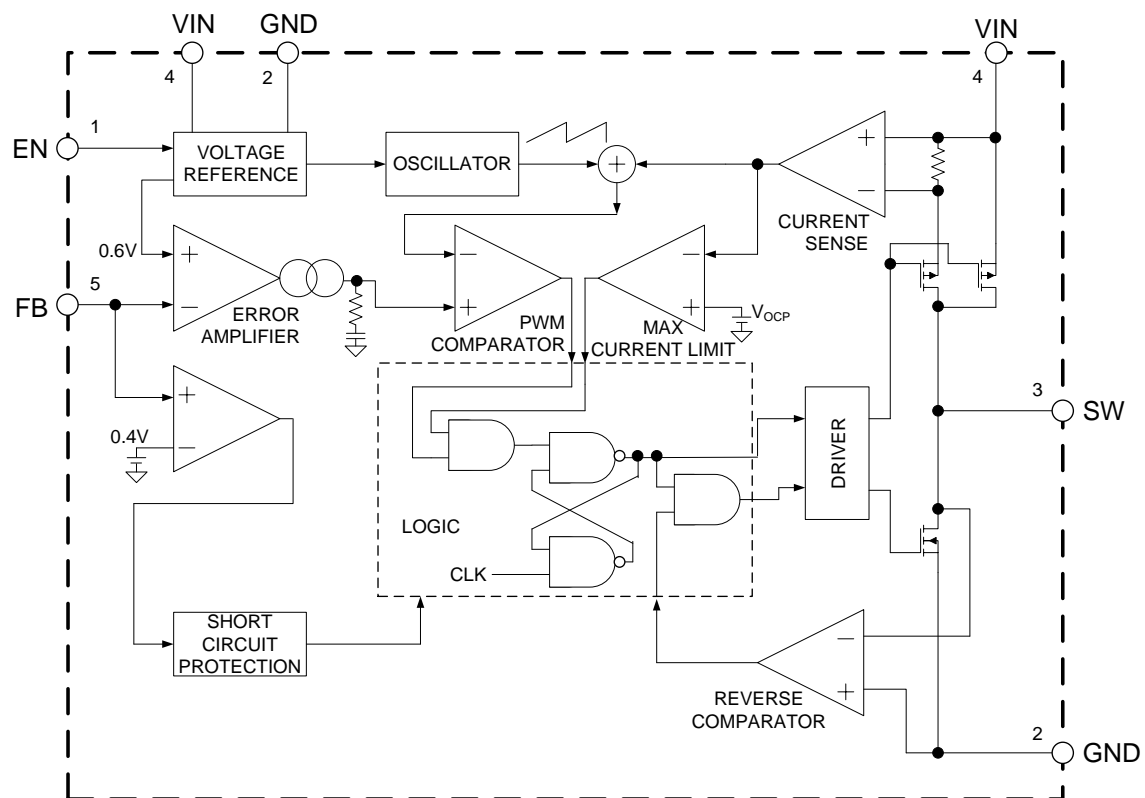


## Pin Descriptions

Pin Number	Pin Name	Function
1	EN	Control input pin. Forcing this pin above 1.5V enables the IC. Forcing this pin below 0.4V shuts down the IC. When the IC is in shutdown mode, all functions are disabled to decrease the supply current below 1μA
2	GND	Ground pin
3	SW	Power switch output pin. Inductor connection to drain of the internal PFET and NFET switches
4	VIN	Supply input pin. Bypass to GND with a 4.7μF or greater ceramic capacitor
5	FB	This is the feedback pin of the device. Connect this pin directly to the output if the fixed output voltage version is used. For the adjustable version, an external resistor divider is connected to this pin

## Functional Block Diagram



## Absolute Maximum Ratings (Note 4)

Symbol	Parameter	Rating	Unit
$V_{IN}$	Input Voltage	-0.3 to 6.0	V
$V_{FB}$	Feedback Voltage	-0.3 to $V_{IN} + 0.3$	V
$V_{EN}$	EN Pin Voltage	-0.3 to $V_{IN} + 0.3$	V
$V_{SW}$	SW Pin Voltage	-0.3 to $V_{IN} + 0.3$ (Note 5)	V
$\theta_{JA}$	Thermal Resistance	265	°C/W
$T_J$	Operating Junction Temperature	+150	°C
$T_{STG}$	Storage Temperature	-65 to +150	°C
$T_{LEAD}$	Lead Temperature (Soldering, 10sec)	+260	°C
—	ESD(Machine Model)	200	V
—	ESD(Human Body Model)	2000	V

- Notes:
- 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.
  - DC voltage rating, for short period of spike voltage, the minimum voltage rating is -1V, in 20nS.

