IN} = 3.6V$, $V_{OUT} = 2.561V$ to $2.639V$	600	—	—	mA	
$(\Delta V_{OUT}/V_{OUT})/\Delta I_{OUT}$	Load Regulation	$V_{OUT} = 2.6V$, $V_{IN} = V_{OUT}+1V$, $1mA \leq I_{OUT} \leq 600mA$	-1	0.2	1	%/A	
$(\Delta V_{OUT}/V_{OUT})/\Delta V_{IN}$	Line Regulation	$3.6V \leq V_{IN} \leq 6V$, $I_{OUT} = 30mA$	-0.1	0.02	0.1	%/V	
V_{DROP}	Dropout Voltage	$I_{OUT} = 10mA$	—	5	8	mV	
		$I_{OUT} = 300mA$	—	125	200		
		$I_{OUT} = 600mA$	—	250	400		
I_Q	Quiescent Current	$V_{IN} = 3.6V$, $I_{OUT} = 0mA$	—	55	80	μA	
I_{STD}	Standby Current	$V_{IN} = 3.6V$, V_{EN} in OFF mode	—	0.01	1.0	μA	
PSRR	Power Supply Rejection Ratio	Ripple 0.5Vp-p $V_{IN} = 3.6V$, $I_{OUT} = 100mA$	f = 100Hz	—	65	—	dB
			f = 1kHz	—	65	—	
$(\Delta V_{OUT}/V_{OUT})/\Delta T$	Output Voltage Temperature Coefficient	$I_{OUT} = 30mA$ $T_A = -40^\circ C$ to $+85^\circ C$	—	± 100	—	ppm/ $^\circ C$	
I_{SHORT}	Short Current Limit	$V_{OUT} = 0V$	—	50	—	mA	
V_{NOISE}	RMS Output Noise	No Load, $10Hz \leq f \leq 100kHz$	—	50	—	μV_{RMS}	
V_{IH}	V_{EN} High Voltage	Enable logic high, regulator on	1.5	—	6.0	V	
V_{IL}	V_{EN} Low Voltage	Enable logic low, regulator off	0	—	0.4		
t_s	Start-up Time	No Load	—	20	—	μs	
R_{PD}	EN Pull Down Resistor	—	—	3.0	—	M Ω	
R_{DCHG}	V_{OUT} Discharge Resistor	Set EN pin at Low	—	60	—	Ω	
T_{OTSD}	Thermal Shutdown Temperature	—	—	+160	—	$^\circ C$	
T_{HYOTSD}	Thermal Shutdown Hysteresis	—	—	+25	—		
θ_{JC}	Thermal Resistance (Junction to Case)	SOT25	—	96	—	$^\circ C/W$	
		SO-8	—	75	—		
		SOT89-5	—	47	—		

Note 6: Production testing at $T_A = +25^\circ C$. Over temperature specifications guaranteed by design only.

Electrical Characteristics (Cont.)

