



SANYO Semiconductors

DATA SHEET

TN6R03 — 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		4.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	13.5	A
IC Input Voltage	V _{IN}		30	V
Allowable Power Dissipation	P _D		2.0	W
		Tc=25°C	30	W
Operating Temperature	Topr		-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=2.3A, VDELAY=15V		1.55	2.0	Ω
Input Capacitance	Ciss	VDS=20V, f=1MHz		1150		pF
Output Capacitance	Coss	VDS=20V, f=1MHz		200		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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TN6R03

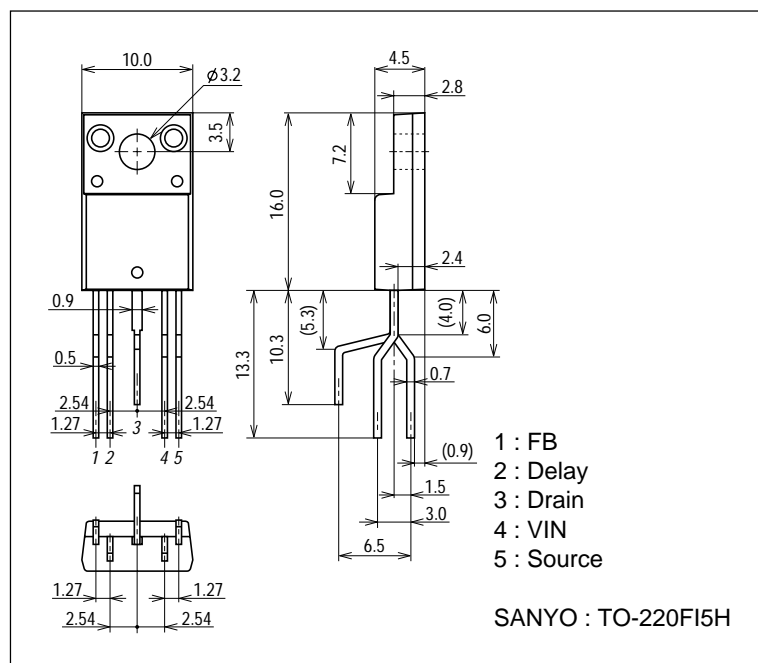
Recommend Operating Conditions at $T_a=25^{\circ}\text{C}$