## Recommended Operating Conditions

Symbol	Parameter	Min	Max	Unit
$V_{IN}$	Input Voltage	2.5	5.5	V
$T_A$	Operating Ambient Temperature	-40	+85	°C

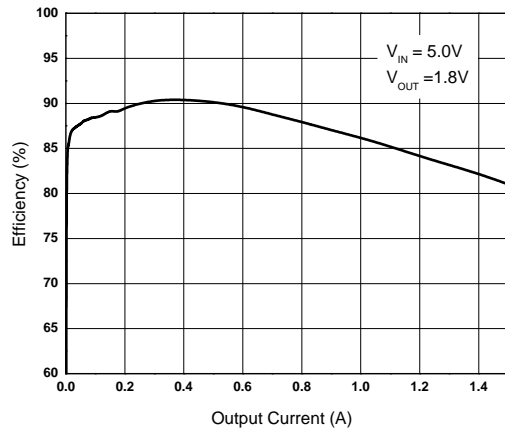
# Electrical Characteristics

( $V_{IN} = 5V$ ,  $T_A = +25^{\circ}C$ , unless otherwise specified.)

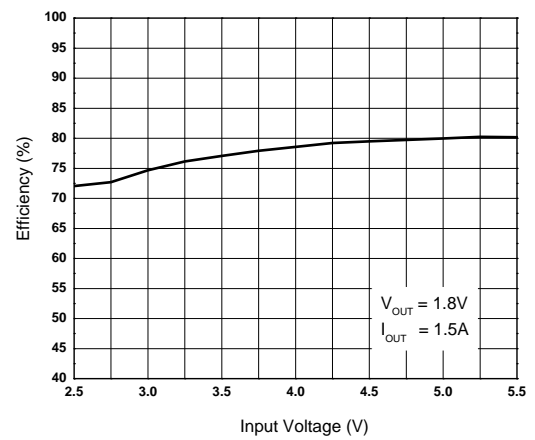
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_{IN}$	Input Voltage	–	2.5	–	5.5	V
$I_Q$	Quiescent Current	$V_{FB} = 0.65V$	–	62	100	$\mu A$
$I_{STBY}$	Shutdown Supply Current	$V_{EN} = GND$	–	0.1	1	$\mu A$
$V_{REF}$	Reference Voltage	For Adjustable Output Voltage	0.588	0.6	0.612	V
$I_{FB\_H}$	Feedback Bias Current	$V_{FB} = 1V$	-0.1	–	0.1	$\mu A$
$I_{FB\_L}$		$V_{FB} = 0V$	-0.1	–	0.1	
$R_{DS(ON)\_P}$	PMOSFET $R_{ON}$	$I_{SW} = 200mA$	–	0.2	–	$\Omega$
$R_{DS(ON)\_N}$	NMOSFET $R_{ON}$	$I_{SW} = -200mA$	–	0.15	–	$\Omega$
$I_{LIM}$	Switch Current Limit	$V_{FB} = 0.55V$	1.8	2.3	–	A
$V_H$	EN Pin Threshold	–	1.5	–	–	V
$V_L$		–	–	–	0.4	
$V_{UVLO}$	UVLO Threshold	$V_{IN}$ Rising	–	2.3	–	V
$V_{HYS}$	UVLO Hysteresis	–	–	0.2	–	
$f_{OSC}$	Oscillator Frequency	–	1.12	1.40	1.68	MHz
$D_{MAX}$	Max. Duty Cycle	–	100	–	–	%
$D_{MIN}$	Min. Duty Cycle	–	–	–	0	
$I_{SW\_H}$	SW Leakage Current	$V_{SW} = 0V$	–	0.1	–	$\mu A$
$I_{SW\_L}$		$V_{SW} = 5V$	–	0.1	–	
$t_{SS}$	Soft-start Time	–	–	1	–	ms
$T_{OTSD}$	Thermal Shutdown	–	–	+160	–	$^{\circ}C$
$T_{HYS}$	Thermal Shutdown Hysteresis	–	–	+20	–	$^{\circ}C$