NK-AP2112-3.3 Electrical Characteristics

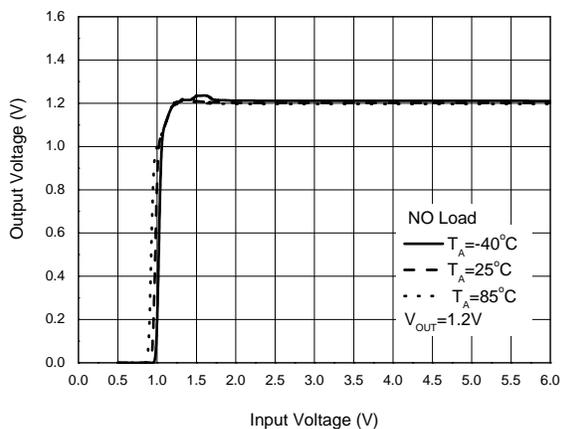
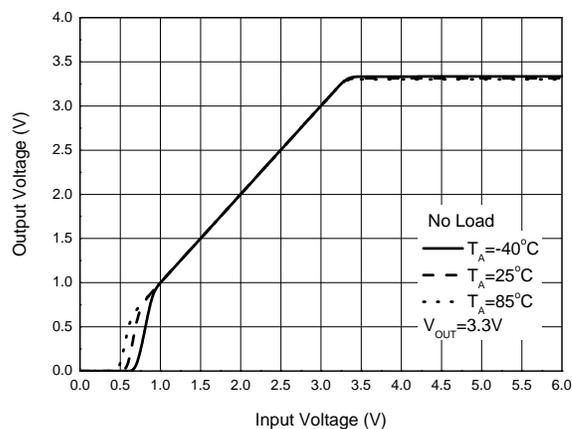
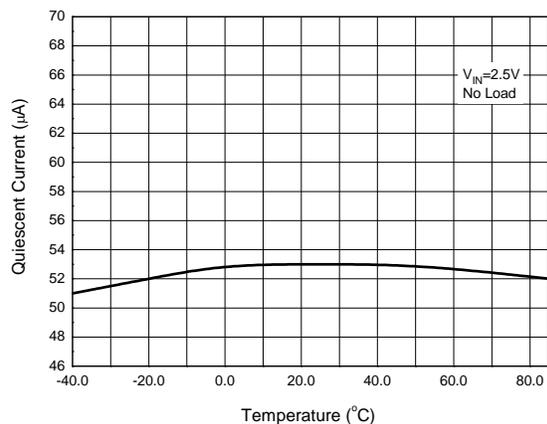
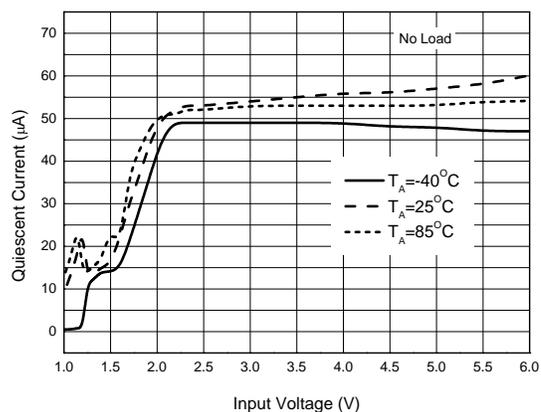
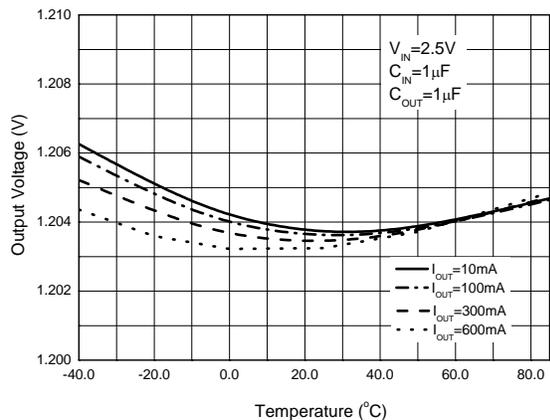
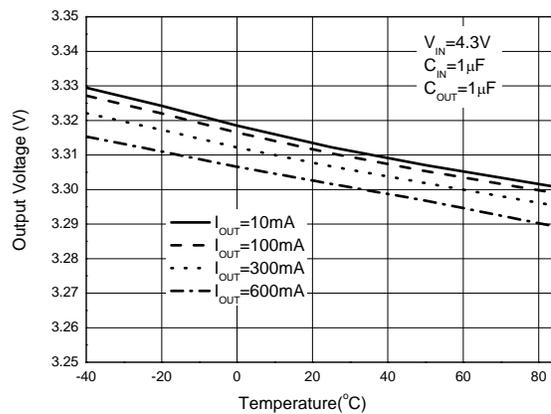
unless otherwise specified (Note 6))

(@ $V_{IN} = 4.3V$, $C_{IN} = 1.0\mu F$ (Ceramic), $C_{OUT} = 1.0\mu F$ (Ceramic), Typical $T_A = +25^\circ C$,

