

2N5038, 2N5039, JAN SERIES

ELECTRICAL CHARACTERISTICS (con't)

Characteristics		Symbol	Min.	Max.	Unit
ON CHARACTERISTICS ⁽²⁾					
Forward-Current Transfer Ratio I _C = 0.5 Adc, V _{CE} = 5.0 Vdc	2N5038	h _{FE}	50		
	2N5039		30		
I _C = 2.0 Adc, V _{CE} = 5.0 Vdc	2N5038		50	200	
	2N5039		30	150	
I _C = 12 Adc, V _{CE} = 5.0 Vdc	2N5038		15		
I _C = 10 Adc, V _{CE} = 5.0 Vdc	2N5039		15		
Collector-Emitter Saturation Voltage I _C = 12 Adc, I _B = 1.2 Adc	2N5038	V _{CE(sat)}		1.0	Vdc
I _C = 10 Adc, I _B = 1.0 Adc	2N5039		1.0		
I _C = 20 Adc, I _B = 5.0 Adc	Both		2.5		
Base-Emitter Saturation Voltage I _C = 20 Adc, I _B = 5.0 Adc		V _{BE(sat)}		3.3	Vdc
Base-Emitter Voltage I _C = 12 Adc, V _{CE} = 5.0 Vdc	2N5038	V _{BE}		1.8	Vdc
I _C = 10 Adc, V _{CE} = 5.0 Vdc	2N5039		1.8		

DYNAMIC CHARACTERISTICS

Forward Current Transfer Ratio I _C = 2.0 Adc, V _{CE} = 10 Vdc, f = 5.0 MHz		h _{FE}	12	48	
Output Capacitance V _{CB} = 10 Vdc, I _E = 0, 100 kHz ≤ f ≤ 1.0 MHz		C _{obo}		500	pF

SWITCHING CHARACTERISTICS

Turn-On Time V _{CC} = 30 ± 2 Vdc; I _C = 12 Adc; I _{B1} = 1.2 Adc	2N5038	t _{on}		0.5	μs
V _{CC} = 30 ± 2 Vdc; I _C = 10 Adc; I _{B1} = 1.0 Adc	2N5039				
Turn-Off Time V _{CC} = 30 ± 2 Vdc; I _C = 12 Adc; I _{B1} = -I _{B2} = 1.2 Adc	2N5038	t _{off}		2.0	μs
V _{CC} = 30 ± 2 Vdc; I _C = 10 Adc; I _{B1} = -I _{B2} = 1.0 Adc	2N5039				

SAFE OPERATING AREA

DC Tests T _C = +25°C, 1 Cycle, t = 1.0 s					
Test 1 V _{CE} = 28 Vdc, I _C = 5.0 Adc					
Test 2 V _{CE} = 45 Vdc, I _C = 0.9 Adc					
Test 3 V _{CE} = 7.0 Vdc, I _C = 20 Adc					
Test 4 V _{CE} = 90 Vdc, I _C = 0.23 Adc					
	2N5038				
Test 4 V _{CE} = 75 Vdc, I _C = 0.32 Adc					
	2N5039				

(2) Pulse Test: Pulse Width = 300μs, Duty Cycle ≤ 2.0%.