**Performance Characteristics** ( $V_{IN} = 5V$ ,  $T_A = +25^\circ C$ , unless otherwise specified.)

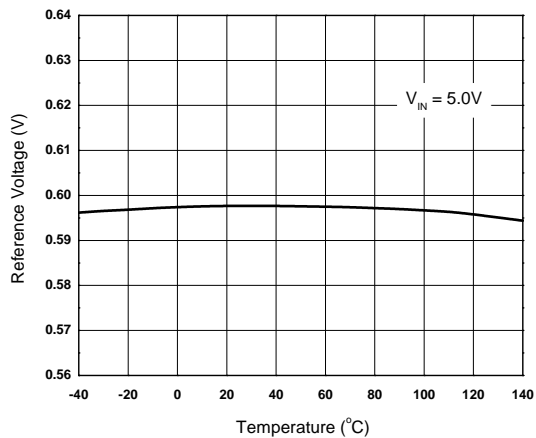
**Efficiency vs. Output Current**



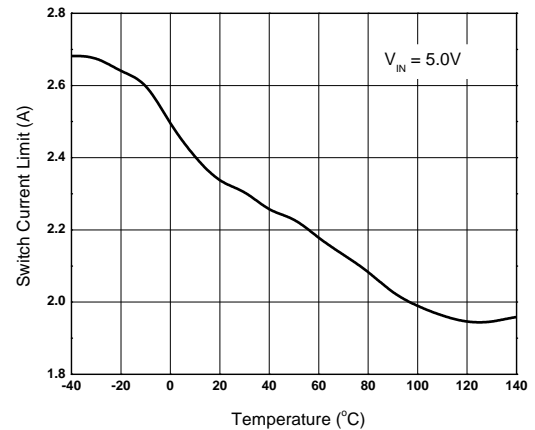
**Efficiency vs. Input Voltage**



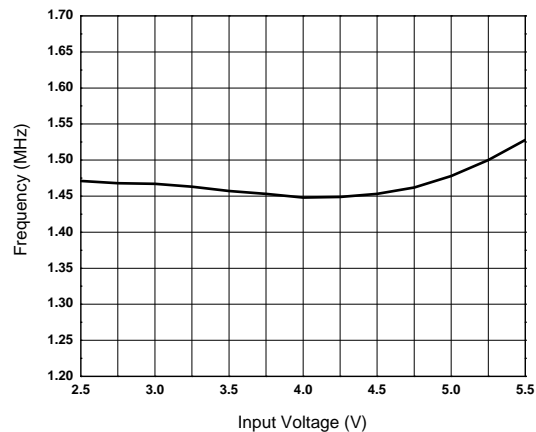
**Reference Voltage vs. Temperature**



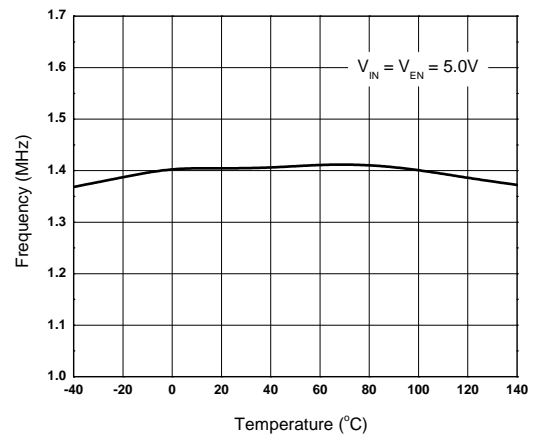
**Switch Current Limit vs. Temperature**



