

# Automotive Surface Mount Type Switching Regulator SPF8033J

## Features

- Output voltage:  $3.3V \pm 2\%$   
( $V_{IN}=14V, I_o=0.5A, T_j=25^\circ C$ )
- Possible to apply output current 1.5A ( $T_a=25^\circ C$ )  
with compact HSOP16 package
- High efficiency 82% ( $V_{in}=14V, I_o=0.5A$ )
- External components: 4 parts
- Built-in reference oscillator (125kHz)
- ON/OFF function of low current consumption at OFF

## Absolute Maximum Ratings

Characteristic	Symbol	Ratings	Units	Remarks
Input voltage	$V_{IN}$	35	V	
		40	V	Within 300ms
Power dissipation *2	$P_D$	1.6	W	Heat sink land pattern : $1cm^2$
Junction temperature	$T_j$	125	$^\circ C$	
Storage temperature	$T_{stg}$	-40~125	$^\circ C$	

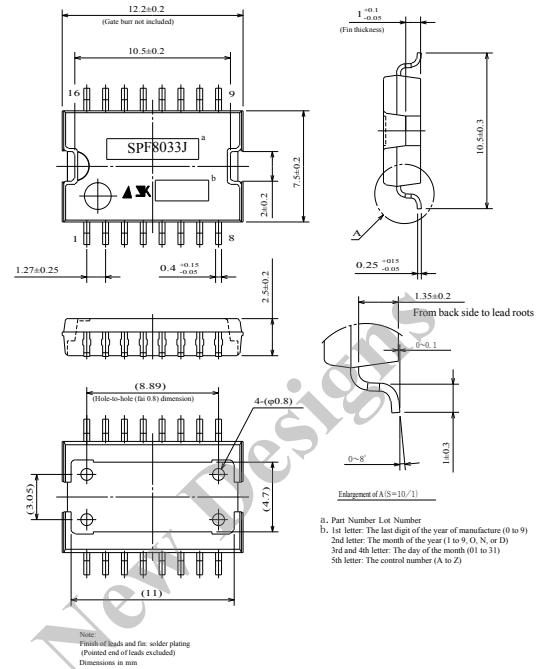
## Recommended Operating Conditions

Characteristic	Symbol	Ratings	Units	Remarks
Input voltage range	$V_{IN}$	5.3~35	V	$I_o=0\sim 1A$
		6.3~35	V	$I_o=0\sim 1.5A$
Output current range	$I_o$	0~1.5	A	$V_{IN} \geq 8V$
Operating junction Temperature range	$T_{jop}$	-30~125	$^\circ C$	
Operating temperature range	$T_{op}$	-30~125	$^\circ C$	

## Electrical Characteristics ( $T_j=25^\circ C$ )

Characteristic	Symbol	Limits			Units	Test Conditions
		Min.	Typ.	Max.		
Output voltage	$V_o$	3.234	3.30	3.366	V	$V_{IN}=14V, I_o=0.5A$
Temperature coefficient *5	TC		$\pm 0.5$		mV/ $^\circ C$	
Efficiency *6	$\eta$		77		%	$V_{IN}=14V, I_o=0.5A$
Operating frequency	$f_o$	70	125	180	kHz	$V_{IN}=14V, I_o=0.5A$
Line regulation	$\Delta V_{Line}$		25	80	mV	$V_{IN}=8\sim 30V, I_o=0.5A$
Load regulation	$\Delta V_{Load}$		10	30	mV	$V_{IN}=14V, I_o=0.2\sim 0.8A$
Quiescent current	$I_q$		7	12	mA	$V_{IN}=14V, I_o=0A$
Standby current	$I_q(off)$			200	$\mu A$	$V_{IN}=14V, V_{ON/OFF}=0.3V$
Current Limit	$I_S$	1.6			A	$V_{IN}=14V$
		0.5			V	$V_{SSL}=0V$
ON/OFF terminal	Shutdown voltage	$V_{SSL}$			V	
	Outflow current	$I_{SSL}$		100	$\mu A$	$V_{SSL}=0V$

## Package



## Circuit Block Diagram

