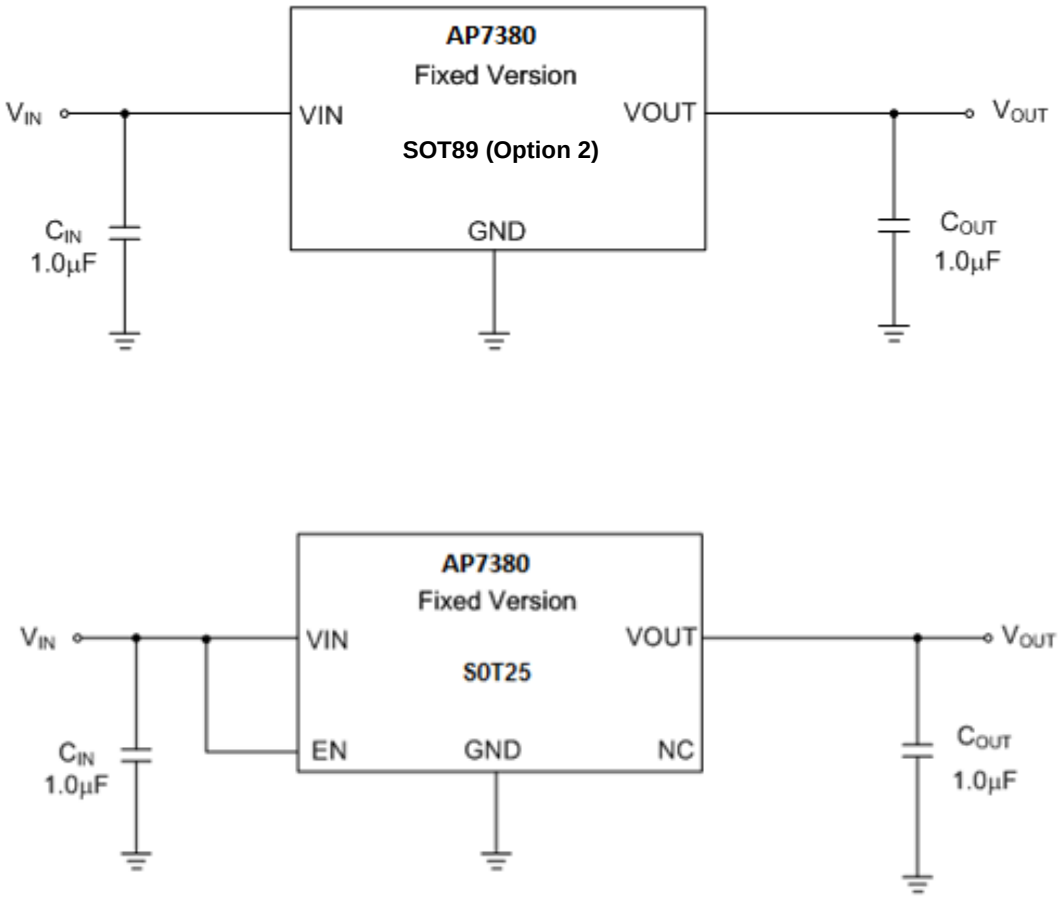
NEW PRODUCT

Typical Applications Circuit



Pin Descriptions

Pin Number			Pin Name	Function
SOT25 (W5)	SOT25 (WR)	SOT89 (Option 2)		
1	2	2	VIN	Input voltage
2	1	1	GND	Ground
3	—	—	EN	Enable input
4	4, 5	—	NC	No connected for fixed version
5	3	3	VOUT	Regulated output voltage

NEW PRODUCT

Absolute Maximum Ratings

Symbol	Parameter	Rating		Unit
V_{IN}	Supply Input Voltage	30		V
V_{EN}	Enable Input Voltage	30		V
I_{OUT}	Output Current	200		mA
T_{LEAD}	Lead Temperature (Soldering, 10sec)	+260		°C
T_J	Operating Junction Temperature	+150		°C
θ_{JA}	Thermal Resistance (Junction to Ambient)	SOT25 (W5)	193	°C/W
		SOT25 (WR)	166	
		SOT89 (Option 2)	118	
θ_{JC}	Thermal Resistance (Junction to Case)	SOT25 (W5)	68	°C/W
		SOT25 (WR)	26	
		SOT89 (Option 2)	20	
T_{STG}	Storage Temperature Range	-65 to +150		°C
—	ESD (Machine Model)	250		V
—	ESD (Human Body Model)	2500		V