**Frequency vs. Input Voltage**

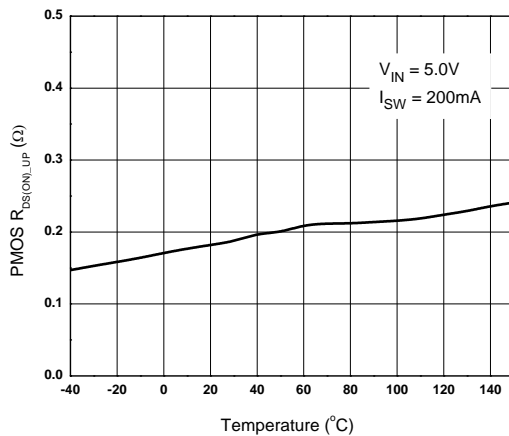


**Frequency vs. Temperature**

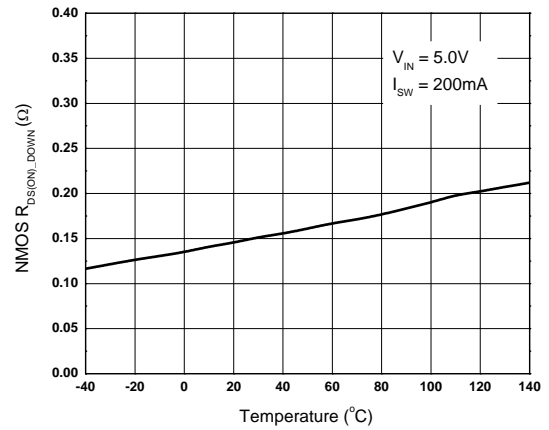


**Performance Characteristics** (Cont.  $V_{IN} = 5V$ ,  $T_A = +25^\circ C$ , unless otherwise specified.)

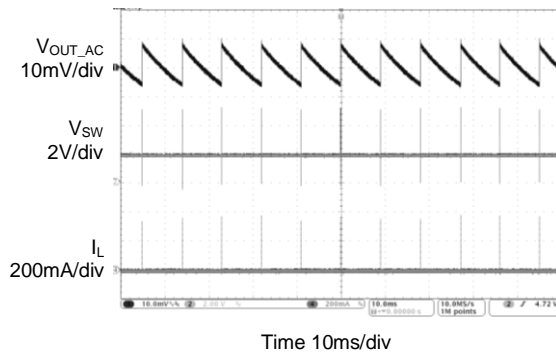
**$R_{DS(ON\_UP)}$  vs. Temperature**



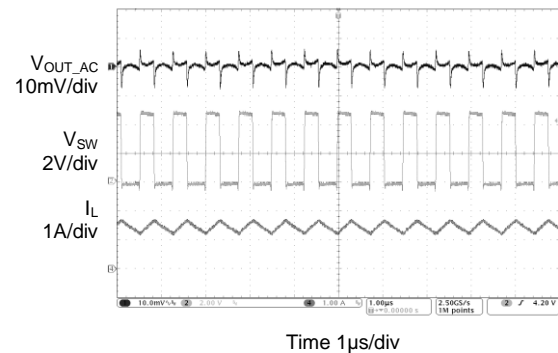
**$R_{DS(ON\_DOWN)}$  vs. Temperature**



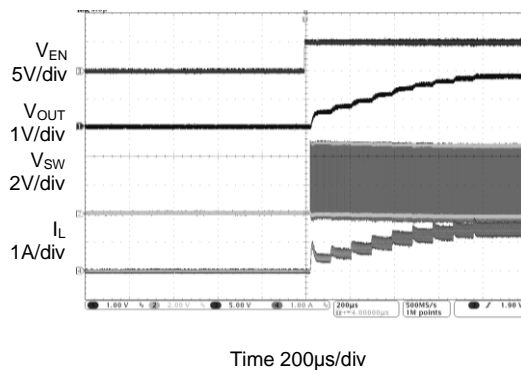
**Output Ripple ( $I_{OUT} = 0A$ )**



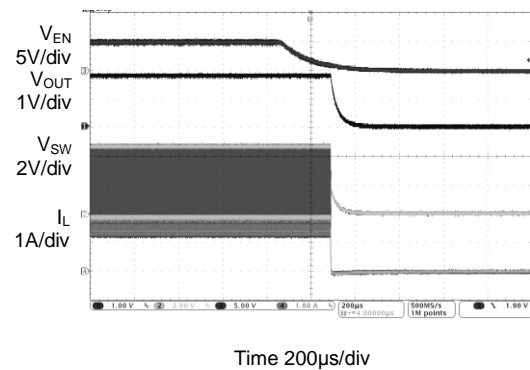
