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## NTE7078 Integrated Circuit Hybrid Switching Voltage Regulator

### Absolute Maximum Ratings:

Maximum Peak Input Voltage, $V_{IN}$ .....	850V
Input Current, $I_{IN}$	
Continuous .....	6A
Pulse .....	12A
Power Dissipation ( $T_C = +100^\circ\text{C}$ ), $P_D$ .....	27W
Power Transistor Junction Temperature, $T_J$ .....	+150°C
Operating Temperature Range (Case Temperature, Note 1), $T_{opr}$ .....	-20° to +125°C
Storage Temperature Range, $T_{stg}$ .....	-30° to +125°C

Note 1. Recommended Operating Temperature:  $T_{opr} = +100^\circ\text{C}$

### Electrical Characteristics: ( $T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$	$V_{IN} = 220\text{V}$ , $I_O = 700\text{mA}$ , Note 2	113.5	115.0	116.5	V
Sensing Voltage (Fixed Voltage)	$V_O$	$I_{IN} = 7\text{mA}$	41.3	41.8	42.3	V
Line Regulation	$Reg_{LINE}$	$V_{IN} = 180\text{V}$ to $280\text{V}$ , $I_O = 700\text{mA}$	Initial Value $\pm 1\text{V}$			V
Load Regulation	$Reg_{LOAD}$	$V_{IN} = 220\text{V}$ , $I_O = 400\text{mA}$ to $700\text{mA}$	Initial Value $\pm 2\text{V}$			V
Output Voltage Temperature Coefficient	$K_t$	$T_C = -20^\circ$ to $+100^\circ\text{C}$ , $I_{IN} = 7\text{mA}$	-	$\pm 2$	-	mV/°C
Saturation Voltage	$V_{CE(sat)}$	$I_C = 2\text{A}$ , $I_B = 400\text{mA}$	-	-	0.4	V
	$V_{BE(sat)}$	$I_C = 2\text{A}$ , $I_B = 400\text{mA}$	-	-	1.5	V
DC Current Gain	$h_{FE}$	$I_C = 1\text{A}$ , $V_{CE} = -4\text{V}$	15	-	38	
Collector Cutoff Current	$I_{CEX}$	$V_{CE} = 850\text{V}$ , $V_{BE} = -1.5\text{V}$	-	-	1	mA
Power Transistor Thermal Resistance	$R_{\theta JC}$	Between Junction and Case	-	1.8	-	°C/W
Switching Time	$t_s$	$I_C = 2\text{A}$ , $I_{B1} = 400\text{mA}$ , $I_{B2} = -400\text{mA}$ , $R_L = 100\Omega$	-	-	11.0	$\mu\text{s}$
	$t_f$		-	-	0.5	$\mu\text{s}$

Note 2. Output voltage is determined by the ratio between the sensing winding "D" and the secondary winding "S".

### Pin Connection Diagram (Front View)