Symbol	Parameter	Conditions	Min	Typ	Max	Unit	
V_{OUT}	Output Voltage	$V_{IN} = 4.3V$, $1mA \leq I_{OUT} \leq 30mA$	V_{OUT} *98.5%	3.3	V_{OUT} *101.5%	V	
$I_{OUT(MAX)}$	Maximum Output Current	$V_{IN} = 4.3V$, $V_{OUT} = 3.251V$ to $3.350V$	600	—	—	mA	
$(\Delta V_{OUT}/V_{OUT})/\Delta I_{OUT}$	Load Regulation	$V_{IN} = 4.3V$, $1mA \leq I_{OUT} \leq 600mA$	-1	0.2	1	%/A	
$(\Delta V_{OUT}/V_{OUT})/\Delta V_{IN}$	Line Regulation	$4.3V \leq V_{IN} \leq 6V$, $I_{OUT} = 30mA$	-0.1	0.02	0.1	%/V	
V_{DROP}	Dropout Voltage	$I_{OUT} = 10mA$	—	5	8	mV	
		$I_{OUT} = 300mA$	—	125	200		
		$I_{OUT} = 600mA$	—	250	400		
I_Q	Quiescent Current	$V_{IN} = 4.3V$, $I_{OUT} = 0mA$	—	55	80	μA	
I_{STD}	Standby Current	$V_{IN} = 4.3V$, V_{EN} in OFF mode	—	0.01	1.0	μA	
PSRR	Power Supply Rejection Ratio	Ripple 0.5Vp-p $V_{IN} = 4.3V$, $I_{OUT} = 100mA$	f = 100Hz	—	65	—	dB
			f = 1kHz	—	65	—	
$(\Delta V_{OUT}/V_{OUT})/\Delta T$	Output Voltage Temperature Coefficient	$I_{OUT} = 30mA$ $T_A = -40^\circ C$ to $+85^\circ C$	—	± 100	—	ppm/ $^\circ C$	
I_{SHORT}	Short Current Limit	$V_{OUT} = 0V$	—	50	—	mA	
V_{NOISE}	RMS Output Noise	No Load, $10Hz \leq f \leq 100kHz$	—	50	—	μV_{RMS}	
V_{IH}	V_{EN} High Voltage	Enable logic high, regulator on	1.5	—	6.0	V	
V_{IL}	V_{EN} Low Voltage	Enable logic low, regulator off	0	—	0.4		
t_S	Start-up Time	No Load	—	20	—	μs	
R_{PD}	EN Pull Down Resistor	—	—	3.0	—	M Ω	
R_{DCHG}	V_{OUT} Discharge Resistor	Set EN pin at Low	—	60	—	Ω	
T_{OTSD}	Thermal Shutdown Temperature	—	—	+160	—	$^\circ C$	
T_{HYOTSD}	Thermal Shutdown Hysteresis	—	—	+25	—		
θ_{JC}	Thermal Resistance (Junction to Case)	SOT25	—	96	—	$^\circ C/W$	
		SO-8	—	75	—		
		SOT89-5	—	47	—		

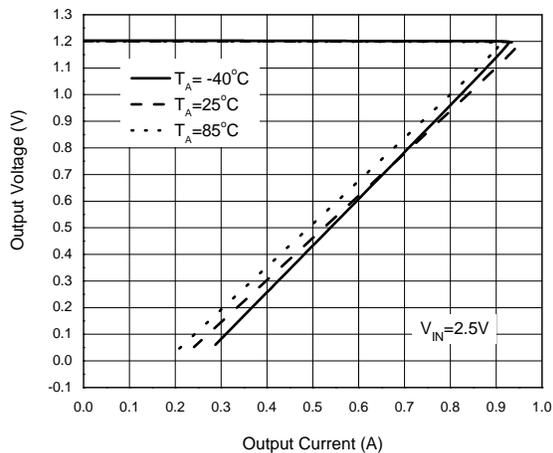
Note 6: Production testing at $T_A = +25^\circ C$. Over temperature specifications guaranteed by design only.