**Output Ripple ( $I_{OUT} = 1.5A$ )**



**Enable Turn on ( $I_{OUT} = 1.5A$ )**

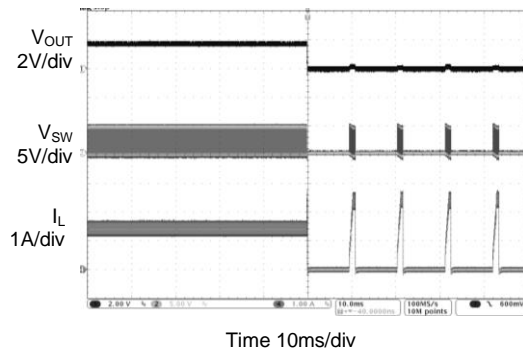


**Enable Turn off ( $I_{OUT} = 1.5A$ )**

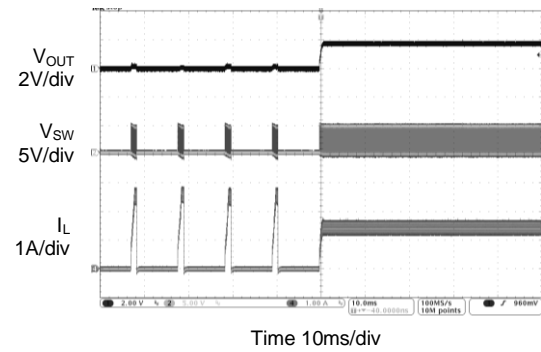


**Performance Characteristics** (Cont.  $V_{IN} = 5V$ ,  $T_A = +25^\circ C$ , unless otherwise specified.)

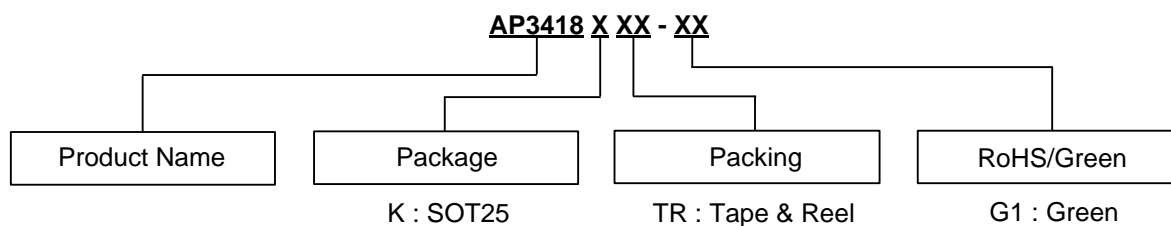
**Short Circuit Protection**  
( $I_{OUT} = 1.5A$ )



**Short Circuit Protection Recovery**  
( $I_{OUT} = 1.5A$ )



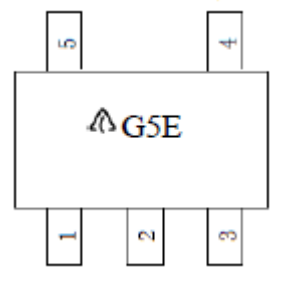
## Ordering Information




Package	Temperature Range	Part Number	Marking ID	Packing
SOT25	-40 to +85 °C	AP3418KTR-G1	G5E	3000/Tape & Reel

