



SANYO Semiconductors

DATA SHEET

TN6R04 — ExPD (Excellent Power Device) Switching Regulator IC for RCC Method Power Supplies Applications

Features

- Original control IC for Delay RCC-type.
- High voltage Power MOSFET with current sense.
- Overload protection.
- Only few external components required.
- Small Full-Isolation package : TO-220FI5H.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		650	V
Drain Current (DC)	I_D		5.5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	16.5	A
IC Input Voltage	V_{IN}		30	V
Allowable Power Dissipation	P_D		2.0	W
		$T_c = 25^\circ C$	35	W
Operating Temperature	T_{opr}		-25 to +125	°C
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=1mA, VDELAY=0	650			V
Zero-Gate Voltage Drain Current	IDSS	VDS=650V, VDELAY=0			1.0	mA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	3.0		4.0	V
Static Drain-to-Source On-State Resistance	RDS(on)	ID=2.8A, VDELAY=15V		1.2	1.6	Ω
Input Capacitance	Ciss	VDS=20V, f=1MHz		1450		pF
Output Capacitance	Coss	VDS=20V, f=1MHz		250		pF
[IC]						
Restriction of Drive Voltage	VIN(OV)	IIN=1mA, VFB=0	30			V
Detection Voltage of Feedback and Overload Amplifier	VFB	VDELAY, VIN=10V, IIN=50mA		2.0		V

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TN6R04

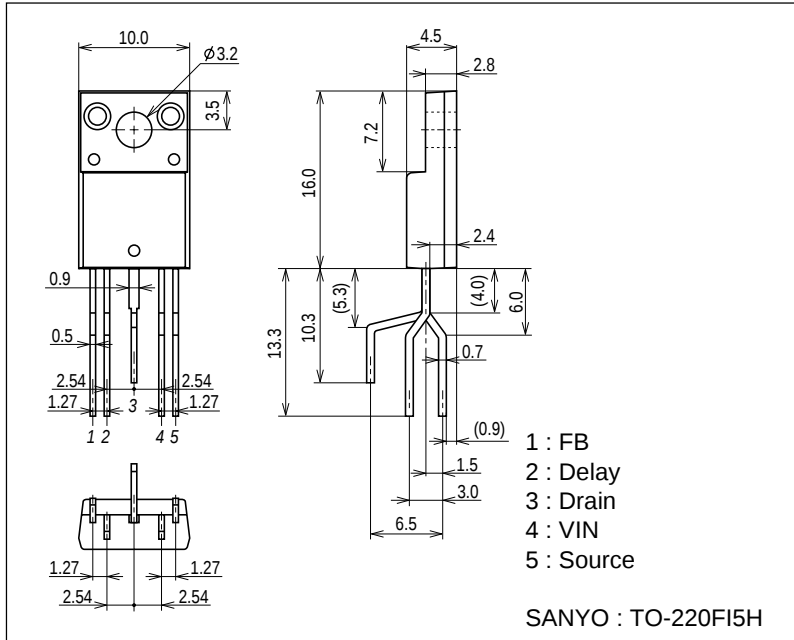
Recommend Operating Conditions at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
IC Input Voltage	V _{IN}		±10 to ±25	V
Operating Frequency	F _{OSC}		20 to 200	kHz