Recommended Operating Conditions

Symbol	Parameter	Min	Max	Unit
V_{IN}	Supply Input Voltage	3.5	24	V
T_J	Operating Junction Temperature	-40	+125	°C

NEW PRODUCT

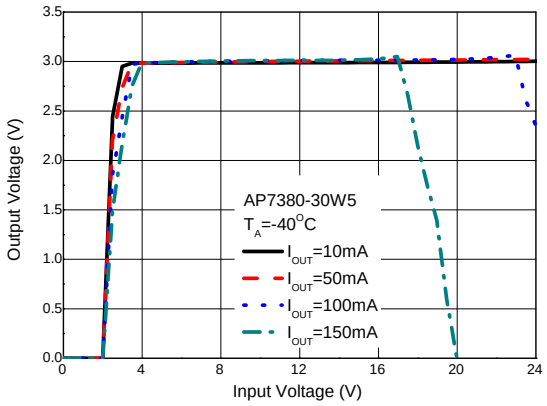
Electrical Characteristics (@ V_{IN} = V_{OUT} + 2V, C_{IN} = 1.0µF, C_{OUT} = 1.0µF, Typical T_J = +25°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions		Min	Typ	Max	Unit
V_{OUT}	Output Voltage	V_{IN} = V_{OUT} + 2V, I_{OUT} = 10mA Variation from Specified V_{OUT}		V_{OUT}x99%	V_{OUT}	V_{OUT}x101%	V
V_{IN}	Input Voltage	—		3.5	—	24	V
I_{LIMIT}	Current Limit	V_{IN} = V_{OUT} + 2V, V_{OUT1} = 98% x V_{OUT}		150	—	—	mA
$\Delta V_{OUT}/\Delta V_{IN}/V_{OUT}$	Line Regulation	V_{OUT} + 2V ≤ V_{IN} ≤ 24V, I_{OUT} = 10mA		—	0.05	—	%/V
$\Delta V_{OUT}/V_{OUT}$	Load Regulation	V_{IN} = V_{OUT} + 2V, 1mA ≤ I_{OUT} ≤ 150mA		—	0.5	—	%
V_{DROP}	Dropout Voltage	3.0V ≤ V_{OUT} < 5.0V	I_{OUT} = 50mA	—	360	580	mV
			I_{OUT} = 100mA	—	750	1000	mV
			I_{OUT} = 150mA	—	1050	1500	mV
		V_{OUT} = 5.0V	I_{OUT} = 50mA	—	250	500	mV
			I_{OUT} = 100mA	—	550	750	mV
			I_{OUT} = 150mA	—	750	1100	mV
I_{GND}	Ground Current	I_{OUT} = 0A		—	1.8	3.0	µA
		I_{OUT} = 150mA		—	1.8	3.0	
I_{STD}	Standby Current	V_{EN} in OFF Mode		—	0.01	—	µA
$\Delta V_{OUT}/(V_{OUT}x\Delta T)$	Output Voltage Temperature Coefficient	I_{OUT} = 100µA, -40°C ≤ T_J ≤ +125°C		—	±100	—	ppm/°C
I_{EN}	EN Pin Current	—		—	1	—	µA
—	EN “High” Voltage	EN Input Voltage “High”		2.0	—	—	V
—	EN “Low” Voltage	EN Input Voltage “Low”		—	—	0.4	V
T_{OTSD}	Thermal Shutdown Temperature	—		—	+160	—	°C
T_{HYOTSD}	Thermal Shutdown Hysteresis	—		—	+20	—	°C