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

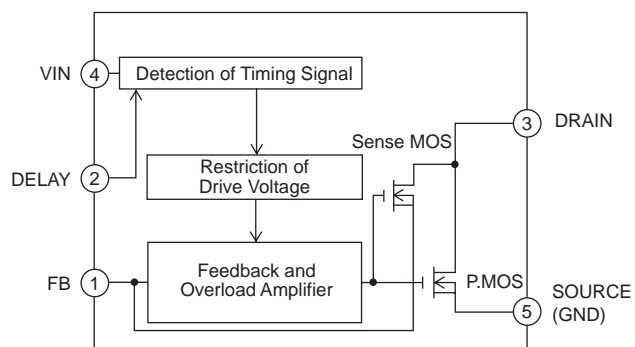
Package Dimensions

unit : mm

2226



Block Diagram

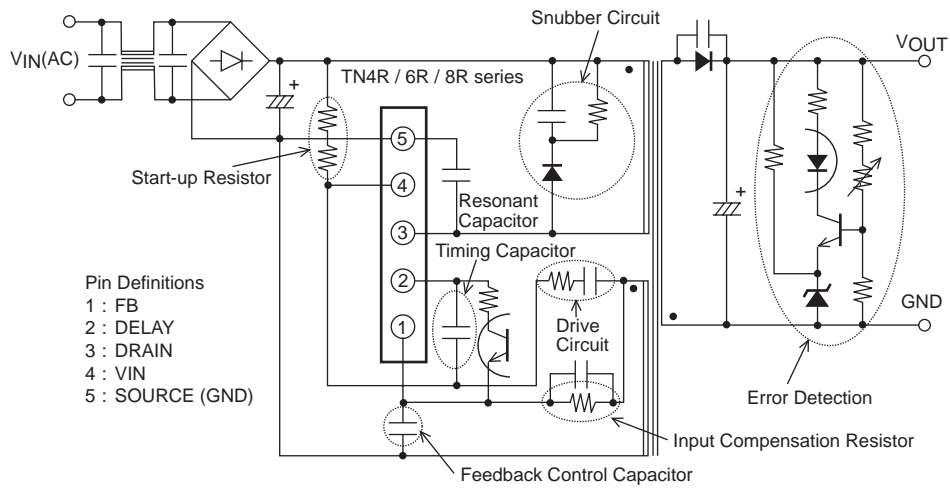


Pin Functions

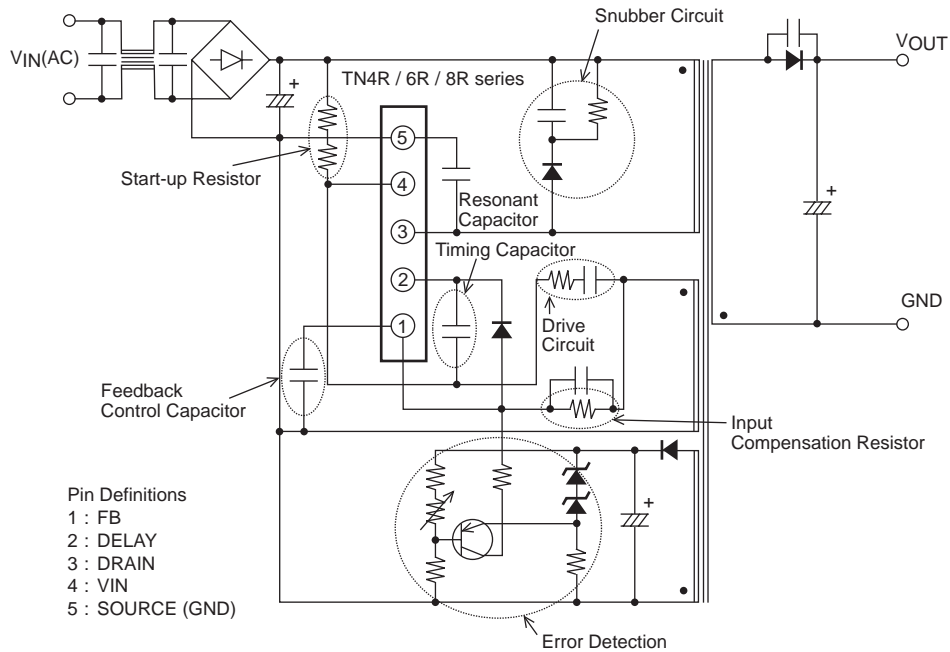
Pin No.	Symbol	Function
1	FB	Input for feedback voltage and current sense
2	DELAY	Input for timing signal
3	DRAIN	Power MOSFET Drain
4	VIN	Input for Start-up voltage and drive voltage
5	SOURCE(GND)	Power MOSFET Source (Ground)

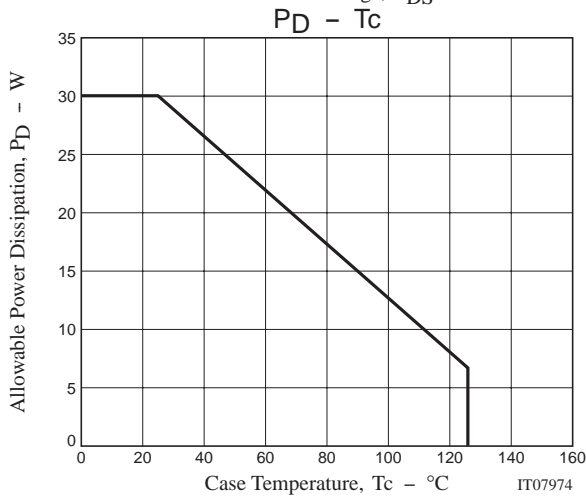
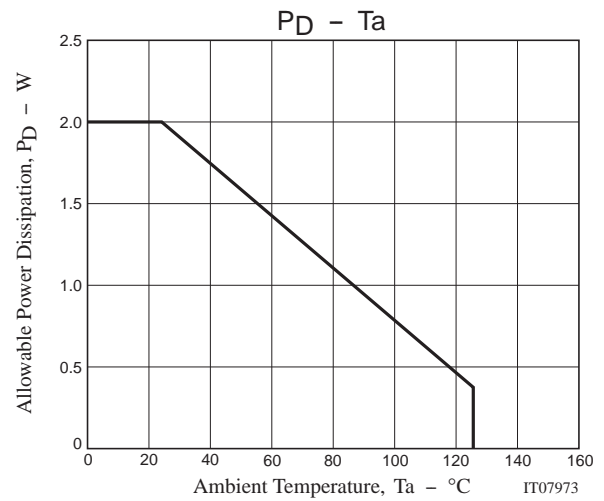
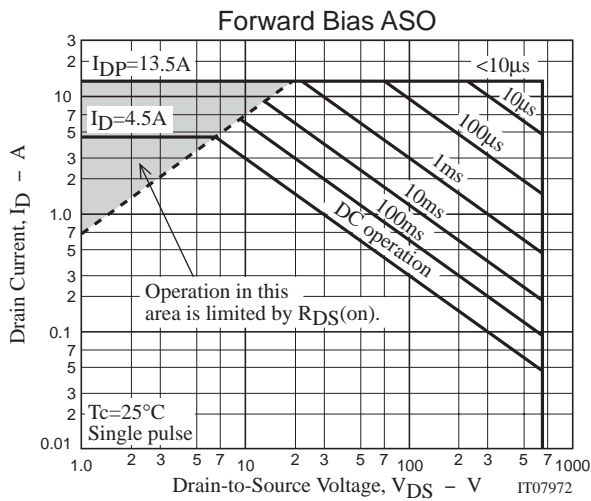
Sample Application Circuit

[Feedback control]



[Semi-regulated control]





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