WSTD6050AN-F Product Description

High-side driver with current sense analog feedback for 24V automotive applications
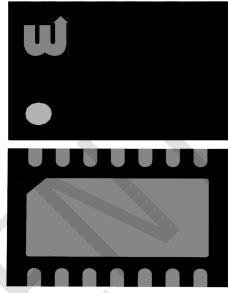
WINSEMI

WSTD6050AN-F

Smart High-Side Power Switch Dual Channel，38mΩ，DFN9×6-14L ， *AEC-Q100 qualified*

Application

◆ Suitable for resistive, inductive and capacitive loads

◆ Replaces electromechanical relays, fuses and discrete circuits

◆ Most suitable for loads with high inrush current, such as lamps

◆ Suitable for 12 V and 24 V trucks + trailer and transportation systems

Package	DFN9×6-14L
Marking	WSTD6050ANF

AEC Qualified

✓ RoHS

ISO 26262 ready

HAL Halogen-free

Basic Features

◆ Dual channel device

◆ Very low stand-by current

◆ 3.3 V and 5 V compatible logic inputs

◆ Optimized electromagnetic compatibility

◆ Very low electromagnetic susceptibility

◆ Can be used for PWM frequencies up to 2 kHz

Diagnostic Functions

◆ Proportional load current sense

◆ High current sense precision for wide range currents

◆ Off-state open load detection

◆ OUT short to VS detection

◆ Overload and short to ground latch-off

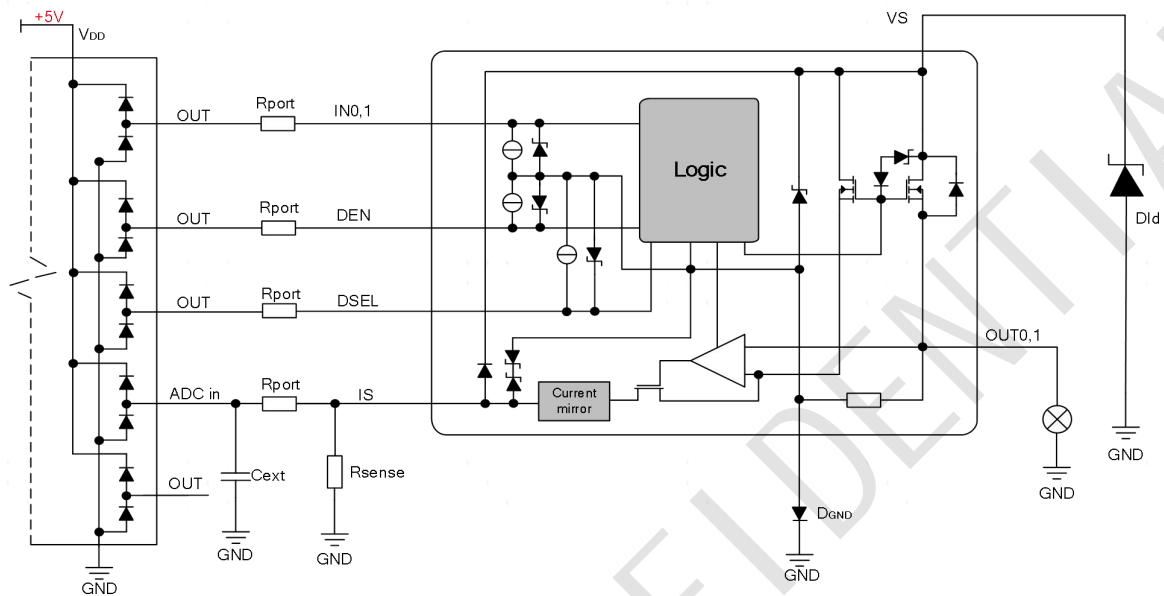◆ Thermal shutdown latch-off

◆ Very low current sense leakage

Protection Functions

◆ Undervoltage shutdown

◆ Overvoltage clamp

◆ Load current limitation

◆ Self limiting of fast thermal transients

◆ Protection against loss of ground and loss of VS

◆ Thermal shutdown

Product Summary

Parameter	Symbol	Value
Max. transient supply voltage	V_S	60V
Operating voltage range	V_{NOM}	8-36V
On-state resistance (per channel，T_j = 25℃)	R_{ON}	38mΩ
Nominal load current (one channel active，T_j = 25℃)	$I_{L(NOM)1}$	7A
Nominal load current (All channels active，T_j = 25℃)	$I_{L(NOM)2}$	5A
Typical current sense ratio (I_{OUT}=2A)	K	1640
Current limitation	I_{LIMH}	25A
Supply current in sleep	I_{SLEEP}	3uA

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Typical Application Circuit

Note1：For D_{GND}, the diode with lower V_F is advisable.

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