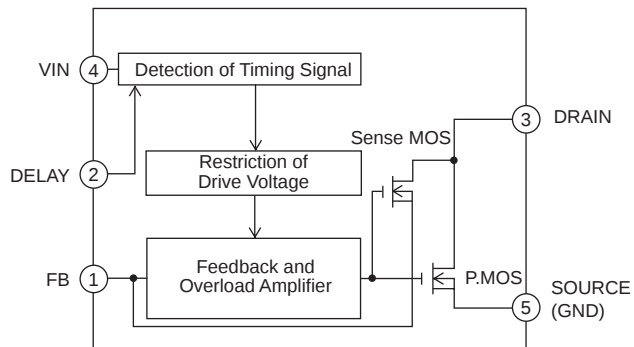
Package Dimensions

unit : mm

2226



Block Diagram

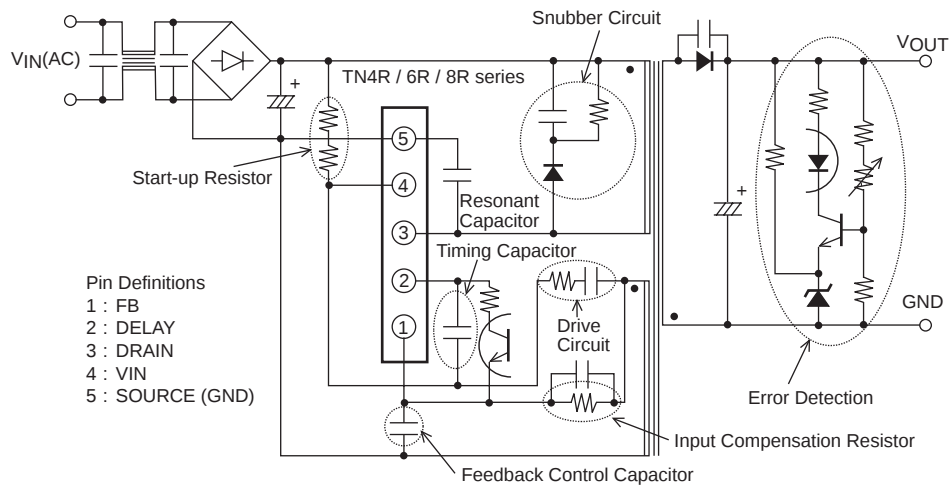


Pin Definitions and Functions

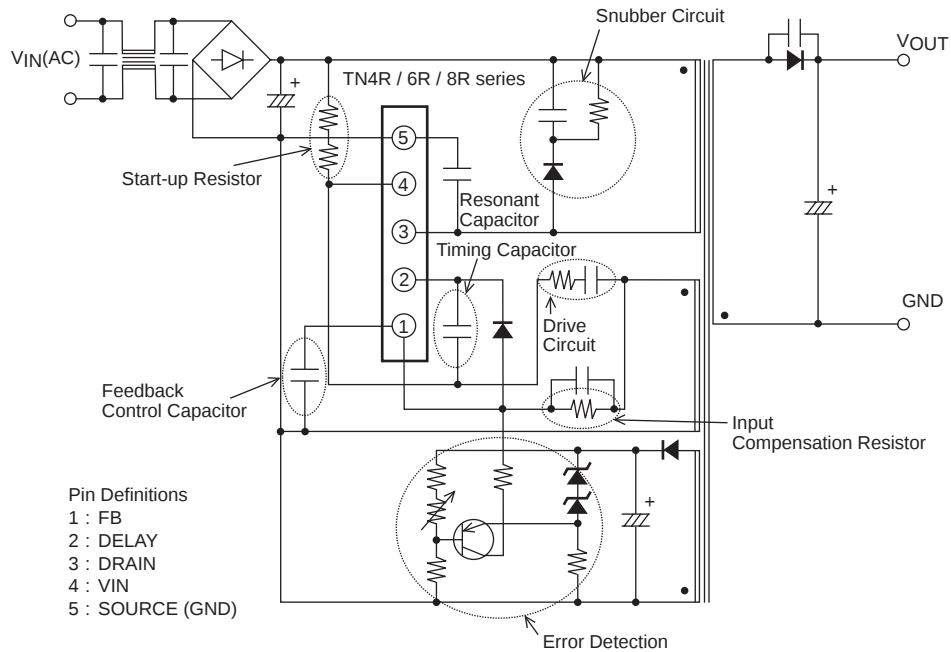
Pin No.	Symbol	Function
1	FB	Input for feedback voltage and current sense
2	DELAY	Input for timing signal
3	DRAIN	Power MOSFET Drain
4	VIN	Input for Start-up voltage and drive voltage
5	SOURCE(GND)	Power MOSFET Source (Ground)

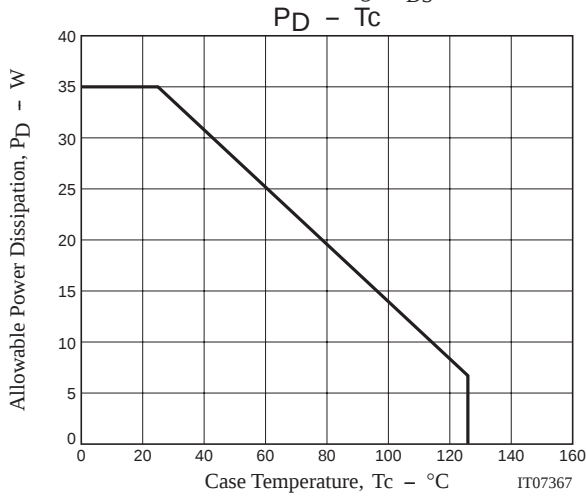
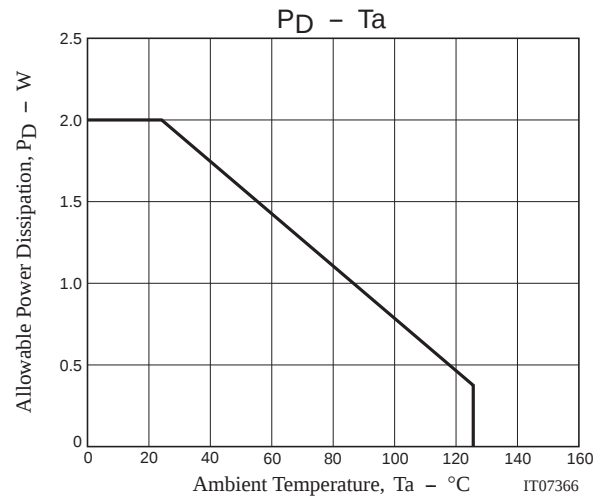
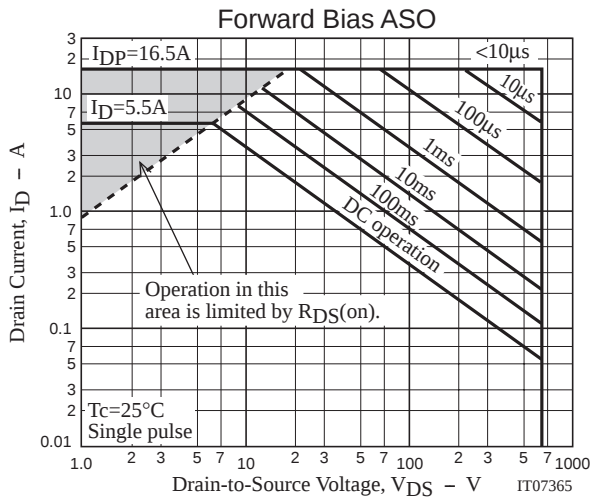
Circuit Function Diagram

[Feedback control]



[Semi-regulated control]





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