## Marking Information

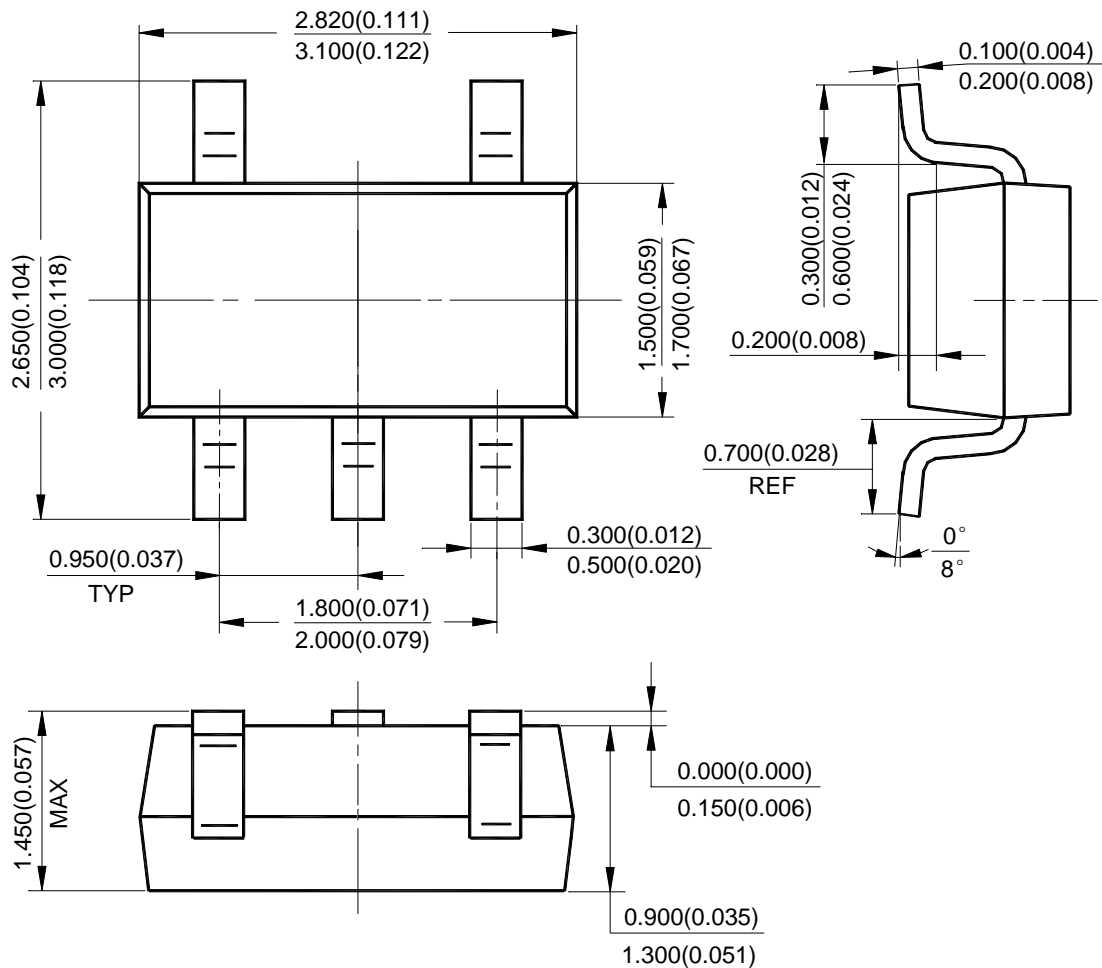
(Top View)



 : Logo  
G5E: Marking ID

**Package Outline Dimensions** (All dimensions in mm(inch).)

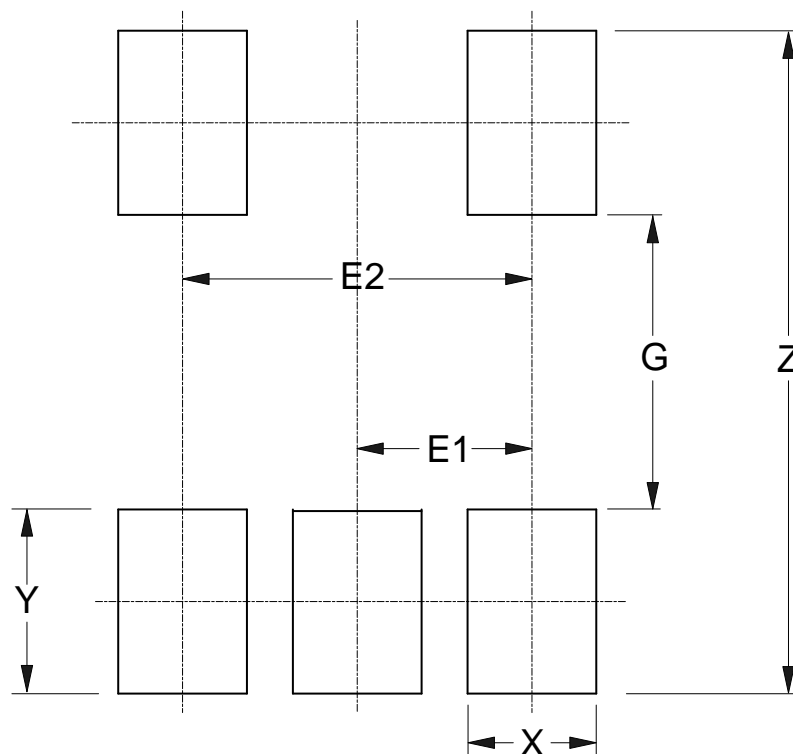
(1) Package Type: SOT25





## Suggested Pad Layout

(1) Package Type: SOT25



Dimensions	Z (mm)/(inch)	G (mm)/(inch)	X (mm)/(inch)	Y (mm)/(inch)	E1 (mm)/(inch)	E2 (mm)/(inch)
Value	3.600/0.142	1.600/0.063	0.700/0.028	1.000/0.039	0.950/0.037	1.900/0.075

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