Performance Characteristics

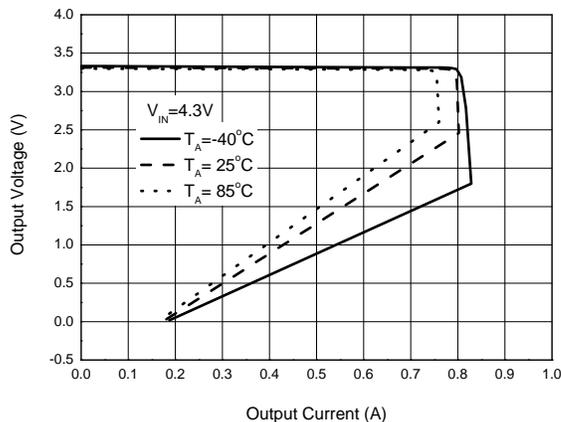
Output Voltage vs. Input Voltage

Output Voltage vs. Input Voltage

Quiescent Current vs. Temperature

Quiescent Current vs. Input Voltage

Output Voltage vs. Temperature

Output Voltage vs. Temperature


Performance Characteristics (Cont.)

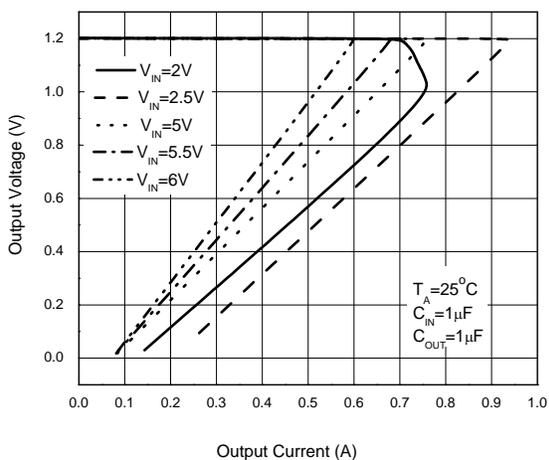
Output Voltage vs. Output Current



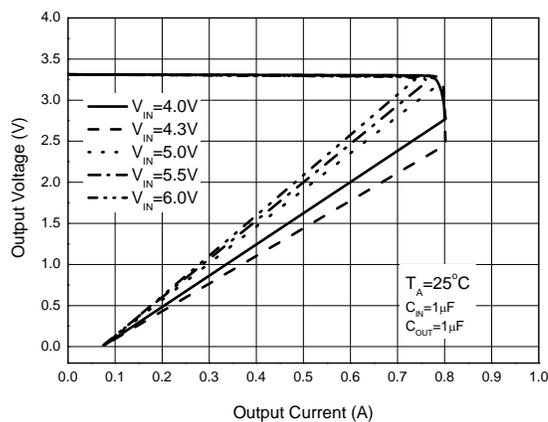
Output Voltage vs. Output Current



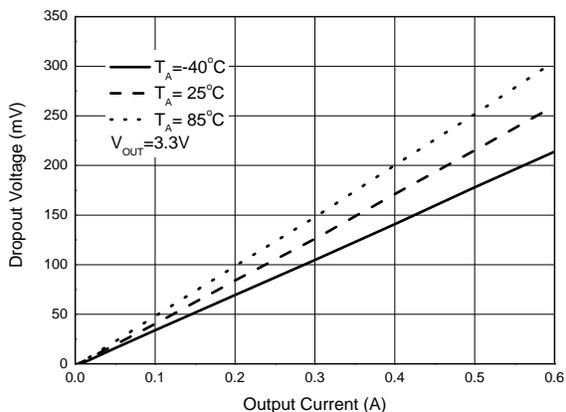
Output Voltage vs. Output Current



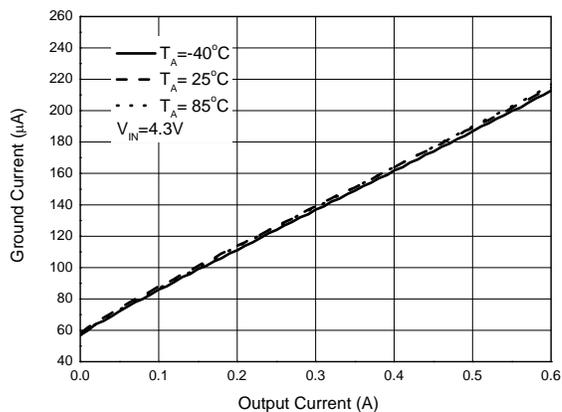
Output Voltage vs. Output Current



Dropout Voltage vs. Output Current

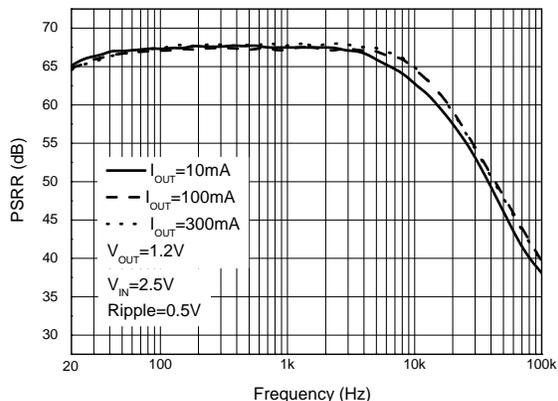


Ground Current vs. Output Current

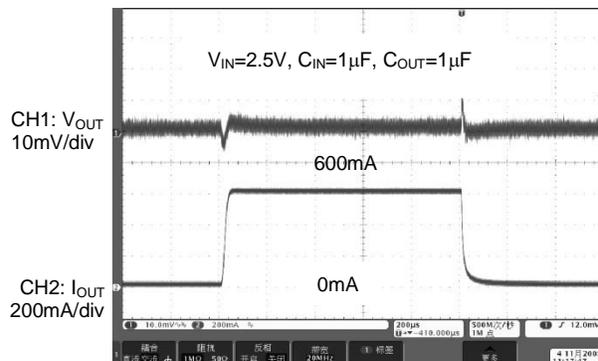


Performance Characteristics (Cont.)