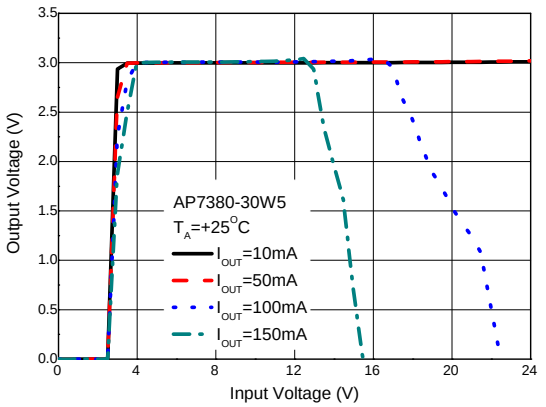
NEW PRODUCT

Performance Characteristics

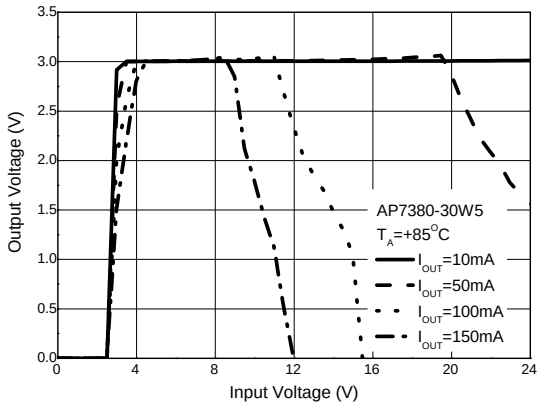
Output Voltage vs. Input Voltage @-40°C



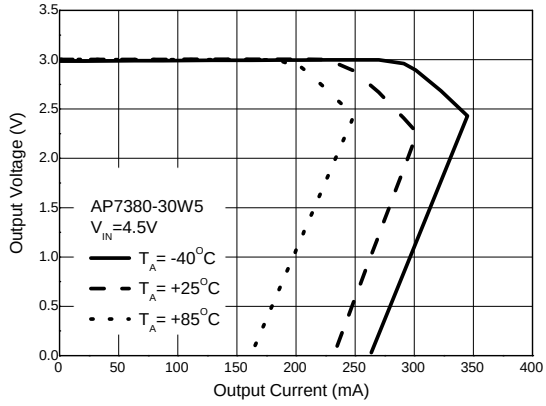
Output Voltage vs. Input Voltage @+25°C



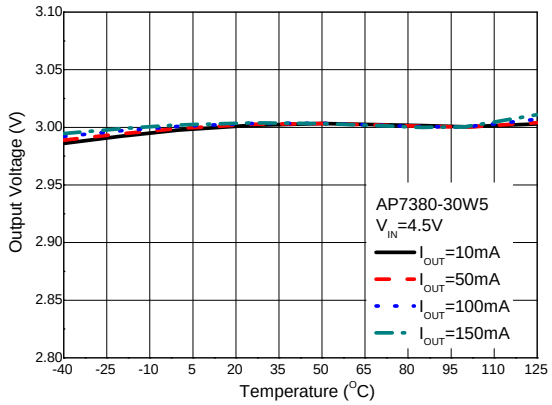
Output Voltage vs. Input Voltage @+85°C



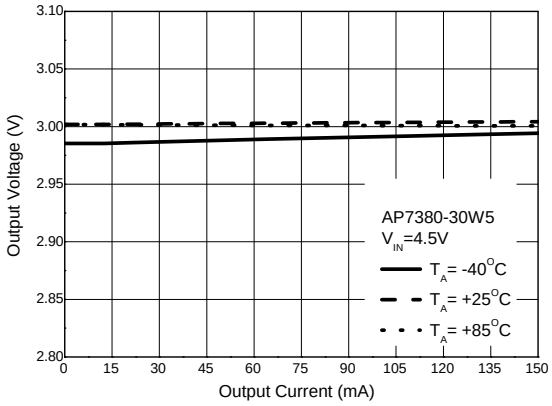
Output Voltage vs. Output Current



Output Voltage vs. Temperature



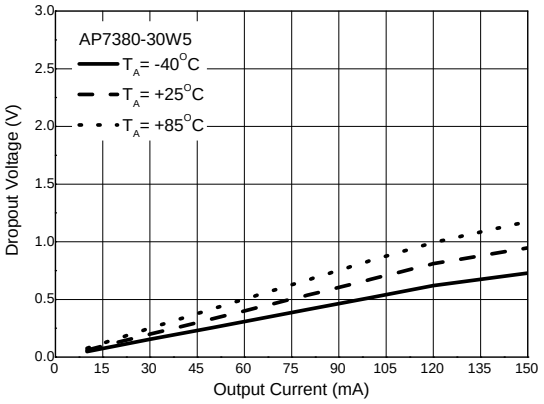
Output Voltage vs. Output Current



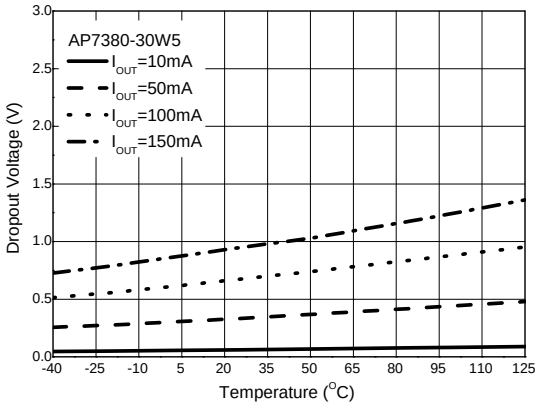
NEW PRODUCT

Performance Characteristics (Cont.)

