



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
		T _c =25°C	30	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}	I _D =1mA, V _{DELAY} =0	650			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =650V, V _{DELAY} =0			1.0	mA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	3.0		4.0	V
Static Drain-to-Source On-State Resistance	R _{DS(on)}	I _D =2.3A, V _{DELAY} =15V		1.55	2.0	Ω
Input Capacitance	C _{iss}	V _{DS} =20V, f=1MHz		1150		pF
Output Capacitance	C _{oss}	V _{DS} =20V, f=1MHz		200		pF
[IC]						
Restriction of Drive Voltage	V _{IN(OV)}	I _{IN} =1mA, V _{FB} =0	30			V
Detection Voltage of Feedback and Overload Amplifier	V _{FB}	V _{DELAY} , V _{IN} =10V, I _{IN} =50mA		2.0		V

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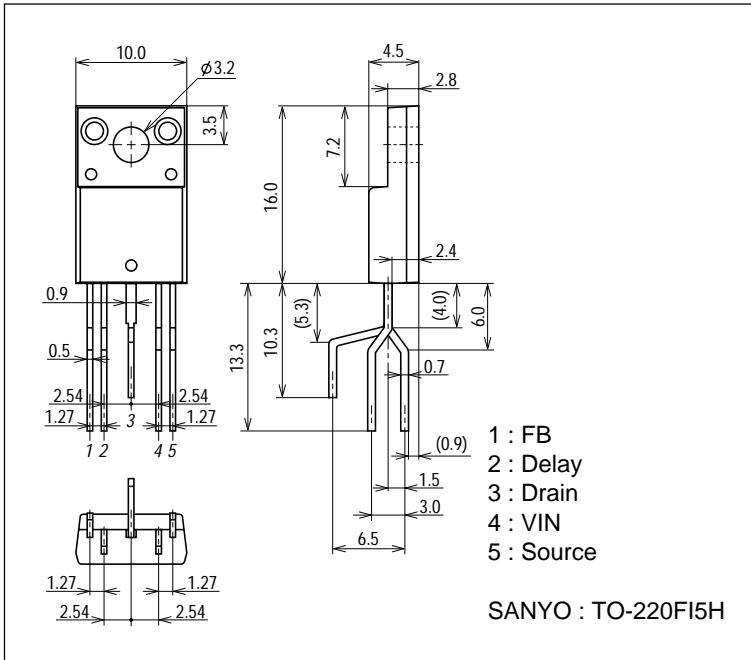
Recommend Operating Conditions at Ta=25°C

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

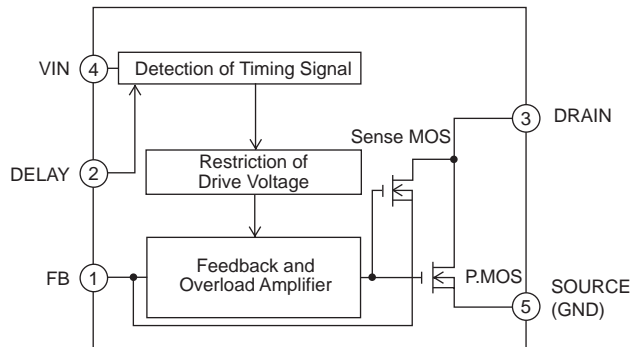
Package Dimensions

unit : mm

2226



Block Diagram



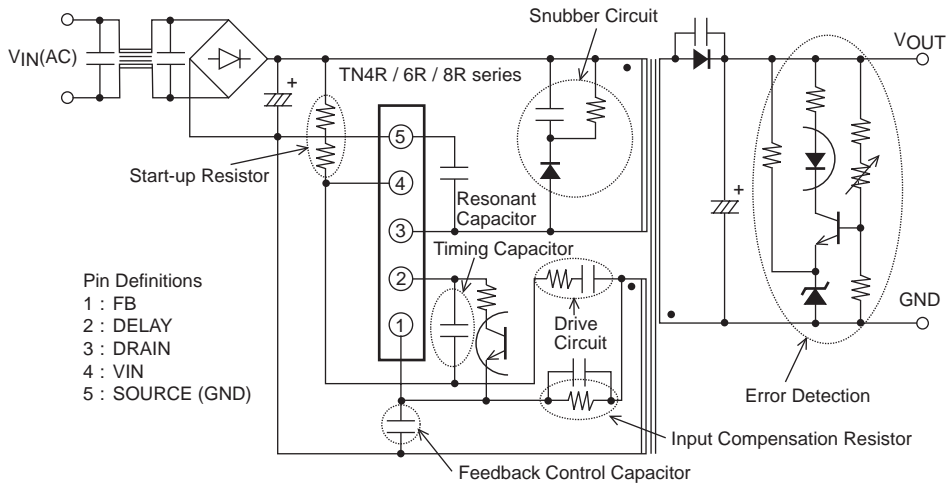
Pin Functions

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)