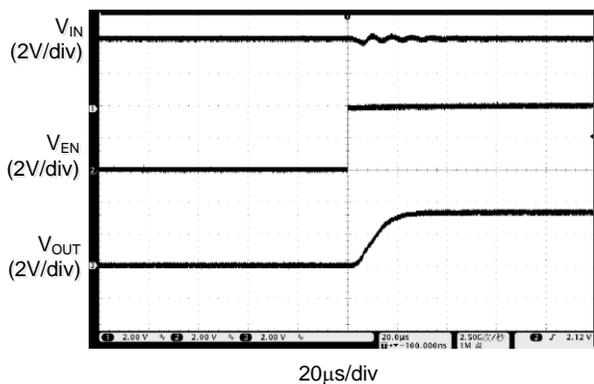
PSRR vs. Frequency



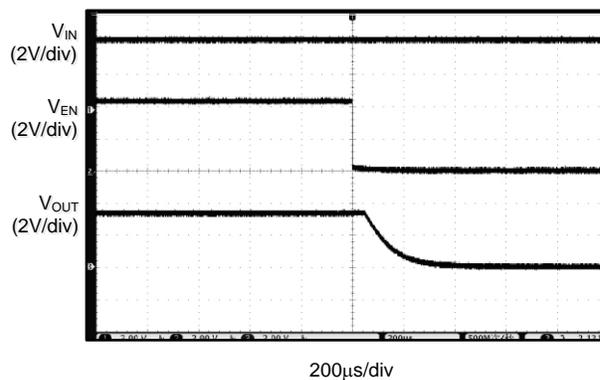
Load Transient



Enable On

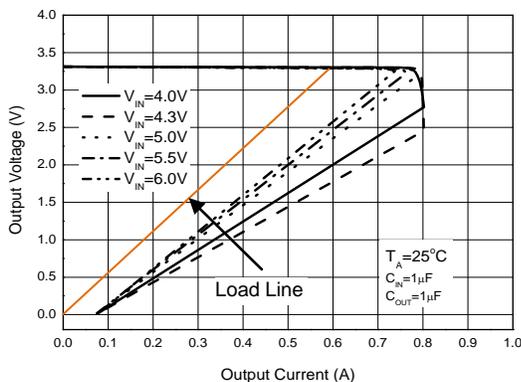


Enable Off



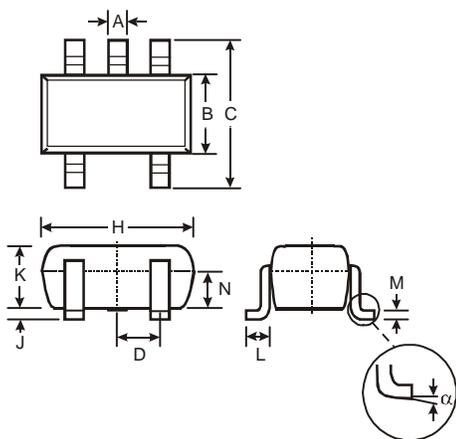
Application Note

In some unusual applications where a current load could be present at the output before the part is enabled the fold back current limiting may prevent the part from starting. Applications with multiple supplies or negative supplies need to be evaluated for this possibility. Product testing where a current source is applied before the part is enabled could be another