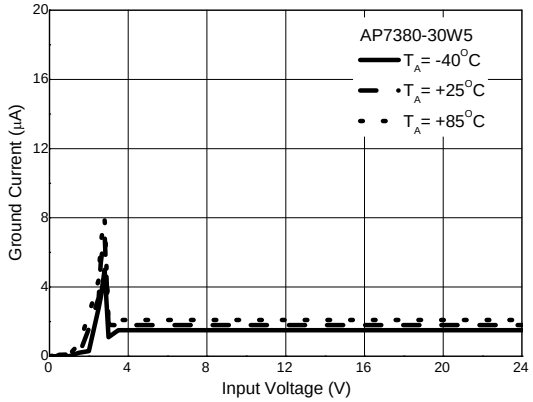
Dropout Voltage vs. Output Current



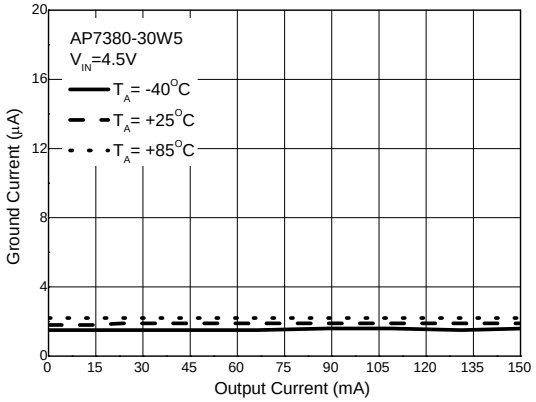
Dropout Voltage vs. Temperature



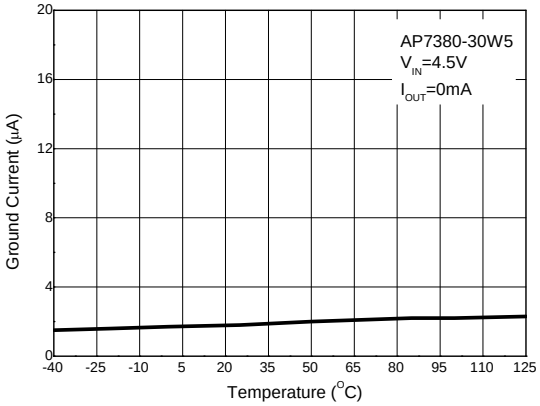
I_{GND} vs. Input Voltage



I_{GND} vs. Output Current

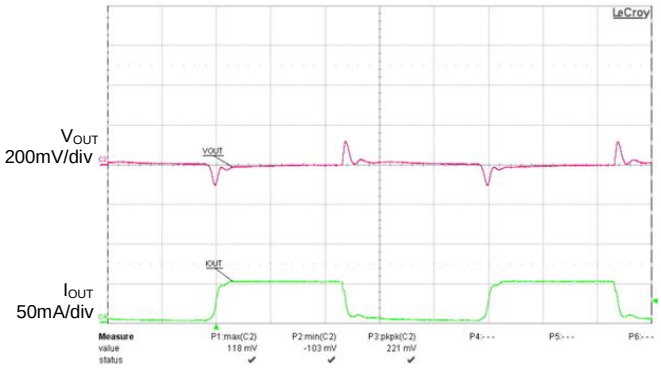


I_{GND} vs Temperature



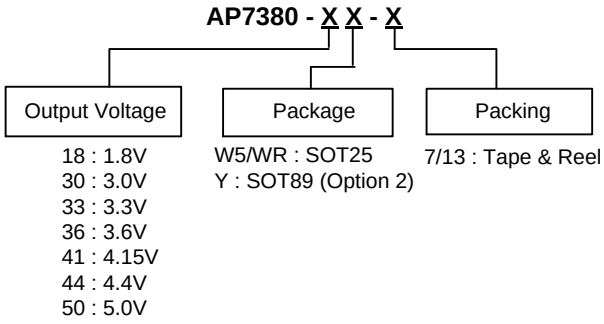
Load Transient

C_{IN}=1µF, C_{OUT}=1µF, V_{IN}=V_{OUT}+1.5V to 24V, I_{OUT}=0 to 50mA



NEW PRODUCT

Ordering Information



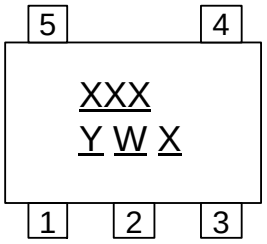
Part Number	Package Code	Package	7"/13" Tape and Reel	
			Quantity	Part Number Suffix
AP7380-18W5-7	W5	SOT25	3000/Tape & Reel	-7
AP7380-30W5-7	W5	SOT25	3000/Tape & Reel	-7
AP7380-33W5-7	W5	SOT25	3000/Tape & Reel	-7
AP7380-36W5-7	W5	SOT25	3000/Tape & Reel	-7
AP7380-41W5-7	W5	SOT25	3000/Tape & Reel	-7
AP7380-44W5-7	W5	SOT25	3000/Tape & Reel	-7
AP7380-50W5-7	W5	SOT25	3000/Tape & Reel	-7
AP7380-18WR-7	WR	SOT25	3000/Tape & Reel	-7
AP7380-30WR-7	WR	SOT25	3000/Tape & Reel	-7
AP7380-33WR-7	WR	SOT25	3000/Tape & Reel	-7
AP7380-36WR-7	WR	SOT25	3000/Tape & Reel	-7
