

NTE7046 Integrated Circuit Hybrid Switching Regulator

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

TR1 Collector–Emitter Voltage (Note 1), V_{CEX}	500V
Applying Voltage, Pin4–2, V_{2-4}	12V
Applying Voltage, Pin2–5, V_{2-5}	12V
Applying Voltage, Pin5–9, V_{5-9}	30V
Applying Voltage, Pin7–6, V_{7-6}	5V
TR1 Collector Current, $I_{C(TR1)}$	
Continuous	10A
Pulsed	20A
TR4 Collector Current, $I_{C(TR4)}$	500mA
D2 Forward Current, $I_{IN(D2)}$	500mA
D3 Forward Current, $I_{IN(D3)}$	100mA
Maximum Power Dissipation (Note 2), P_D	
No Fin	3.2W
$T_{C1} = +100^\circ\text{C}$	2.7W
TR1 Junction Temperature, T_J	$+150^\circ\text{C}$
Frame Temperature Range (Operating, Note 3), T_{C2}	-20° to $+125^\circ\text{C}$
Storage Temperature Range, T_{stg}	-30° to $+125^\circ\text{C}$
Maximum Output Current ($V_O = 115\text{V}$), I_O	1.7A

Note 1. Reference: $V_{CEO} = 400\text{V}$ Min

Note 2. T_{C1} denotes the temperature of resin beneath the Power Transistor.

Note 3. T_{C2} denotes the internal frame temperature. Recommended $T_{C2} = +100^\circ\text{C}$.

Electrical Characteristics (TR1 Characteristics): ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Saturation Voltage	$V_{CE(sat)}$	$I_C = 8\text{A}, I_B = 1.2\text{A}$	–	–	0.5	V
	$V_{BE(sat)}$	$I_C = 6\text{A}, I_B = 1.2\text{A}$	–	–	1.5	V
DC Current Gain	h_{FE}	$I_C = 1\text{A}, V_{CE} = 4\text{V}$	15	–	40	
Collector Cutoff Current	I_{CEX}	$V_{CE} = 500\text{V}, V_{BE} = 1.5\text{V}$	–	–	8	mA
Power Transistor Thermal Resistance	$R_{\theta JC2}$	Between Junction and Internal Frame	–	0.7	–	$^\circ\text{C/W}$
Switching Time	t_s		–	–	10.0	μs
	t_f		–	–	0.6	μs

Pin Connection Diagram
(Front View)