area of concern. With a normal load as shown below there is no interference of the fold back current limiting circuit.



Package Outline Dimensions (Previously identified as SOT-23-5 for this product)

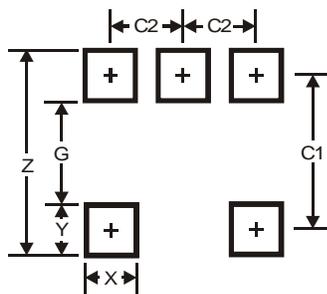
SOT25



SOT25			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	-	-	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
N	0.70	0.80	0.75
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout

SOT25



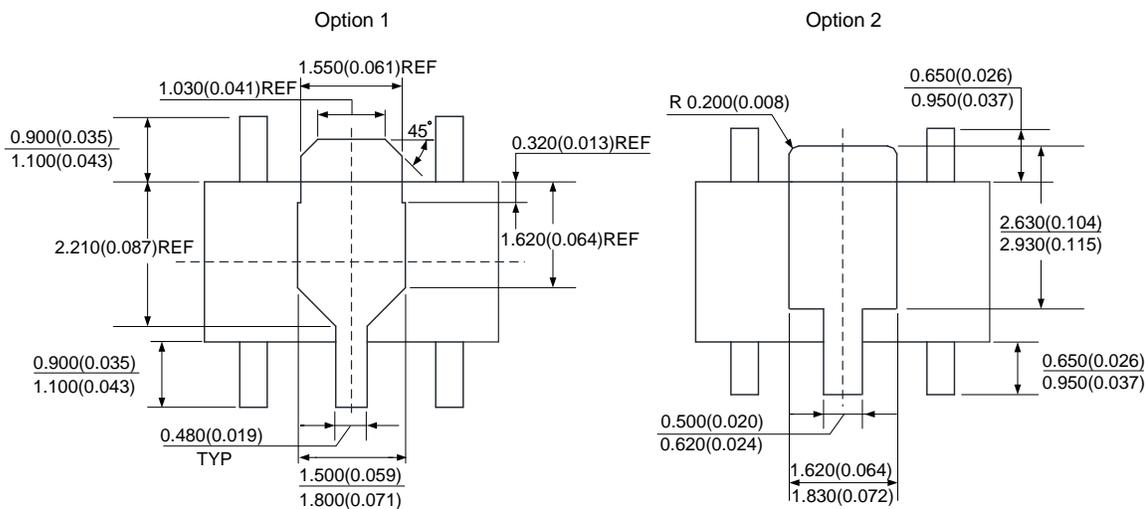
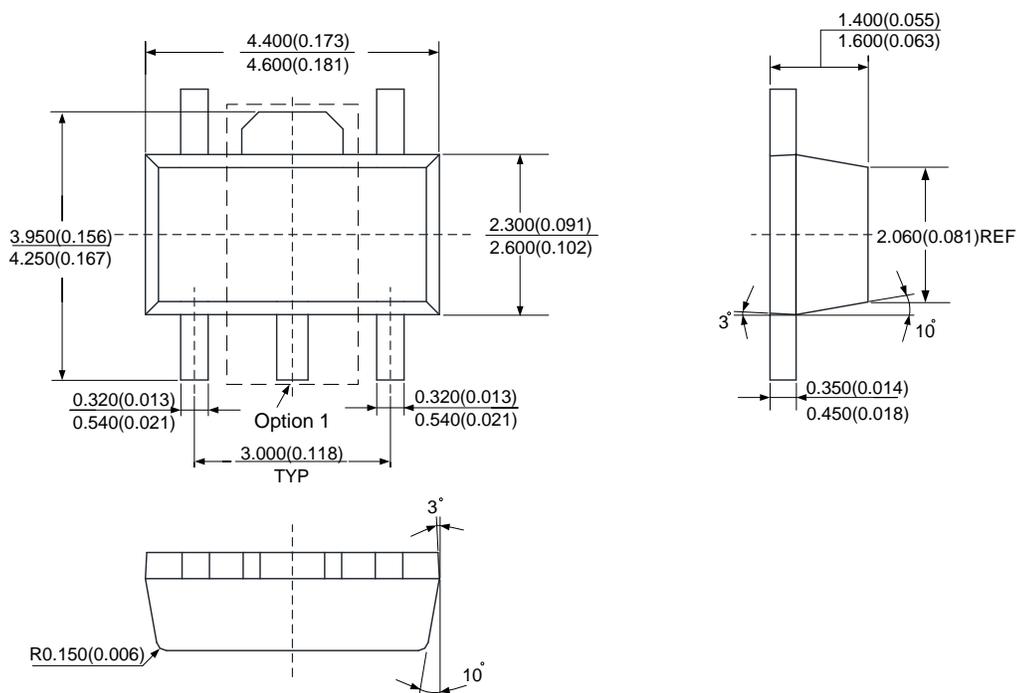
Dimensions	Value
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