AP7380-41WR-7	WR	SOT25	3000/Tape & Reel	-7
AP7380-44WR-7	WR	SOT25	3000/Tape & Reel	-7
AP7380-50WR-7	WR	SOT25	3000/Tape & Reel	-7
AP7380-18Y-13	Y	SOT89 (Option 2)	2500/Tape & Reel	-13
AP7380-30Y-13	Y	SOT89 (Option 2)	2500/Tape & Reel	-13
AP7380-33Y-13	Y	SOT89 (Option 2)	2500/Tape & Reel	-13
AP7380-36Y-13	Y	SOT89 (Option 2)	2500/Tape & Reel	-13
AP7380-41Y-13	Y	SOT89 (Option 2)	2500/Tape & Reel	-13
AP7380-44Y-13	Y	SOT89 (Option 2)	2500/Tape & Reel	-13
AP7380-50Y-13	Y	SOT89 (Option 2)	2500/Tape & Reel	-13

NEW PRODUCT

Marking Information

(1) SOT25

(Top View)

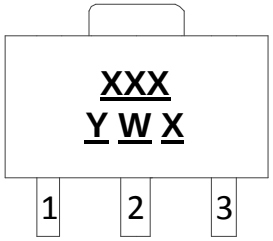


XXX : Identification Code
Y : Year 0 to 9
W : Week : A to Z : 1 to 26 week;
a to z : 27 to 52 week; z represents 52 and 53 week
X : Internal Code

Part Number	Package	Identification Code
AP7380-18W5-7	SOT25	D8M
AP7380-30W5-7	SOT25	D8E
AP7380-33W5-7	SOT25	D8A
AP7380-36W5-7	SOT25	D8P
AP7380-41W5-7	SOT25	D8F
AP7380-44W5-7	SOT25	D8G
AP7380-50W5-7	SOT25	D8B
AP7380-18WR-7	SOT25	D8N
AP7380-30WR-7	SOT25	D8H
AP7380-33WR-7	SOT25	D8C
AP7380-36WR-7	SOT25	D8R
AP7380-41WR-7	SOT25	D8J
AP7380-44WR-7	SOT25	D8K
AP7380-50WR-7	SOT25	D8D

