

ELECTRICAL CHARACTERISTICS (con't)

Characteristics		Symbol	Min.	Max.	Unit
ON CHARACTERISTICS ⁽³⁾					
Forward-Current Transfer Ratio		h_{FE}			
$I_C = 15 \text{ Adc}$, $V_{CE} = 4.0 \text{ Vdc}$	2N3771		15	60	
$I_C = 10 \text{ Adc}$, $V_{CE} = 4.0 \text{ Vdc}$	2N3772		15	60	
$I_C = 1.0 \text{ Adc}$, $V_{CE} = 4.0 \text{ Vdc}$	Both		40	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			
$I_C = 15 \text{ Adc}$, $I_B = 1.5 \text{ Adc}$	2N3771			1.5	Vdc
$I_C = 30 \text{ Adc}$, $I_B = 6.0 \text{ Adc}$	2N3771			4.0	
$I_C = 10 \text{ Adc}$, $I_B = 1.0 \text{ Adc}$	2N3772			1.2	
$I_C = 20 \text{ Adc}$, $I_B = 4.0 \text{ Adc}$	2N3772			4.0	
Base-Emitter Voltage (non-saturated)		V_{BE}			
$I_C = 15 \text{ Adc}$, $V_{CE} = 4.0 \text{ Vdc}$	2N3771			2.3	Vdc
$I_C = 10 \text{ Adc}$, $V_{CE} = 4.0 \text{ Vdc}$	2N3772			2.0	

DYNAMIC CHARACTERISTICS

Small-Signal Cutoff Frequency		h_{fe}	40		
$I_C = 1.0 \text{ Adc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward-Current Transfer		$ h_{fe} $	6.0	30	
$I_C = 1.0 \text{ Adc}$, $V_{CE} = 4.0 \text{ Vdc}$, $f = 100 \text{ kHz}$					
Output Capacitance		C_{obo}		1200	p^f
$V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$					

SWITCHING CHARACTERISTICS

Turn-On Time		t_{on}			
$V_{CC} = 30 \text{ Vdc}$; $I_C = 15 \text{ Adc}$; $I_{B1} = 1.5 \text{ Adc}$	2N3771			10	μs
$V_{CC} = 30 \text{ Vdc}$; $I_C = 10 \text{ Adc}$; $I_{B1} = 1.0 \text{ Adc}$	2N3772			8.0	
Turn-Off Time		t_{off}			
$V_{CC} = 30 \text{ Vdc}$; $I_C = 15 \text{ Adc}$; $I_{B1} = 1.5 \text{ Adc}$; $I_{B2} = -1.5 \text{ Adc}$	2N3771			12	μs
$V_{CC} = 30 \text{ Vdc}$; $I_C = 10 \text{ Adc}$; $I_{B1} = 1.0 \text{ Adc}$; $I_{B2} = -1.0 \text{ Adc}$	2N3772			10	

SAFE OPERATING AREA**DC Tests** $T_C = +25^\circ\text{C}$, 1 Cycle, $t = 1.0 \text{ s}$ **Test 1 (2N3771 only)** $V_{CE} = 5.0 \text{ Vdc}$, $I_C = 30 \text{ Adc}$ **Test 2 (2N3771 only)** $V_{CE} = 40 \text{ Vdc}$, $I_C = 3.75 \text{ Adc}$ **Test 3 (2N3772 only)** $V_{CE} = 7.5 \text{ Vdc}$, $I_C = 20 \text{ Adc}$ **Test 4 (2N3772 only)** $V_{CE} = 60 \text{ Vdc}$, $I_C = 2.5 \text{ Adc}$ **Clamped Inductive** $T_A = +25^\circ\text{C}$; duty cycle $\leq 10\%$; $R_S = 0.1 \Omega$ **Test 1 (2N3771 only)** $R_{BB1} = 2.0 \Omega$; $V_{BB1} \leq 14 \text{ Vdc}$; $R_{BB2} = 100 \Omega$; $V_{CC} = 20 \pm 5.0 \text{ Vdc}$; $V_{BB2} = 1.5 \text{ Vdc}$; $I_C = 30 \text{ Adc}$; $R_L \leq 0.67 \Omega$; $L = 5.0 \text{ mH}$ **Test 2 (2N3772 only)** $R_{BB1} = 2.0 \Omega$; $V_{BB1} \leq 10 \text{ Vdc}$; $R_{BB2} = 100 \Omega$; $V_{CC} = 40 \pm 5.0 \text{ Vdc}$; $V_{BB2} = 1.5 \text{ Vdc}$; $I_C = 20 \text{ Adc}$; $R_L \leq 2.0 \Omega$; $L = 5.0 \text{ mH}$ ⁽³⁾ Pulse Test: Pulse Width = $300 \mu s$, Duty Cycle $\leq 2.0\%$.