ELECTRONICS, INC.
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NTE7125 & NTE7126
Integrated Circuit
Switching Regulator

Description:

The NTE7125 and NTE7126 are integrated circuits in a 12–Lead SIP type package incorporating all the power switching, amplifier, error detection, and overcurrent protection circuits required in a self–extcitation type semi–regulated off–line switching regulator. As a result, these devices can be used in the design of switching power supplies with a minimal number of external components. Furthermore, the adoption of MOSFET power switching elements supports a higher oscillation frequency than possible with bi–polar transistors. This allows smaller pulse transformers and capacitors to be used, making it possible to construct miniature power supply systems.

Features:

- Power MOSFET Devices
- Ideal for Semi–Regulated Control Switching Supplies
- Error Detection Circuit On–Chip (40.5V ±0.5V Set Refernce Voltage)
- Overcurrent Protection Circuit On–Chip
- Higher Oscillation Frequency allows the use of Smaller Pulse Transformers
- IMST Substrate acts as an Electromagnetic Shield, makinf Low–Noise Designs Possible

Applications:

- CRT/CTV Power Supplies
- Office Automation Equipment Power Supplies

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Operating Substrate Temperature (Recommended value is +105°C), $T_C$max . . . . . +115°C
AC Input Voltage, V_{AC} . . . . . $140V_{rms}$
OPerating Temperature Range, T_{opr} . . . . . –10° to +85°C
Storage Temperature Range, T_{stg} . . . . . –30° to +115°C
Maximum Output Power (V_O = 135V), $W_O$max
NTE7125 . . . . . 110W
NTE7126 . . . . . 145W

TR1

Drain Current, I_D
NTE7125 . . . . . 6A
NTE7126 . . . . . 8A
Pulse Drain Current, $I_{D\ (pulse)}$ 20A
Drain Reverse Current, I_{DR} 6A
Gate–Source Voltage, V_{GSS} . . . . . ±30V

Absolute Maximum Ratings (Cont'd): (T_A = +25°C unless otherwise specified)

TR1 (Cont'd)

Allowable Power Dissipation, P_D 78.1W

Chip Junction Temperature, $T_J$max . . . . . +150°C

Thermal Resistance, Junction–to–Case, $R_{thJ–C}$ . . . . . 1.6°C/W

ZD1

Allowable Power Dissipation, P_{ZD1} 500mW

Chip Junction Temperature, $T_{J\ (ZD1)}$max . . . . . +125°C

Thermal Resistance, Junction–to–Case, $R_{thJ–C\ (ZD1)}$ . . . . . 0.2°C/W

Allowable Operating Ranges: (T_A = +25°C unless otherwise specified)

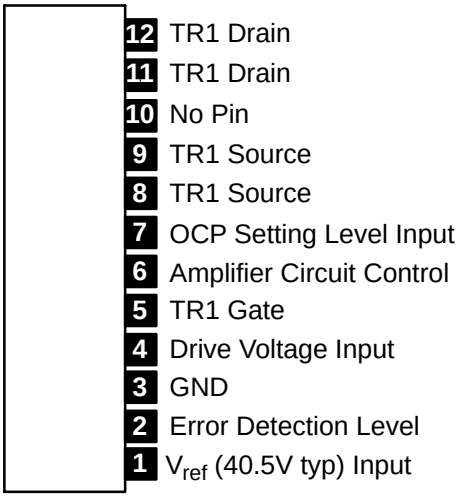
Pin4 Input Voltage, V_4 . . . . . ±6 to ±24V

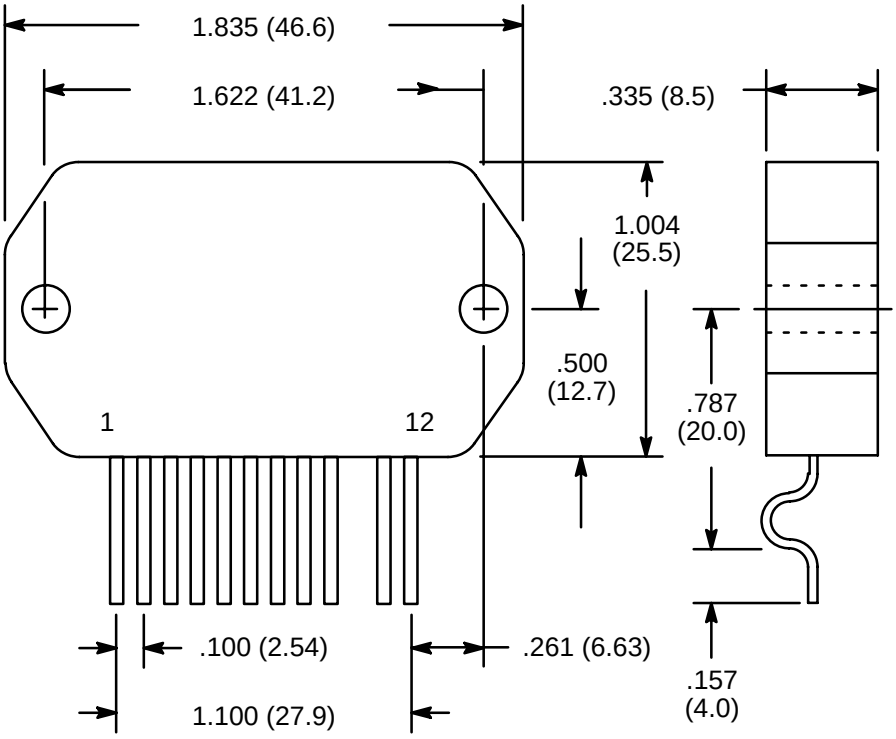
Oscillator Frequency, f_{OSC} . . . . . 20 to 120kHz

Operating Characteristics: (T_A = +25°C, T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage Setting		I_{IN} = 8mA	40.0	40.5	41.0	V
Output Voltage Temperature Coefficient		T_C = 0° to +105°C, I_{IN} = 8mA	–	7	–	mV/°C
TR1						
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 10mA, V_{GS} = 0V	500	–	–	V
Gate–Source Cutoff Voltage	$V_{GS(off)}$	I_D = 1mA, V_{DS} = 10V	2.0	–	3.0	V
ON Resistance NTE7125 NTE7126	$R_{DS(on)}$	I_D = 2.5A, V_{GS} = 10V	 – –	 1.4 0.8	 1.8 1.8	 Ω Ω
Input Capacitance	C_{iss}	V_{DS} = 10V, V_{GS} = 0V, f = 1MHz	–	800	–	pF
ZD1						
Zener Voltage	V_Z	I_Z = 5mA	23.7	–	26.3	V

Pin Connection Diagram
(Front View)




1.835 (46.6)
1.622 (41.2)
.335 (8.5)
1.004
(25.5)
.500
(12.7)
.787
(20.0)
1
12
.100 (2.54)
.261 (6.63)
1.100 (27.9)
.157
(4.0)