(2) SOT89 (Option 2)

(Top View)



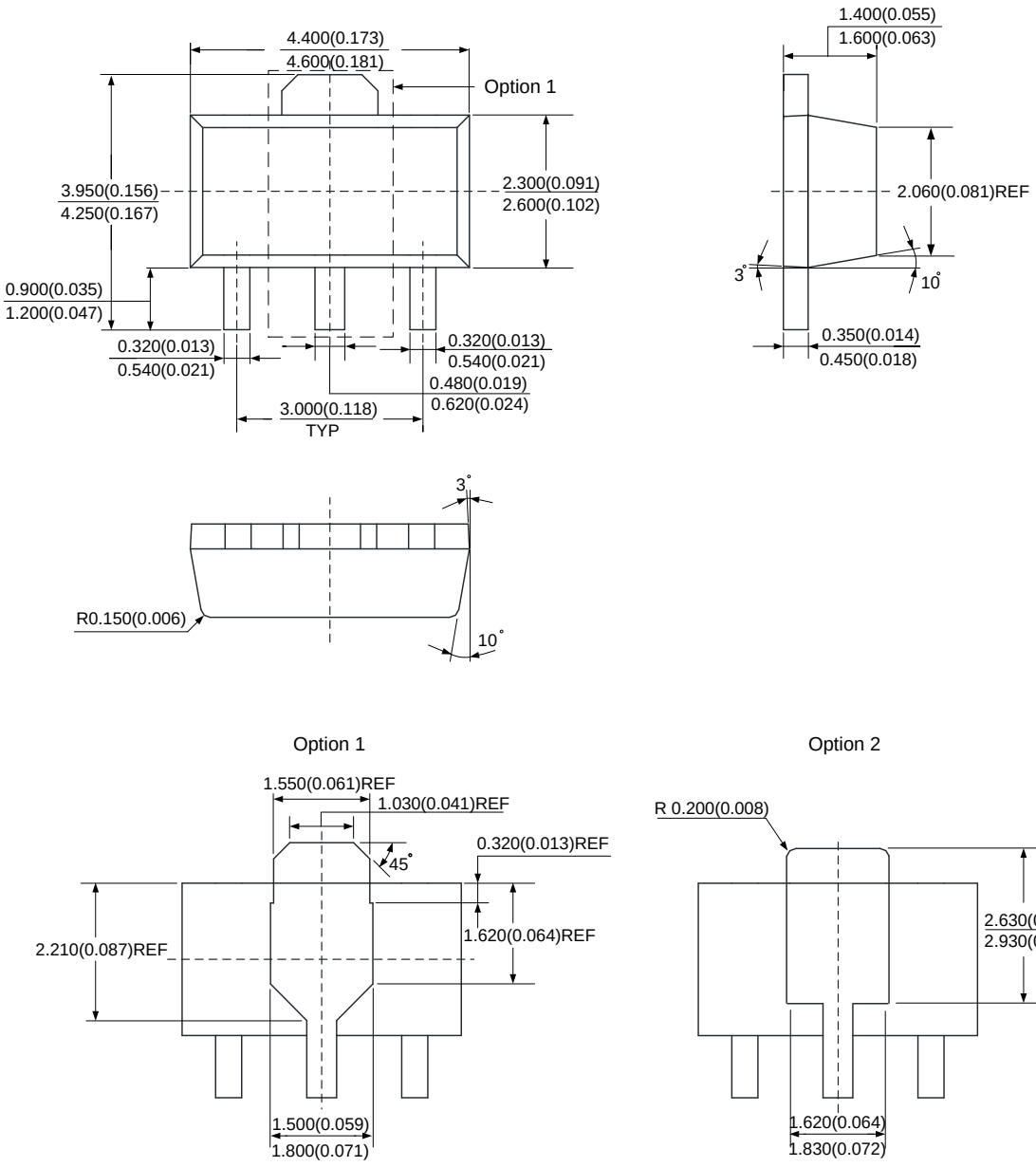
XXX : Identification code
Y : Year : 0~9
W : Week : A~Z : 1~26 week;
a~z : 27~52 week;
z represents 52 and 53 week
X : Internal code