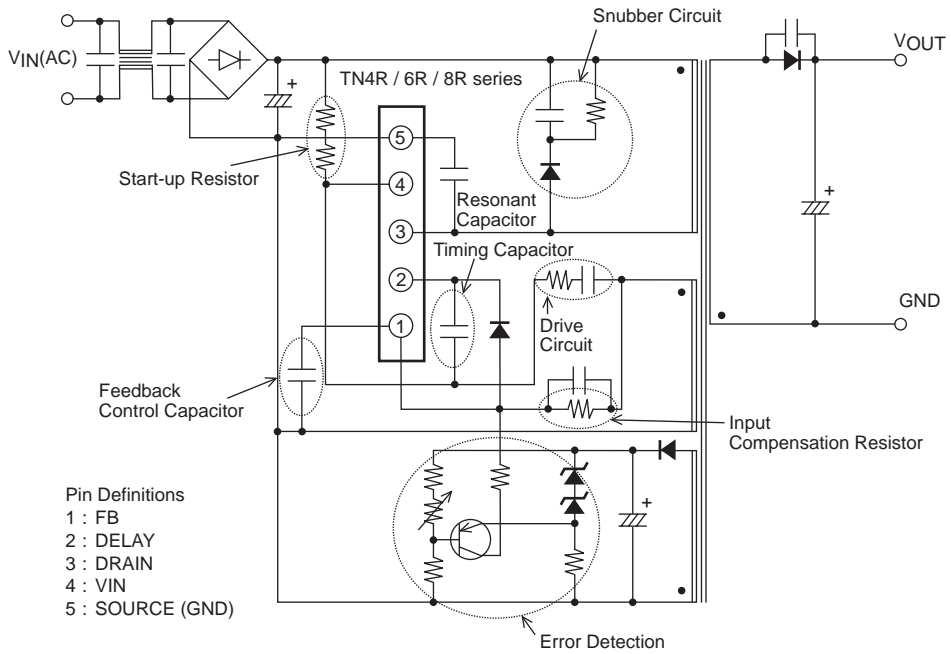
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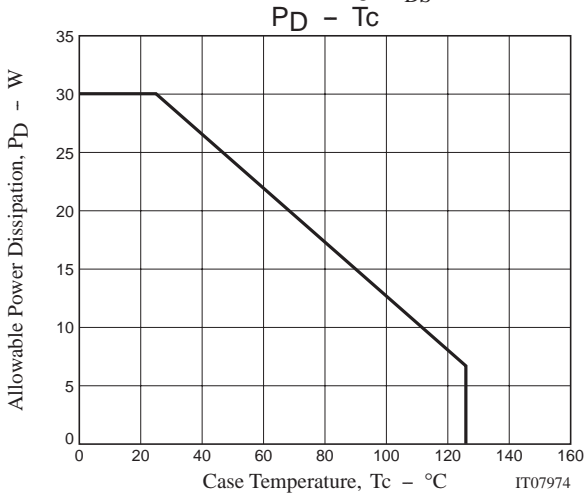
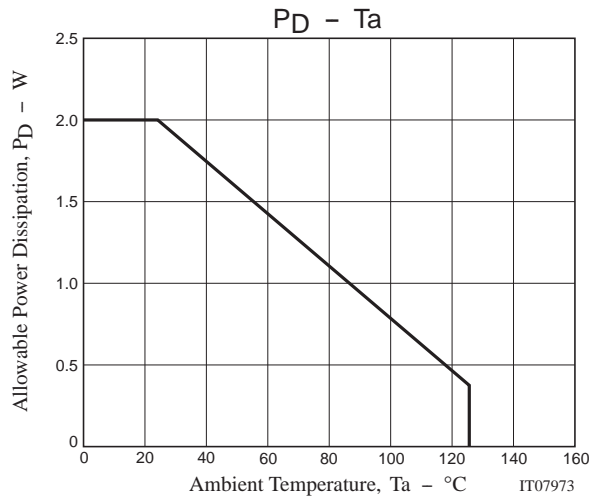
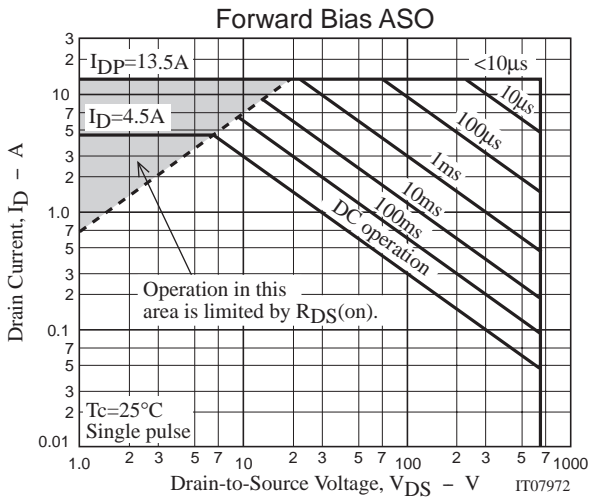
Sample Application Circuit

[Feedback control]



[Semi-regulated control]





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