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## NTE1894 Integrated Circuit Hybrid Switching Voltage Regulator

**Absolute Maximum Ratings:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Peak Input Voltage, $V_{IN}$ .....	500V
Input Current, $I_{IN}$	
Continuous .....	10A
Pulse .....	20A
Power Dissipation ( $T_C = +100^\circ\text{C}$ ), $P_D$ .....	27W
Junction Temperature, $T_J$ .....	+150°C
Operating Case Temperature Range, $T_{opr}$ .....	-20° to +125°C
Storage Temperature Range, $T_{stg}$ .....	-30° to +125°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Set Output Voltage	$V_O$	$I_{IN} = 7\text{mA}$	41.3	41.8	42.3	V
Output Voltage		$V_{IN} = 100\text{V}, I_{O1} = 1.2\text{A}$	115 ±2			V
Line Regulation vs. Input Voltage	$Reg_{LINE1}$	$V_{IN} = 85\text{V to } 132\text{V}, I_O = 1.2\text{A}$	Initial Value ±2			V
Line Regulation vs. Output Current	$Reg_{LINE2}$	$V_{IN} = 100\text{V}, I_{O1} = 0.4 \text{ to } 1.2\text{A}$	Initial Value ±2			V
Temperature Coefficient of Output Voltage		$T_C = -20^\circ \text{ to } +100^\circ\text{C}, I_{IN} = 7\text{mA}$	±2			mV/°C
<b>Power Transistor Characteristics</b>						
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5\text{A}, I_B = 1\text{A}$	–	–	0.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 5\text{A}, I_B = 1\text{A}$	–	–	1.5	V
Collector Cutoff Current	$I_{CEX}$	$V_{CE} = 500\text{V}, V_{BE} = -1.5\text{V}$	–	–	1	mA
DC Current Gain	$h_{FE}$	$V_{CE} = 4\text{V}, I_C = 1\text{A}$	15	–	40	
Switching Turn–On Time	$t_{on}$		–	–	10	µs
Switching Fall Time	$t_f$		–	–	0.4	µs
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Top Part of Junction Stem	1.8			°C/W