Part Number	Package	Identification Code
AP7380-18Y-13	SOT89 (Option 2)	D8M
AP7380-30Y-13	SOT89 (Option 2)	D8E
AP7380-33Y-13	SOT89 (Option 2)	D8A
AP7380-36Y-13	SOT89 (Option 2)	D8P
AP7380-41Y-13	SOT89 (Option 2)	D8F
AP7380-44Y-13	SOT89 (Option 2)	D8G
AP7380-50Y-13	SOT89 (Option 2)	D8B

NEW PRODUCT

Package Outline Dimensions (All dimensions in mm.)

(1) Package Type: SOT89

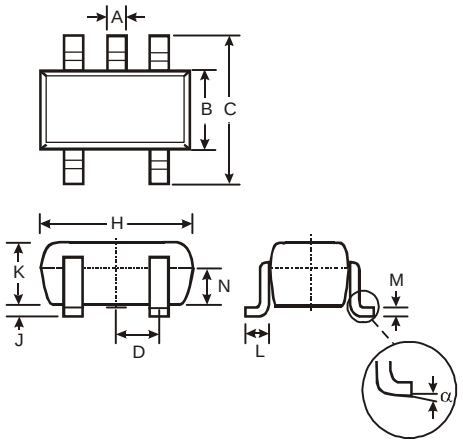


NEW PRODUCT

Package Outline Dimensions (Cont.)

Please see http://www.diodes.com/package-outlines.html for the latest version.

(2) Package Type: SOT25

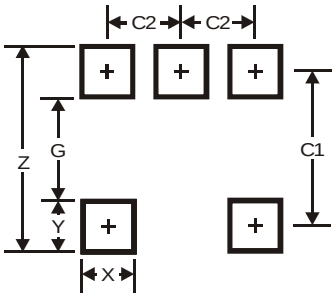


SOT25			
Dim	**Min**	**Max**	**Typ**
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	-	-	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
N	0.70	0.80	0.75
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

(1) Package Type: SOT25

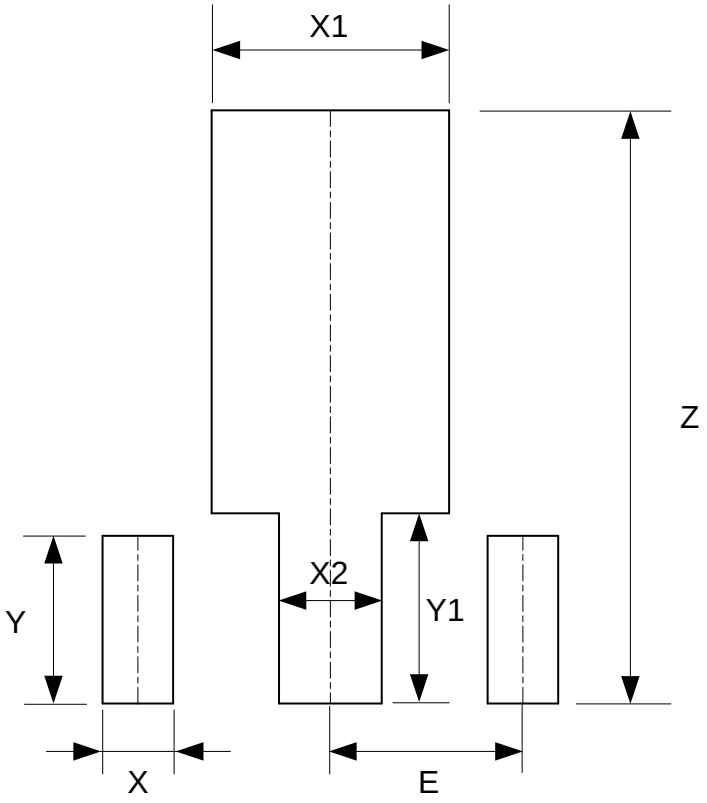


Dimensions	Value
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

NEW PRODUCT

Suggested Pad Layout (Cont.)

(2) Package Type: SOT89



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

NEW PRODUCT

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