

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS ⁽³⁾				
Forward-Current Transfer Ratio $I_C = 1.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 15 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ 2N4399 $I_C = 10 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ 2N5745 $I_C = 30 \text{ Adc}, V_{CE} = 5.0 \text{ Vdc}$ 2N4399 $I_C = 20 \text{ Adc}, V_{CE} = 5.0 \text{ Vdc}$ 2N5745	h_{FE}	40 15 15 5.0 5.0	425 60 60	
Collector-Emitter Saturation Voltage $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$ $I_C = 10 \text{ Adc}, I_B = 1.0 \text{ Adc}$ 2N4399 2N5745	$V_{CE(sat)}$		0.55 0.75 1.0	Vdc
Base-Emitter Saturation Voltage $I_C = 10 \text{ Adc}, I_B = 1.0 \text{ Adc}$ $I_C = 15 \text{ Adc}, I_B = 1.5 \text{ Adc}$ 2N4399 2N5745	$V_{BE(sat)}$		1.7 1.8 2.0	Vdc

DYNAMIC CHARACTERISTICS

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 1.0 \text{ Adc}, V_{CE} = 10 \text{ Vdc}, f = 1.0 \text{ MHz}$	$ h_{fe} $	4.0	40	
Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 1.0 \text{ Adc}, V_{CE} = 10 \text{ Vdc}, f = 1.0 \text{ MHz}$	h_{fe}	40	425	
Output Capacitance $V_{CB} = 10 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{obo}		1000	pF

SAFE OPERATING AREA

DC Tests $T_C = +25^\circ\text{C}, 1 \text{ Cycle}, t = 1.0 \text{ s}$				
Test 1 $V_{CE} = 6.67 \text{ Vdc}, I_C = 30 \text{ Adc}$ 2N4399 $V_{CE} = 10 \text{ Vdc}, I_C = 20 \text{ Adc}$ 2N5745				
Test 2 $V_{CE} = 20 \text{ Vdc}, I_C = 10 \text{ Adc}$ All Types				
Test 3 $V_{CE} = 40 \text{ Vdc}, I_C = 3.0 \text{ Adc}$ All Types				
Test 4 $V_{CE} = 50 \text{ Vdc}, I_C = 600 \text{ mAdc}$ 2N4399 $V_{CE} = 60 \text{ Vdc}, I_C = 600 \text{ mAdc}$ 2N5745				

(3) Pulse Test: Pulse Width = 300 μ s, Duty Cycle $\leq$ 2.0%.