Note: The suggested land pattern dimensions have been provided for reference only, as actual pad layouts may vary depending on application. These dimensions may be modified based on user equipment capability or fabrication criteria. A more robust pattern may be desired for wave soldering and is calculated by adding 0.2 mm to the 'Z' dimension. For further information, please reference document IPC-7351A, Naming Convention for Standard SMT Land Patterns, and for International grid details, please see document IEC, Publication 97.

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to creepage and clearance distances between device Terminals and PCB tracking.

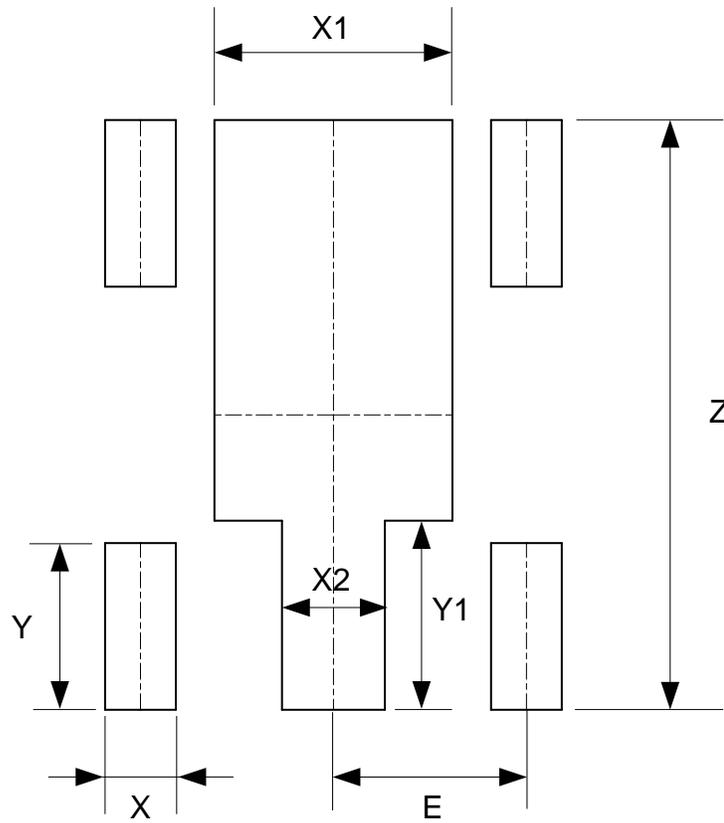
Package Outline Dimensions (All dimensions in mm.) (Previously identified as SOT-89-5 for this product)

SOT89-5



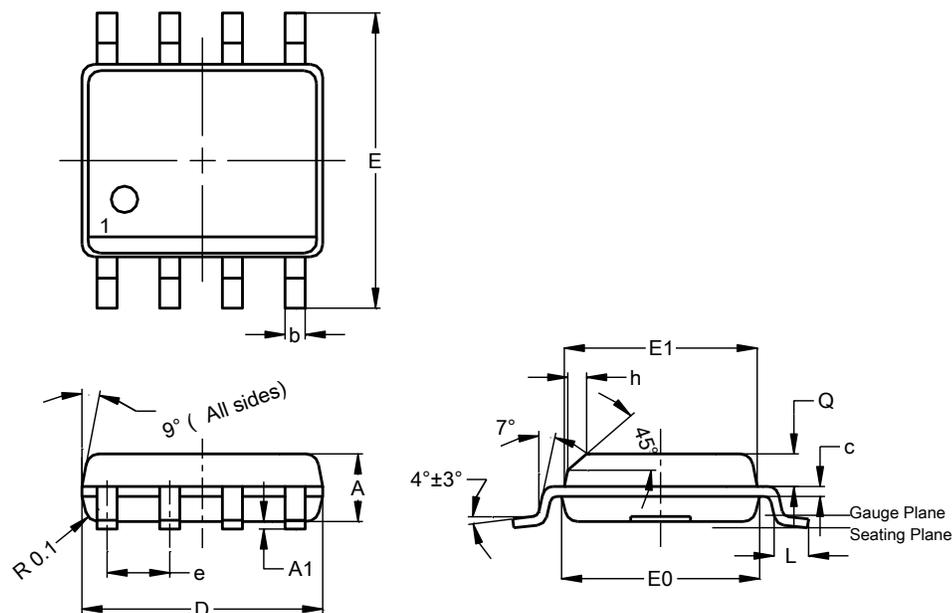
Suggested Pad Layout (Previously identified as SOT-89-5 for this product)

SOT89-5

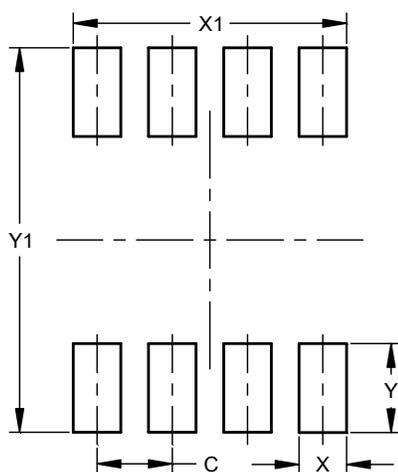


Dimensions	Z (mm)/(inch)	X (mm)/(inch)	X1 (mm)/(inch)	X2 (mm)/(inch)	Y (mm)/(inch)	Y1 (mm)/(inch)	E (mm)/(inch)
Value	4.600/0.181	0.550/0.022	1.850/0.073	0.800/0.031	1.300/0.051	1.475/0.058	1.500/0.059

Package Outline Dimensions (Previously identified as SOIC-8 for this product)

SO-8


SO-8			
Dim	Min	Max	Typ
A	1.40	1.50	1.45
A1	0.10	0.20	0.15
b	0.30	0.50	0.40
c	0.15	0.25	0.20
D	4.85	4.95	4.90
E	5.90	6.10	6.00
E1	3.80	3.90	3.85
E0	3.85	3.95	3.90
e	--	--	1.27
h	-	--	0.35
L	0.62	0.82	0.72
Q	0.60	0.70	0.65
All Dimensions in mm			

Suggested Pad Layout
SO-8


Dimensions	Value (in mm)
C	1.27
X	0.802
X1	4.612
Y	1.505
Y1	6.50

Note: The suggested land pattern dimensions have been provided for reference only, as actual pad layouts may vary depending on application. These dimensions may be modified based on user equipment capability or fabrication criteria. A more robust pattern may be desired for wave soldering and is calculated by adding 0.2 mm to the 'Z' dimension. For further information, please reference document IPC-7351A, Naming Convention for Standard SMT Land Patterns, and for International grid details, please see document IEC, Publication 97.

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to creepage and clearance distances between device Terminals and PCB tracking.